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POSTERS

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PO 001. COCCIDIOIDOMYCOSIS. A EUROPEAN CASE

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Introduction: Coccidioidomycosis is a fungal infection caused by inhalation of *Coccidioides immitis* or *C. posadasii* airborne spores, which exist in the arid areas of the American continent. Diagnosis requires culture, histologic or serologic identification. In 60-65% of cases, infection is asymptomatic. Most symptomatic patients complain of influenza-like illness that resolve spontaneously. Coccidioides have predilection for lung, skin, musculoskeletal system and CNS. Treatment should be initiated when lung infection is severe, in chronic lung disease, in disseminated disease, which occurs in less than 1% of the cases and in immunocompromised patients.
Case report: A 52 year-old man, retired on disability for osteoarticular pathology, 40 pack-year smoker, with a history of alcoholic liver disease and pulmonary emphysema, cannabinoid use and previous travel to Morocco in the 80s, was admitted to the Intensive Medicine Department for right community-acquired pneumonia requiring mechanical ventilatory support (PSI class V). Empirical broad spectrum antibiotic was started and later adjusted after *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus* were identified in sputum. The laboratory workup revealed presence of cannabinoid in urine. Urine and blood cultures were negative as were serology for viral infections. Chest CT showed parenchymal consolidation areas distributed by upper, middle and lower right lobes with necrotic nodular areas inside and right hilar and mediastinal lymphadenopathy. After he was transferred to the Pulmonology Department he maintained febrile peaks, elevated inflammatory parameters and radiological infiltrates despite directed antibiotic therapy. Bronchoscopy showed mucosal inflammation and bilateral thick secretions. The bacterial cultures of these secretions still grew *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus*. As imaging changes persisted even after negative results of sputum cultures, transthoracic lung biopsy was performed and histology showed spherical or oval structures with PAS enhanced membrane, corresponding to Coccidioides or HISTOPLASMA. Serology for *Coccidioidis immitis* by agglutination was positive. Diagnosis of pulmonary coccidioidomycosis was established and treatment with itraconazole 400 mg per day was started in the Infectious Diseases outpatient clinic. There was gradual radiologic improvement. Chest CT performed after one year of therapy shows dispersed areas of pulmonary densification consistent with residual lesions and a 5 cm thin-walled hyper transparent image in the right lower lobe.
Discussion: Although in this case risk factors for developing coccidioidomycosis, such as travel to endemic areas, were not clear the use of cannabinoids from these regions could be the cause of infection. Antifungal treatment, that in such cases must be long-course therapy, resulted in progressive imaging improvement.

Keywords: *Coccidioidomycosis. Coccidioide immitis. Coccidioide posadasii.*

PO 002. BURKHOLDERIA CEPACIA INFECTION IN IMMUNOCOMPETENT PATIENT WITH NON-CYSTIC FIBROSIS BRONCHIECTASIS

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Introduction: The authors report a case of a 66 year old male patient, seller, ex-smoker of 33 pack-year, with severe persistent bronchial asthma since age of 35, COPD GOLD C group and left lower lobectomy in 1999 for localized bronchiectasis, under combined inhalation therapy with tiotropium, fluticasone + salmeterol and formeterol in SOS.
Case report: Patient stayed clinically stable, with no exacerbations until 2014, when he started with persistent mucopurulent bronchorrhea and rapidly progressive worsening of exertional dyspnea associated with recurrent pneumonias with type 1 respiratory failure. The patient had several hospital admission episodes and identification of microbiological agents with clinical, laboratory and imaging complete response to antibiotics. In one exacerbation, the patient had persistent hypoxemia without clinical or analytical improvement, despite antibiotic therapy. Physical examination showed signs of respiratory distress, with bilateral rales on auscultation. Laboratory tests revealed leukocytosis (17.6),

neutrophilia (83%); and type 1 respiratory failure, negativity for all autoantibodies tested and immunoglobulins unchanged. The dosing of A1AT was within the reference range. The imaging evaluation identified on high resolution thoracic CT the presence of diffuse bilateral bronchiectasis. Because of the incomplete response to antibiotic therapy and based on the suspicion of specific resistant agent infection, a flexible bronchoscopy was carried out to clarify the diagnosis. *Burkholderia cepacia* was identified in 3 spontaneous sputum samples. The patient started intravenous antibiotic therapy with sulfamethoxazole/trimethoprim and meropenem for 21 days. Initially there was clinical improvement, followed with clinical and analytical worsening, maintaining a mucopurulent expectoration. The new cultures identified a methicillin-resistant *Acinetobacter baumannii*, so the patient started a new intravenous treatment with Colistin that lasted 21 days. Due to the identification of *Burkholderia cepacia* in an immunocompetent patient, a genetic study was performed, showing the patient had the IVS8-5T variant in the CFTR gene which does not confirm the diagnosis of cystic fibro-sis and none of the other common mutations in the CFTR gene were detected. Since the first identification of Burkholderia cepacia and the targeted anti-biotic therapy, the sputum samples taken showed only colonization with *Acinetobacter baumannii* until today.

Discussion: Bronchiectasis are defined by permanent dilation of the airways. They were first described by Rene Theophile Laennec in 1892. They occur more frequently as sequelae of respiratory infections and its preva-lence varies widely, in Finland is about 3.9 per 100,000 population while in the US could reach 52 per 100,000. In the UK, about 40% of cystic fibrosis patients are colonized with *Burkholderia cepacia*. On the other hand, in patients without cystic fibrosis, *Burkholderia cepacia* is typically a hospital acquired infection in immunocompromisedpatients or mechanically ventilated patients. The authors decided to report this case because of the rarity of bronchiectasis infected with *Burkholderia cepacia* in immunocompetent patients without cystic fibrosis.

***Keywords**: Non-cystic fibrosis bronchiectasis. Burkholderia cepacia. Acinetobacter baumannii. Immunocompetent.*

PO 003. STRONGYLOIDIASIS, A SPORADIC BUT POTENTIALLY FATAL DISEASE

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Introduction: Strongyloidiasis is an endemic disease in tropical and sub-tropical regions. It occurs sporadically in temperate areas, mainly affecting emigrants and travelers from endemic countries. Clinical manifestations depend on the parasite's ability to cause autoinfection (increasing the burden of adult worms) and on the host's cell-mediated immune response. Infection manifestations can range from asymptomatic eosinophilia in the immunocompetent host to disseminated disease with septic shock in the immunocompromised patient. Although autoinfection is limited by an intact immune response, the organism may persist for decades and cause clinical manifestations long after the initial infection. Usually this happens in the setting of immunosuppressive conditions like cancer or treatment with steroids or cytotoxic drugs. In this situations autoinfection may give rise to potentially fatal hyperinfection with massive dissemination of filariform larvae to multiple organs, most importantly lungs and gastrointestinal tract.
Case report: 60-year-old man, agronomic engineer. Lived in Mozambique until age 22 and worked in Lybia for two years around 1978. His past medical history included hypertension and hyperlipidemia. He was diagnosed urothelial carcinoma in 2013 and performed surgery followed by intravesical instillation of BCG, which was complicated by disseminated mycobacteriosis. In 2014 small cell lung cancer stage IV was diagnosed, with disease progression under chemotherapy. The patient was admitted to the Pulmonology Department with superior vena cava syndrome, treated with radiotherapy, steroids, diuretics and anti-coagulant therapy. He later developed haemoptysis and a bronchofibroscopy was performed. Larvae were found in bronchial secretions. *Strongyloides stercoralis* was identified in bronchial secretions and faeces. The patient wastreated with albendazole and was discharged. A week after discharge he presented to our emergency department complaining of abdominal pain, nausea, diarrhea, dry cough and fever. Because of the multisystemic symptoms a hyperinfection syndrome was suspected and the patient was admitted to the Internal Medicine Department. Although treated with Ivermectin there was progressive respiratory failure and persistent fever. Chest X-ray revealed bilateral interstitial infiltrates. Bacterial superinfection was suspected and empiric antibiotic therapy with meropenem was started. The patient was admitted to the ICU requiring ventilatory support. After achieving clinical stability he was transferred to the Infectious Diseases Department to complete therapy.
Conclusions: Although rare, strongyloidiasis may be a life-threatening disease. This is particularly true in the hyperinfection syndrome, which occurs more frequently in immunosuppressed hosts. It is vital to detect and eradicate Strongyloides infection before starting any immunosuppressive therapy, as well as to taper and, if possible stop immunosuppressive treatment in patients diagnosed with hyperinfection syndrome.

***Keywords**: Strongyloides stercoralis. Imunossupression. Hyperinfection syndrome.*

PO 004. DISSEMINATED CRYPTOCOCCOSIS

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Introduction: Cryptococcosis is the most common invasive mycosis in HIV patients annually affecting one million patients. Despite treatment, mortality is high, and in patients without treatment, is estimated around 70-80%, reaching 100% in cases of meningitis.
Case report: 36 year old man, unemployed, native of Guinea Bissau and living in Portugal since 2003. HBV and HIV 1 positive, diagnosed since 2007, with abandonment of antiretroviral therapy in 2012. Admitted in the Department of Pulmonology with complains of dyspnea, dry cough, asthenia, anorexia, weight loss and unquantified fever with 3 months of evolution with the appearance of a nasal lesion in the last month. On admission, he was conscious, hemodynamically stable, with fever (38.7 ºC) and with 97% saturation on room air. He presented a decrease in breath sounds on lung's auscultation and a rounded skin lesion, with 3 cm in diameter and necrotic crust, at the left nasal wing. Analytically he presented leukopenia (2250 leukocytes), CD4 + 4.98 cells/uL, viral load: 698,900 copies/uL. Also, a bilateral hilar reinforcement and right lung pleuritic, alongside a very discreet micronodulation on the middle zone of the same lung were observed on the chest X-ray. At the brain level, the CT scan revealed the presence of nucleo-capsular bilateral spherical hypodensities, not iodine-accumulating. At thoracic level, a micronodular parenchymal densification was documented. Generalized inflammatory aspects and an irregular mucosa in the upper left lobe bronchus were observed in bronchoscopy. The biopsy of this region and bronchial lavage revealed the presence *Cryptococcus neoformans*. The microbiological study

of cerebrospinal liquor revealed the presence of *Cryptococcus neoformans*. Blood cultures and serological study were positive for the same agent. Skin biopsy of the nasal injury was obtained and was also consistent with cutaneous cryptococcosis. The patient was initially treated with amphotericin B (AmB) and flucytosine. The latter was suspended for liver toxicity, and fluconazol was associated. No fever was observed after the 5th day of therapy and a total regression of brain lesions was verified. In the second week of therapy, the cerebrospinal fluid remained positive for Cryptococcus, but blood cultures were negative. He held double therapy for 6 weeks and resumed antiretroviral therapy after 4 weeks of AmB. At this point the cultural examination of *liquor* was negative. The patient presented symptomatic improvement with progressive regression of cutaneous lesions, and was kept with consolidation and maintenance therapy with fluconazole.
Discussion: Despite the decrease in the incidence of cryptococcosis, with the advent of antiretroviral therapy, HIV positive patients newly diagnosed or non-adherent patients remain at risk. In patients with pulmonary cryptococcosis, meningitis should be excluded by lumbar puncture, because it changes the prognosis, duration of therapy and warns about the danger of increased intracranial pressure. In the case of disseminated cryptococcosis, therapy should include an initial induction scheme with AmB and flucytosine, followed by a consolidation and maintenance scheme with fluconazole. The duration of each of these schemes vary according to the basic condition of the patient, the disease manifestation and response to therapy.

Keywords: *Cryptococcosis. HIV. Meningitis. Cryptococcus neoformans.*

PO 005. CHRONIC OBSTRUCTIVE PULMONARY DISEASE AS A RISK FACTOR OF PNEUMOCOCCAL INFECTION: AN OVERVIEW OF EPIDEMIOLOGY, PATHOGENESIS AND IMMUNIZATION STRATEGIES

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Pneumococcal disease is a broad term that includes infectious processes caused by *Streptococcus pneumoniae*, namely pneumonia, bacteremia, meningitis, sinusitis and otitis media. Invasive pneumococcal disease (IPD) is defined by the isolation of *S. pneumoniae* in a normally sterile site, such as blood or cerebrospinal fluid. In the adult population, age predominantly above 50 years, immunocompromising and other medical conditions, such as chronic respiratory, heart and liver disease, diabetes, alcohol abuse and smoking habits are associated with increased risk of IPD. The incidence of IPD is higher among adult patients with chronic pulmonary diseases (including asthma and chronic obstructive pulmonary disease [COPD]) than in healthy adults. This population is also at increased risk of hospitalization and death due to IPD than patients without respiratory diseases. *S. pneumoniae* is estimated to cause 30-50% of community-acquired pneumonia (CAP) requiring hospitalization in adults. Evidence shows that this microorganism is responsible for 10-15% of acute exacerbations and onset of often-severe pneumonia in patients with COPD. Epidemiological data from a study conducted in Lisbon Region in 2008 estimated a COPD prevalence of 14.2% among adults ≥ 40 years of age, steadily increasing with age, with 86.8% of underdiagnosed individuals. In 2012, the crude mortality rate due to COPD in Portugal was 7.6/100.000 persons, reflecting an increase *vs* 2010, more evident in the age group above 75 years. Immunization can be an effective strategy to prevent pneumococcal infection in COPD patients, which may result in decreased frequency of exacerbations and pneumonia. Until 2010, the only pneumococcal vaccine approved for use in adults in the United States (US) and Europe was the 23-valent pneumococcal polysaccharide vaccine (PPV23). Although PPV23 provides protection against IPD in healthy adults, there is controversy about its immunogenicity and effectiveness in the prevention of IPD in at risk and high risk adult patients and in the prevention of CAP in the adult population. The 13-valent pneumococcal conjugate vaccine (PCV13) is licensed in the UE for the prevention of pneumococcal disease in all pediatric ages, and for the prevention of IPD and CAP in adults ≥ 18 years. Currently, the Portuguese Pulmonology Society recommends immunization against pneumococcal disease for all adults ≥ 65 years, adults ≥ 50 years with chronic comorbidities, including chronic respiratory diseases, and adults ≥ 18 years with high risk conditions. Recently, the Portuguese Directorate-General of Health issued a recommendation for the pneumococcal immunization of adults included in defined at risk/high risk groups for IPD, including COPD. The present work reviews the epidemiology and pathogenesis of IPD and CAP in patients with COPD. In addition, the existing immunization strategies and recommendations among this population are described, with particular focus on the Portuguese setting.

Keywords: *Pneumococcal disease. Chronic obstructive pulmonary disease. Pneumococcal infection. Pneumococcal vaccine. Adults.*

PO 006. PARAPNEUMONIC PLEURAL EFFUSION ON COMMUNITY ACQUIRED PNEUMONIA – CASES OF 2014

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Introduction: Parapneumonic pleural effusion (PPE) is one of the most common complications of community acquired pneumonia (CAP). Diagnostic thoracentesis should be performed whenever possible in order to early identify complicated pleural effusions and allow proper treatment.
Objective: To determine the incidence of PPE in CAP patients assisted on a Pneumology ward, compare characteristics of CAP and CAP plus PPE patients and search for statistically significant differences between the two groups.
Methods: Retrospective study based on the analysis of the clinical files of all inpatients of the Serviço de Pneumologia B do Centro Hospitalar e Universitário de Coimbra, in the year 2014, diagnosed with CAP. We gathered demographic and comorbidities data, clinical variables and performed a comparative analysis between the group with CAP and the group CAP plus PPE.
Results: The sample was comprised of 129 individuals, 57.4% males, aged 70.2 years on average. The incidence of PPE was 16.3%. There were no statistical significant differences regarding socio-demographic, comorbidities, blood gas results, microbiology, antibiotherapy or mortality variables. The commonest comorbidities were elevated blood pressure (57.4%), heart failure (27.3%), diabetes (27.9%), kidney dysfunction (27.7%) and dyslipidaemia (20.9%). Regarding respiratory comorbidities, 31.0% had COPD, 14.0% OSAS, 10.9% asthma, 7.0% bronchiectasis, 5.4% lung cancer, 3.1% interstitial disease and 16.3% were on domiciliary oxygen therapy. At admission, 83.7% presented with respiratory failure. A similar number of patients initiated antibiotherapy with beta-lactamic and macrolide (46.5%) or fluoroquinolone (45.0%). Urinary antigens (*Legionella* e *S. pneumoniae*) were positive to *S. pneumoniae* in 6.2% of the tests. The sputum culture showed multiple microorganisms in 77.6% of the tests, identifying most commonly *MRSA* (8.2%), *H. influenzae* (6.1%) and *S. pneumoniae* (4.1%). Blood cultures were negative in 92.7% of the tests, being positive to *S. pneumoniae* in 3.6%. The initial antibiotherapy was changed in 14.0% of the patients according to in lab sensitivity to antibiotics. Pleural effusion was approached in 38.1% of the patients, being an exudate in 87.5%

and a transudate in 12.5%. Three patients had complicated pleural effusion but none had empyema. Evacuation of pleural fluid was performed in 2 patients but all with pleural effusion went under medical treatment and kinesiotherapy. The hospital stay was, on average, 11.3 days for the CAP group and 14.3 days for the CAP plus PPE group. Overall mortality was 2.3%. Since dependent variables didn´t follow a normal distribution, non-parametric tests were performed. Only the hospital stay had a statistically significant difference between the 2 groups ($p < 0.05$), being longer among the CAP plus PPE group.
Conclusions: The incidence of pleural effusion on the population studied was 16.3%, possibly being underestimated due to the presence of small non identified pleural effusion and the small number of individuals in the sample. The two groups didn't have statistically significant differences on socio-demographic nor clinical variables, excluding only the duration of hospital stay, being longer in patients with pleural effusion.

***Keywords**: Community acquired pneumonia. Parapneumonic pleural effusion.*

PO 007. EIKENELLA CORRODENS – AN UNUSUAL CAUSE OF SEVERE PNEUMONIA IN IMMUNOCOMPETENT PATIENTS

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Introduction: *Eikenella corrodens*, a facultative anaerobic gram-negative bacillus, is commonly found in oral, gastrointestinal and genitourinary flora. It is an uncommon cause of infection and usually associated with comorbidities such as cancer or diabetes, among others. Part of the HACEK group (*Haemophilus, Actinobacillus, Cardiobacterium, Eikenella* and *Kingella*), *Eikenella* may cause endocarditis and mimic respiratory infections caused by anaerobic bacteria, constituting therefore a diagnostic and therapeutic challenge.
Case report: A 26-year-old man with no relevant past history, never smoker, employee of a store, was evaluated at the emergency room for headache, right anterior chest pain, productive cough with purulent sputum and fever with one week. He was receiving treatment with oral cefuroxime for right acute otitis media in the past 10 days. On initial exam he was afebrile, hemodynamically stable, eupneic with oxygen saturation of 98% while breathing ambient air and pulmonary examination showed nothing abnormal. A complete blood count showed leukocytosis with neutrophilia and microcytic anemia. The other laboratory tests showed elevated liver enzymes with a cholestatic pattern, acute kidney injury and elevated C-reactive protein. Pneumococcal and *Legionella* urinary antigen tests were negative. A chest radiography revealed bilateral opacities with nodular morphology and the chest CT scan showed multiple poorly defined nodular opacities with diffuse distribution, some with cavitations, and a bilateral pleural effusion of moderate volume. The patient started empirical treatment with levofloxacin, but a worsening of their clinical condition with sepsis and arterial hypoxaemia, motivated his transference to the Intensive Care Unit for monitoring, without the need of mechanical ventilation. After improvement of the clinical status, he returned to our department. *Eikenella corrodens* was then identified on sputum and blood cultures collected at admission. Concomitant cardiac valvular lesions were excluded through transesophageal echocardiog-raphy, and abdominal ultrasound also performed, showed the presence of a 13 cm splenomegaly. Piperacillin-tazobactam was then added with clinical, analytical and radiological improvement. He was discharged from hospital and was referred to a Pulmonology appointment for follow-up.
Discussion: Despite rare, *Eikenella corrodens*is described as causing indolent or subclinical infection, typically associated with predisposing factors such as immunosuppression, aspiration or structural lung disease and should always be considered in the differential diagnosis of pneumonia with necrotizing character.

***Keywords**: Eikenella corrodens.*

PO 008. LUNG ABSCESS AND DIABETES: A CASE REPORT

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Introduction: The infections are among the leading causes of diabetes mellitus decompensation. Diabetic patients seem to have a greater predisposition to infections, which may lead to metabolic complications, such as diabetic ketoacidosis and coma. The hyperglycemic environment increases the virulence of some pathogens and change the autoimmune system (decrease chemotaxis and phagocytic activity of neutrophils, polymorphonuclears immobilization, anti-oxidant system inhibition, ciliary dysmotility, decrease interleukins and humoral immunity). Lung abscess is defined as necrosis of the lung parenchyma resulting in a cavity containing pus, caused by a microbial infection. Anaerobic bacteria are responsible for most cases. Lung abscess can be classified as primary or secondary, this are due to hematogenous spread and most often are caused by *Enterobacteriaceae* microorganisms. Adherence to the epithelium of the upper airways by gram-negative bacteria is increased in diabetic patients.
Case report: A 63-year- old man, personal history of diabetes mellitus without usual control, was found fallen at home with alteration of state of consciousness. At emergency room he was hypotensive, tachycardic with capillary glucose > 500 mg/dl and without fever. At physical examination he was prostrate (GSC 12), uncooperative, dehydrated, with polypnea and acetone odor of breath. The pulmonary and cardiac auscultation without alterations. The remaining physical examination was normal. At laboratory tests neutrophilic leukocytosis, blood glucose 750 mg/dl, creatinine 2.3, HA1c 14.1%. Blood gas with metabolic acidosis and hyperlactacidemia. Urinalysis with leukocyturia, positive nitrites and ketonuria. Chest radiography without pleural and parenchymal changes. It was assumed a severe diabetic ketoacidosis and a urinary tract infection and started amoxicillin-clavulanic empirically. In the bacteriological examination of urine and blood was isolated a *Enterobacter aerogenes,* and we change antibiotic to ciprofloxacin according to culture and sensitivity results. In control chest radiography were identified multiple cavitary lesions with thickened walls and a slight right pleural effusion. And the pulmonary thoraco-abdominal CT scan was compatible with multiple lung abscesses and a right renal abscess. The echocardiogram revealed only dilated left atrium and a left ventricle apical hypokinesia, with no other changes including vegetations. With these new imaging findings antibiotic therapy was changed to clindamycin and meropenem who were taken for 21 days. Videobronchoscopy had not abnormalities and at the bacteriological, mycological and mycobacteriological examination of bronchoalveolar lavage were not isolated agent, for being under intravenous antibiotic therapy. During hospitalization, the patient realized respiratory exercise and there was a clinical, analytical and imagiological improvement. At discharge the therapeutic was clindamycin and ciprofloxacin per os. To better metabolic control started basal bolus insulin that was changed to a mixture of insulin at discharge. It was referred to the Pneumology and Diabetologia specialist.
Discussion: The poor diabetic control makes the patient susceptible to more serious infections as evidenced this case, in which a urinary tract infection may have been the starting point for the hematogenous spread with pulmonary and renal abscesses. Good

glycemic control contributes to the prevention of infections and to ensure the normal defense mechanism against them.

Keywords: *Lung abscess. Hematogenous spread. Diabetes mellitus.*

PO 009. FOREIGN BODY-INDUCED OBSTRUCTIVE PNEUMONIA IN A HEALTHY ADULT: A FORGOTTEN ENTITY?

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Introduction: Foreign body aspiration can be a life-threatening emergency, but passage of the obstructive object beyond the carina or lesser degrees of obstruction can result in less severe signs and symptoms. Chronic debilitating symptoms with recurrent respiratory infections might occur with delayed extraction, or the patient may even remain asymptomatic. Literature on for-eign body aspiration in adults is limited, especially in healthy individuals. The purpose of this paper is to report a case of a foreign body-induced obstructive pneumonia in a previously healthy patient and alert for the importance of including this entity in the differential diagnosis.
Case report: A 57-year-old male patient had a clinical picture characterized by nonspecific malaise and dry cough with three months. During this period, the patient referred episodic additional symptoms of dyspnea associated with cough with purulent sputum admitted to be due to recurrent respiratory infections and was medicated accordingly with partial resolution of the symptoms. He was admitted to our hospital with a new episode of progressively worsening dyspnea associated with productive cough with purulent sputum and right pleuritic chest pain and was hospitalized for etiologic research. Following the further conducted study, we underline the thoracic computed tomography that revealed a right lower lobe consolidation associated with an image suggestive of foreign body in the right lower lobar bronchus. A flexible bronchoscopy confirmed an irregular foreign body suggestive of a hard bone that was removed by rigid bronchoscopy. A final diagnosis of foreign body-induced obstructive pneumonia was confirmed. The patient showed good recovery after completing a course of amoxicillin//clavulanic acid and azithromycin antibiotics.
Discussion: In adults, many aspirated foreign bodies are unexpectedly discovered, go undetected, or are misdiagnosed, being the true incidence and prevalence of foreign body aspiration unknown. The actual aspiration event can usually be identified, although it is often not immediately appreciated. Additionally, the aspirated object might even escape detection. Bacterial infection is not significant in the early stages of obstruction but is a common feature when obstruction is present for more than one week. Obstructive pneumonia is a potential complication of long-term retention of an aspirated foreign body in immunocompetent adults. Anaerobic bacteria from the upper airways are the most commonly identified pathogens. These patients may respond well to antibiotics, but have recurrent infections in the same pulmonary segment. The most important therapeutic intervention is removal of the foreign body, frequently with rigid bronchoscopy. The complication rate increases as the time to the diagnosis and extraction of the object exceeds 24 hours. Data are lacking regarding the long-term consequences of long-present foreign bodies. We describe the successful diagnosis and treatment of a previously healthy adult patient presenting with recurrent obstructive pneumonia. Clinicians should consider the possibility of non-iatrogenic foreign body-induced pneumonia, when a patient's symptoms cannot be attributed to an alternative obvious cause.

Keywords: *Adult. Foreign body aspiration. Obstructive pneumonia.*

PO 010 SEVERE COMMUNITY-ACQUIRED CAVITARY PNEUMONIA IN AN IMMUNOCOMPETENT PATIENT: A RARE COMPLICATION

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Introduction: A pulmonary cavity is a gas-filled area of the lung in the center of an area of consolidation or a nodule. Cavities are present in an extensive variety of infectious and noninfectious processes. The probability that a given process will cavitate depends on the nature of the underlying pathogenic process and host factors. The prevalence of cavities among per-sons with a given process varies widely. The purpose of this paper is to report a case of cavitary pneumonia and alert for the differential diagnosis of pathological processes associated with lung cavities, focusing on infections associated with lung cavities.
Case report: We report the case of a 79-year-old immunocompetent man that was admitted to our hospital with progressively worsening dyspnea associated with productive cough with purulent sputum with two weeks. He was previously and empirically medicated with levofloxacin without clinical improvement, being hospitalized for etiological investigation. He was found to have a severe sepsis secondary to community-acquired cavitary pneumonia of the left upper lobe with extension to pleural surface, according to radiological imaging studies and complementary investigation. He had a remote history of treated pulmonary tuberculosis (TB) at the age of 48. On the basis of history of TB, reactivation of pulmonary TB was highly suspected. Branching Gram-positive bacilli were not identified on bronchoal-veolar lavage (BAL). BAL Ziehl-Neelsen Acid-fast bacilli stain was negative. Transthoracic needle aspiration revealed a worsened chronic inflammatory process. Appropriate supplemental testing, including blood cultures, microbiology of expectoration, antigen tests, and nucleic acid amplification was negative. The patient was treated with two-drug antimicrobial therapy (ceftriaxone and azitromicin) for 14 days with clinical and analytical favorable evolution. Follow-up imaging studies revealed gradual reduction of the lung lesions.
Discussion: Lung cavities have not typically been associated with community-acquired pneumonia, but occasional cases of cavitary pneumonia due to *Streptococcus pneumoniae* or *Haemophilus influenzae* have been reported. Cavitation is more frequently reported among patients with con-current *S. pneumoniae* pneumonia and bacteremia, which may reflect the greater severity of disease among bacteremic patients. Because *S. pneumoniae* and *H. influenzae* are such common causes of pneumonia, these pathogens may cause a significant fraction of cavitary pneumonias, even though cavitation is relatively rare with these pathogens. The spectrum of infectious and noninfectious processes associated with pulmonary cavities is daunting, but narrowing the differential diagnosis can be facilitated by a careful review of the patient's history and radiographic data. Although given the broad spectrum of pathogens associated with pulmonary cavities, clinical prediction rules are unlikely to be accurate enough in most diagnostic settings to avoid the need for microbiological and/or pathological confirmation, and clinicians should not be afraid to pursue a tissue diagnosis when warranted.

Keywords: *Cavitary pulmonary disease. Cavitary pneumonia.*

PO 011. IMPACT OF INHALED ANTIBIOTIC THERAPY IN REDUCTION OF EXACERBATIONS IN PATIENTS WITH NON CYSTIC FIBROSIS BRONCHIECTASIS AND CHRONIC INFECTION DUE TO *P. AERUGINOSA*

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Introduction: Bronchiectasis (BE) are abnormal and persistent dilation of the bronchi, due to chronic inflammation of the airway. They have different etiologies, and in 50% of cases the cause is unknown. BE patients have a clinic characterized by chronic respiratory symptoms, poor quality of life and recurrent respiratory infections. Exacerbations are events with great impact on prognosis, lung function, quality of life of patients and health expenditures. Chronic infection with *P. aeruginosa* (PA) has been described as a risk factor that increases 4 times the risk of mortality in these patients. Based on the good results of the use of inhaled antibiotics (IA) in patients with cystic fibrosis (CF), this statement has been extended to patients with non CF BE (NCFBE).
Objective: To assess the impact of treatment with inhaled tobramycin in reducingthe number of exacerbations in patients with NCFBE and chronic infection due to PA.
Methods: Patients selection: NCFBE infected chronically with PA, with optimized therapeutic, adhering to respiratory rehabilitation program, with > 2 exacerbations/year and selected for treatment with inhaled tobramycin since August of 2013, according to unit protocol. Characterization of patients: demographic variables, etiology and severity of BE, microbiological isolates of bronchiectasis; number of exacerbations, days of hospital stay and forced expiratory volume in 1st second (FEV_1) 12 months before and 12 months after start the IA. Statistical analysis using Student's t test for paired samples.
Results: Until August of 2015, 8 patients began inhaled tobramycin, of which 7 (87.5%) women with a mean age of 56 ± 12 years old. Severity of BE 16 ± 2 (bronchiectasis severity index). The etiology was: 4 (50.0%) idiopathic, 2 (25.0%) pulmonary tuberculosis sequelae, 1 (12.5%) multifactorial and 1 (12.5%) primary ciliary dyskinesia. Besides PA, in sputum were isolated *H. influenza* (4 [50.0%] patients), *S. maltophilia* (3 [37.5%] patients), *P. fluorescens* (3 [37.5%] patients) and others (8 [100%] patients). A patient suspended the IA due to bronchospasm. Six patients completed 1 year of treatment. The table lists the data of comparative analysis one year before and one year after the start of IA. In 50% of these patients no PA was isolated again. 4 (66.7%) patients did not return to require hospitalization after the onset of IA.

	12 months before IA	12 months after start IA
Nº exacerbations/year (mean ± standard deviation	4.0 ± 2.5	1.5 ± 1.3 (p = 0.01)
Nº of days of hospital stay/ year (days) (mean ± standard deviation)	15.3 ± 21.9	1.7 ± 3.2 (p = 0.16)
FEV1 (mean ± standard deviation)	48.5 ± 20.3	58.1 ± 28.9 (p = 0.11)

Conclusions: This study demonstrates that after 1 year of treatment with inhaled tobramycin, was possible a significant reduction in the number of exacerbations per year. There has also been a reduction in the number of days of hospitalization and improvement in lung function, although without statistical significance. Inhaled tobramycin is an effective and safe drug for the treatment of chronic PA infection in patients with NCFBE.

Keywords: *Non cystic fibrosis bronchiectasis. Inhaled antibiotics. Chronic infection. P. aeruginosa.*

PO 012. ATYPICAL PRESENTATION OF A MYCOPLASMAL PNEUMONIA

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Introduction: The clinical presentation of atypical pneumonia is generally mild respiratory symptoms and a broad spectrum of extrapulmonary manifestations, which vary both in severity and in the affected organs.
Case report: The authors describe the case of a 36 year-old male, smoker (smoking history of 18 pack units) with no exposure to air pollutants. He presented to the Emergency Department of the Hospital Garcia de Orta with 1 week of fever, irritating cough and myalgia. He reported in the last 24 hours bilateral pleuritic chest pain. His past medical history included allergic rhinitis treated with antihistamine (prick tests positive for house dust mites, cat and dog fur). On examination he was febrile (38.5 ºC), blood pressure 105/63 mmHg, heart rate 84 beats per minute and he had no signs of respiratory distress at rest and in room air, SPO2 94%. On pulmonary auscultation he had bilateral rhonchi and coarse crackles and the remaining exam was unremarkable. Laboratory evaluation: arterial blood gases on room air with partial respira-tory failure (pH 7.464, pCO2 40.2 mmHg pO2 57.7 mmHg, HCO3- 28.2 mmol/L Lactate 1.1 mmol/L, SaO2 93.8%), increase in inflammatory parameters leukocytes 6,900, 75.2% neutrophils, C Reactive Protein (CRP) 21.3 mg/dL. The other lab tests were normal (no anaemia, alterations in platelet count or liver and kidney tests). Chest radiograph showed bilateral interstitial infiltrates. He was hospitalized and empirically treated with amoxicillin + clavulanic acid and clarithromycin initially with good response (afebrile and 50% decrease in CRP after 4 days). On 5th day of antibiotic treatment there was clinical and laboratory worsening, with fever, disabling polyarthralgia and joints oedema affecting the elbows, wrists, hands, knees and tibiotarsal, generalized maculopapular non pruritic rash as well as new increase of inflammatory parameters. These findings were compatible with systemic involvement of with *Mycoplasma pneumoniae* infection (which was confirmed by positive serum titers of IgG and IgM). The antibiotic therapy was then altered to doxycycline and NSAIDs and and systemic corticosteroids were started, with clinical and laboratory improvement. He was discharged after 12 days of hospitalization, with no supplementary oxygen since 8th day. He completed 14 days of doxycycline and blood cultures yielded no microbiological agents. It is also noteworthy an increase in transaminases (maximum of 2 times the upper limit) which decreased after suspension of antibiotic therapy and normalized after six weeks.
Discussion: Joint involvement in *Mycoplasma pneumoniae* pneumonia is common, particularly polyarthralgia. However, arthritis is rare and there are sporadic reports in the literature which document the association with infection by *Mycoplasma*.

Keywords: *Mycoplasma pneumoniae. Arthritis. Rash.*

PO 013. POTENTIALLY PREVENTABLE PNEUMOCOCCAL PNEUMONIA WITH THE 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINE IN THE PORTUGUESE POPULATION AGED ≥ 65 YEARS

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The clinical and economic burden of Community-Acquired Pneumonia (CAP) among adults in Europe is considerable. CAP is the leading cause of death due to infection with approximately 90% of deaths due to pneumonia occurring in people aged ≥ 65 years. The incidence of CAP and hospitalizations is rising. This trend is likely to continue over time due to the ageing of the European population, resulting in increased pressure to the healthcare systems. In Portugal, the admissions for CAP between 2000 and 2009 represented 3.7% of the total admissions, with an average annual rate of hospital admissions of 3.61 per 1000 total population, rising to 13.4 per 1000 total population for those aged ≥ 65 years. Moreover, between 2000-2004 and 2005-2009 the average annual rate of hospital admission for CAP per 1000 population increased

by 28.2% and the in-hospital mortality increased to 20.4% from 2000 to 2009. *Streptococcus pneumoniae* is the leading cause of CAP, and is estimated to be responsible by 30%-50% of CAP requiring hospitalization in adults. Currently, there are two licensed vaccines in Europe for the prevention of pneumococcal disease in the adult population: the 23-valent pneumococcal polysaccharide vaccine and the 13-valent conjugate vaccine (PCV13). Recently, the clinical trial CAPiTA (Community-Acquired Pneumonia Immunization Trial in Adults) with 84.496 community-dwelling subjects, to evaluate the efficacy of PCV13 in adults ≥ 65 years of age, showed 45.6% fewer first episodes of vaccine-type (VT) pneumococcal CAP ($p < 0.001$), 45.0% fewer first episodes of confirmed non-invasive VT pneumococcal CAP ($p = 0.007$) and 75.0% fewer first episodes of VT Invasive pneumococcal disease ($p < 0.001$) among PCV13-vaccinated adults ≥ 65 years of age compared to placebo. Considering the annual average rate of hospital admissions of 13.4 per 1000 total population among people aged ≥ 65 years, an European review in which 35% of all cases of pneumonia were pneumococcal, the national data regarding the PCV13 serotype coverage, 67% for IPD and 44% for non-bacteremic lower respiratory tract infections/pneumonia during the same period as the CAP admissions study, and the efficacy data from CAPiTA, we estimated the annualized cases of pneumococcal pneumonia potentially preventable with the 13-valent pneumococcal conjugate vaccine (requiring and not requiring hospitalization) in the Portuguese population ≥ 65 years. Assuming that 50% or 75% of CAP does not require hospitalization, the use of PCV13 may potentially prevent approximately 1 780 or 5 340 cases of outpatient pneumococcal CAP per year, respectively. Conversely, assuming that 20% of pneumococcal pneumonia requiring hospitalization is bacteriemic (invasive), PCV13 may advert about 900 cases of invasive pneumococcal CAP and 1422 cases of non-invasive pneumococcal CAP requiring hospitalization per year. Recently, the Portuguese Directorate-General of Health issued a recommendation for the pneumococcal immunization of adults at risk/high risk of invasive pneumococcal disease. Furthermore, the Portuguese Pulmonology Society recommended the immunization against pneumococcal disease for all adults ≥ 65 years. These recommendations, as well as further epidemiologic surveillance, are important steps toward better outcomes in the prevention of pneumococcal pneumonia, particularly in the older population.

***Keywords**: Community-acquired pneumonia. Non-invasive pneumonia. Pneumococcal vaccine. Adult. Prevention.*

PO 014. BILATERAL NECROTIZING PULMONARY ASPERGILLOSIS

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Introduction: Pulmonary aspergillosis comprises a set of diseases caused by fungi of the Aspergillus class, whose most common species is *A. fumigatus*. Its incidence has apparently increased in recent years, particularly in cases of innate or acquired immunodeficiency and in chronic lung diseases and the poor prognosis and high mortality.

Case report: Male patient, 65 years old, former smoker (CT 80UMA), known ethanol habits and history of COPD, non insulin-treated diabetes and chronic renal failure, that appealed to the emergency department with chest pain of bilateral pleuritic features, cough with purulent sputum, occasional hemoptysis and worsening of dyspnea basal one month of evolution and no improvement with antibiotics and corticosteroids established by his doctor. It was hospitalized with a diagnosis of severe bilateral pneumonia and partial respiratory failure, having started empirical intravenous broad-spectrum antibiotics. Due to clinical and radiological worsening, it was performed a bronchoscopy which revealed abundant hematic secretions, whose microbiological examination identified *Aspergillus fumigatus* and *Aspergillus Niger*, it was not possible to carry out biopsies bronchial. A chest CT scan showed lush cavitated lesions in the upper lobes of both lungs heterogeneous and multiple septa content. Blood cultures, bacteriological and mycobacteriological examination (direct and culture) of sputum and serology for HIV 1 and 2 were negative. Aspergillus IgG was 93.30 mg/L (N < 83.0) and galactomannan antigen (ELISA method) in negative serum. In this context, voriconazole therapy started with clinical improvement, and had indication to maintain the anti-fungal therapy.

Conclusions: Necrotizing pulmonary aspergillosis represents an indolent process of lung destruction, unusual and difficult to diagnose. The history of lung disease and immune dysfunction are recognized risk factors. In our case, we describe a patient with COPD, non-insulin-treated diabetes, known ethanol habits and chronic renal failure, facts which together increase the risk of fungal infection. It required a strong diagnostic suspicion and perform complementary tests indicated in order to timely initiate antifungal therapy, and control of comorbidities, to decrease the morbidity and mortality of this disease.

***Keywords**: Pulmonary aspergillosis. COPD.*

PO 015. NONTUBERCULOUS MYCOBACTERIA (NTM) PULMONARY INFECTION: A CHALLENGE IN THE DIFFERENTIAL DIAGNOSIS AND TREATMENT

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Case report: The authors submit the clinical case of a female patient of 56 years old, born in Guinea Bissau, resident in Portugal for a year, non-smoker, non-user of recreational drugs, with a personal history of type 2 diabetes *mellitus*, systemic arterial hypertension and *status* post amputation of the first three left toes and the first right toe, with no usual medication. In June 2015 she is admitted at emergency room per condition with one month evolution of productive cough with purulent sputum, one episode of hemoptoic sputum, unquantified weight loss, loss of appetite, night sweats and fever. There were no known risk contacts for pulmonary tuberculosis. At the time of observation, there is systemic systolic hypertension, pallor, dehydration and no changes at the pulmonary auscultation. Blood and urine analysis revealed normocytic normochromic anemia, kidney failure, elevated serum C-reactive protein and glycated hemoglobin levels, glycosuria, proteinuria and microalbuminuria. Serology for HIV1 and 2 and HCV were negative and the HBV serology was positive. She performed chest imaging that showed bilateral centrilobular micronodularity, "tree-in-bud" pattern, multiple pulmonary cavitations with air-fluid levels, pre-cavitated pulmonary nodules, endobronchial spread and a consolidation area at the left inferior lobe as well as mediastinal lymphadenopathy. Direct microbiological sputum examination revealed the presence of acid-fast bacilli. Given this result, the patient started antituberculosis treatment with isoniazid, rifampicin, pyrazinamide and ethambutol as well as an oral antidiabetic and anti-hypertensive agent with resolution of fever, glycemic and hypertension control but persisting fatigue and productive cough with purulent sputum. At the 20th day of hospitalization, the cultural sputum examination resulted in the isolation of *Mycobacterium intracellulare* which motivated the change of the antibiotics to rifampicin, ethambutol and clarithromycin. The patient showed clinical and laboratory improvement with the therapy instituted. Infections with non-tuberculous mycobacteria (NTM) more often affect the lungs and usually arise in hosts suffering from some degree of systemic or local of the affected organ immune deficiency. Tuberculosis and non-tuberculous mycobacteriosis have showed an inverse trend

in the incidence of lung disease and there has been a significant increase in NTM infections in areas of low incidence of pulmonary tuberculosis. The differentiation between these two entities is often difficult based on clinical and radiological findings. The smears for acid-fast bacilli are important for rapid detection of potential mycobacterial infections but don't allow the determination of the species involved, which may cause delay in adequate therapy and which is why the authors highlight this clinical case.

***Keywords**: Nontuberculous mycobacteria. Pulmonary infection.*

PO 016. NON-CYSTIC FIBROSIS BRONCHIECTASIS IMPACT IN HOSPITAL ADMISSIONS – A 3 YEAR REVIEW

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Introduction: Bronchiectasis (BQ) is frequently associated with a cycle of infection and inflammation as well as with frequent prolonged hospitalizations with the need of large spectrum antibiotics. The main goal of this study is to evaluate the impact of non-cystic fibrosis (CF) bronchiectasis in a 3 year period in a Central Hospital's Pulmonology Service.
Methods: All patients admitted to Centro Hospitalar de Vila Nova de Gaia/Espinho's Pulmonology Service between 2012 and 2014 were included. The official discharge codification based on ICD9 classification was reviewed. Patients with diagnostic codes 4940 and 4941 (from 1st to 3rd diagnostic codes; no other BQ codes were found in database) were grouped as *Non-CF BQ* (our hospital don't treat CF patients); all other patients were grouped as *Others*. General demographics, mean admission time and mean number of admissions were compared. Central tendency measures, t test and chi-square were used appropriately; significance level was defined to $p < 0.05$. Software used was IBM® SPSS® version 21.
Results: 2,314 admission episodes occurred in the 3 year period. The Non-CF BQ accounted to 227 admissions (120 patients) and the Others with 2,087 admissions (1,523 patients). There was a significant male predominance in both groups (66.9% in Others and 56.7% in Non-CF BQ, $p = 0.02$). The mean age in Non-CF BQ was slightly higher: 66 years (± 15.0) vs 64 years (± 15.9) in Others, $p = 0.07$. The global mean admission time was 12.8 days (± 10.6). The mean admission time in Non-CF BQ was 14.1 days (± 10.9) and was 12.7 days (± 10.5) in Others, $p = 0.05$. The mean number of admissions in this period was 1.89 per patient (± 1.69) in Non-CF BQ and 1.37 per patient (± 0.99) in Others, $p = 0.001$. The global re-admission in this 3 year period was 39.2% in Non-CF BQ vs 21.5% in Others, $p < 0.001$.
Conclusions: Non-CF bronchiectasis has many etiologies and are still a burden to any healthcare system. Despite a significant improvement in the level of care in CF patients, non-CF BQ still need a systematic and dedicated approach. In our sample patients with non-CF BQ are generally male, older than any other respiratory patient and account to a nearly significant higher admission time. They have a significant higher level of readmissions with the microbiological intrinsic risk as well as with an important decline in lung function and survive of these patients as is well known. It is time to implement solid strategies to change the paradigm.

***Keywords**: Bronchiectasis. Admission. Impact.*

PO 017. AN UNUSUAL CAUSE TO PNEUMOTHORAX IN A PATIENT WITH NOONAN SYNDROME

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Introduction: Noonan syndrome is an autosomal dominant disorder, with an incidence between 1:1,000 and 1:2,500 births. The diagnosis of this syndrome is clinical and is characterized by short stature, typical facial dysmorphology and congenital cardiac anomalies. Chest deformities and dysplasia of lymphatic vessels are also described as prevalent in the literature, which determine the formation of spontaneous chylothorax or secondary to cardiothoracic surgery.
Objective: Characterization of pulmonary involvement of patients with Noonan Syndrome followed in Pulmonology and Cardiology Consults on Santa Marta Hospital.
Methods: A retrospective analysis of medical records of patients, including assessment of demographics, radiological and lung function tests.
Results: 20 patients were enrolled with a diagnosis of Noonan syndrome, 55% female and 45% male with an average age of 41.44 years. Of these, 85% had congenital heart disease, 40% chest deformaties (kyphoscoliosis//pectus excavatum and carinatum), and 10% history of chylothorax. Of the eight patients suffering from chest deformities, most developed respiratory clinic that led to performing lung function tests which revealed restrictive ventilatory compromise. It highlights the case of a patient who has severe kyphoscoliosis that determines global respiratory failure requiring nocturnal noninvasive ventilation. For both patients with a history of chylothorax, one case was spontaneous and the other was secondary to surgical correction of the cardiac anomaly.
Conclusions: In this sample, it was found that cardiac malformations are the most common abnormalities. However, a significant percentage of patients also presents a lung disease which can cause pulmonary complications, particularly restrictive syndrome. These findings increase the importance of pulmonology approach in patients with Noonan Syndrome.

***Keywords**: Pulmonary abscess. Pneumothorax. Noonan syndrome.*

PO 018. PULMONARY ACTINOMYCOSIS – "NOT EVERYTHING IS WHAT IT SEEMS"

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Introduction: According to the National Oncologic Registry – 2013, lung cancer is the fourth most common cancer in Portugal and the one that presents a higher mortality rate. It's a disease towards which most clinicians are alert because its quick diagnosis is determinant for its prognosis. Nevertheless, it is important to keep in mind other diseases that can mimic it.
Case report: A 75 years old, Caucasian male is admitted to the emergency department (ER) with complaints of cough with purulent sputum, prostration and malaise. He had a history of pulmonary tuberculosis when he was twenty years old and COPD (ex-smoker since 7 years of 100 pack-years). He was hemodynamically stable and physical examination revealed a diminished left vesicular murmur. He presented with partial respiratory failure (pO2 57 mmHg) and elevation of the inflammatory markers (RCP 27.2 mg/dL). The chest radiogram showed a homogeneous hypotransparency of the left hemitorax and the thoracic-CT revealed a large pneumonic consolidation of the left upper lobe, sparing part of the lingula. He was admitted to the ward and started empiric antibiotic with levofloxacin. Considering the extent of the pneumonia and the history of smoking he underwent a bronchofibroscopy that revealed a whitish looking lesion with an irregular mucosa at the transition between the lingula and the upper left lobe suggesting an infiltrative lesion. The cytological exam of bronchial secretions was negative for malignancy and the bronchial biopsy revealed acute bronchitis, without malignant tissue. The bacteriological exam was negative. A second bronchofibroscopy confirmed the

findings and achieved the same results. The clinical evolution was favorable and the control TC also showed a favorable evolution, although without complete resolution. He was discharged and referred to a pulmonology consult that he failed to attend. Two months later, he is admitted to the ER, with the same complaints and also a weight loss of 7 kg. He had a diminished left vesicular murmur, partial respiratory failure, elevation of the inflammatory markers and a homogeneous hypo-transparency of the upper 2/3s of the left hemitorax on chest radiogram. He was readmitted, started antibiotic with piperacillin/tazobactam plus gentamicin and repeated bronchofibroscopy that showed a bulging of the left main bronchus wall, with a narrowed entry and with a white milky fluid – tumor necrosis or pus. The histological and cytological results were negative and so was the bacterial and mycological exam. The contemporaneous thoracic-CT revealed obliteration of the left superior lobar bronchus and also of the lingular bronchus, with evidence of an area of condensation with mass effect involving the upper lobe. He underwent a rigid bronchoscopy, having been observed a white pearly mass that was biopsied. After the biopsy it was seen a white mobile mass, suggesting an organic foreign body, probably a seed. The bronchial biopsy showed fragments of respiratory mucosa with an active chronic inflammatory process and filamentous structures compatible with Actinomyces.
Discussion: We present this case because it reports a pneumonia caused by a rare agent, with the potential for the formation of encobronchial inflammatory tissue and bronchial obstruction. It's imaging and clinical aspects suggest neoplasm because of its insidious course with cough, sputum production, weight loss and, sometimes, hemoptysis and pleuritic pain.

Keywords: *Actinomycosis. Pneumonia. Cancer.*

PO 019. PULMONARY CRYPTOCOCCOSIS IN AN IMMUNOCOMPETENT PATIENT

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Introduction: Cryptococcosis is an opportunistic fungal infection which occurs mainly in patients infected with human immunodeficiency virus (HIV), with hematologic cancer, systemic corticosteroid therapy or other immunosuppressive therapy. It is rare in immunocompetent patients, being usually limited to the lung. In these cases the most common symptoms are fever, cough and dyspnea. The most common radiological findings are solitary or multiple nodules.
Case report: We report the case of a 48 year old African man from Cape Verde, residing in Portugal since 1993, construction worker and non smoker, with previous moderate ethanol habits, in abstinence for 2 years and with a prior diagnosis of viral hepatitis B under antiviral therapy. He was sent to the Pneumology clinic presenting a 1-year history of productive cough with difficult to eliminate mucous sputum, without relief or worsening factors, with no temporal predominance, accompanied by sporadic unquantified fever. He denied chest pain, dyspnea, anorexia or weight loss. On examination he presented inspiratory and basal expiratory rales on the right hemithorax. Laboratory tests showed blood count with mild neutropenia and unchanged renal function, electrolytes, liver enzymology and CRP. HIV serology was negative. Thoraco-abdominal-pelvic CT showed a solid cavitating nodule in the right lower lobe, with irregular borders, contrast enhancing, with 3.2 cm maximum diameter, with contact to the costal pleura and mediastinum. Three bacteriology, mycobacteriology and mycology cultures from the sputum were negative. Bronchoscopy showed no morphology changes, bronchoalveolar lavage and bronchial brushings were negative for neoplastic cells, and mycobacteriology examination of the bronchoalveolar lavage was also negative. The chest CT was repeated after 3 months showing a slight increase in size of the nodule (38 × 20 mm) with slight air bronchogram therein. An antibiotic cycle with amoxicillin/clavulanic acid was administered and the patient was proposed to Thoracic Surgery for wedge resection of the right lower lobe lesion. The pathology revealed patchy lymphohistiocytic inflammatory process related to probable Cryptococcus spores. The search for cryptococ-cal antigen was positive with blood titration 2. The mycology blood culture was inconclusive not allowing species identification. Central nervous system dissemination was excluded by brain CT and cryptococcal antigen research was negative in CSF. Currently, he is undergoing treatment with 400 mg fluconazole (id) having fulfilled 4 month therapy with an antigen titration which decreased to 1/2.
Discussion: The clinical and imaging manifestations of limited lung cryptococcosis are nonspecific which makes diagnosis difficult. The authors present this case because, although rare in immunocompetent patients, cryptococcosis should be part of the differential diagnosis of pulmonary nodules.

Keywords: *Cryptococcus. Immunocompetent. Pulmonary nodules.*

PO 020. MASKED LUNG ABSCESS: REGARDING A CASE

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Introduction: Hemoptysis is a common and nonspecific symptom that can match a manifestation of severe lung disease. The differential diagnosis is extensive and includes inflammatory or infectious processes and neoplasia.
Case report: Male, 85 years, retired, non-smoking, with personal history of sinusitis, hypertension and prostate adenocarcinoma without daily medication. Observed in the ER for one month of evolution of hemoptysis sputum and, more recently, small volume hemoptysis. Cough and sputum with usual volume, recently more purulent. Weight loss (4 kg) over the past two months. No dyspnea, anorexia, nocturnal excessive sweating and/or fever. Physical examination highlighting good general condition, afebrile, eupneic in ambient air, SpO2 95%. Pulmonar auscultation with bilateral little snoring. Analytically with anemia (Hb 10.6 g/dL) normocytic normochromic, PCR 5. Chest radiograph showed oval opacity, imprecise limits, just-right heart and ipsilateral desviation of mediastinal column. He was admitted for further study and started antibiotic therapy with beta-lactam and macrolide with little relevant clinical improvement. TC-Thoracic showed complete atelectasis of ML, with ipsilateral mediastinal shift; image of hilar-right spiculated mass, poorly defined, which captured contrast heterogeneously, involving the MLB (the latter with concentric thickening and endoluminal occupation) with 31 × 37 mm and adenopathy with infiltrating criteria (14 and 13 mm). Adbominal Ultrasound unchanged. CT-HEAD: Asymmetry of the pituitary, by greater height right. No expansive lesions. Videofibroscopy showed RBTD with large clot obstructing BL4 - biopsy performed in the spur in MLB (inconclusive). Repeated videofibroscopy which revealed, in RBT, white lesion obstructing about 90% of the MLB, subjected to biopsy (inconclusive). PET-CT showed hypermetabolic right pulmonary mass, with suspected metastatic lymph node. Respiratory function test revelead obstructive pattern of the small airways and positive bronchodilation. No mycobacteriological isolation in the aspirate, sputum and blood cultures. By keeping diagnostic uncertainty, proposed surgical excision whose pathological result revealed findings consistent with bronchopneumonia with lung abscess and organizing pneumonia.
Discussion: The realization of clinical history and diagnostic tests isn't always sufficient in the etiologic clarification, so that the surgical excision can occur as a last resort in these cases.

Keywords: *Hemoptysis. Abscess. Neoplasia. Infection.*

PO 021. OSTEOPOROSIS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE: PRELIMINARY RESULTS OF COHORT STUDY

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Introduction: In chronic obstructive pulmonary disease (COPD), one of extrapulmonary manifestations that increases morbidity and mortality, is osteoporosis. The prevalence of osteoporosis in this population can reach 42%, and contributes to worsening respiratory dynamics, increased duration of hospital stay and health care costs.
Objective and methods: We recruited 36 patients with COPD in order to assess the prevalence of osteoporosis (T score in the spine or femoral neck < -2.5), and identify demographic and clinical factors that relate to decreased bone mineral density. The variables analyzed included age and gender; body mass index; smoking status; severity of dyspnea (mMRC scale); GOLD stage; Charlson comorbidity score; chronic therapy with an emphasis on inhaled corticosteroids; pulmonary function parameters (forced expiratory volume in 1 second-FEV1, forced vital capacity-FVC, slow vital capacity-SVC, residual volume-VR, total lung capacity-TLC and diffusion capacity for carbon monoxide-DLCO); emphysema extension in thoracic CT scan; number of exacerbations in the last year; cumulative dose of systemic corticosteroids in the last year expressed in mg of hydrocortisone; bone mineral density assessed with osteodensitometry (T score, Z score and bone density in g/cm^2); plasma calcium, phosphorus and 25-hydroxy-vitamin D levels; and previous history of bone fractures. The population was divided in the following subgroups: individuals with osteoporosis, individuals with osteopenia and individuals with normal bone mineral density. Patients with osteoporosis were compared with the remaining population in terms of the demographic and clinical variables mentioned above.
Results: In the study population (N = 36, mean age 67.4 ± 7.2 years; 94.4% male gender, 44.4% with COPD GOLD C or D), the prevalence of osteoporosis was 33.3%; a history of previous bone fractures was not identified in any individual. Patients with osteoporosis (vertebral and/or femoral) had an annual cumulative dose of systemic corticosteroids (3,720 ± 1,437 mg vs 1,731 ± 827 mg; p = 0,006) and annual rate of exacerbations (2,3 ± 1 vs 1,3 ± 0,7; p = 0,04) significantly higher than the rest of the population. Patients with vertebral osteoporosis were older (69 ± 6 vs 63 ± 5; p = 0,006) scores and presented a significantly higher Charlson score (5 ± 2 vs 3 ± 2; p = 0,007); TLC (98 ± 5 vs 114 ± 18; p = 0,04) was significantly lower. Patients with osteoporosis at the femoral neck had significantly higher annual cumulative dose of systemic corticosteroids (7,194 ± 4,815 mg vs 1,519 ± 687 mg; p = 0,005), higher annual rate of exacerbations (4 ± 3 vs 1 ± 0,7; p = 0,03) and a worst severity of dyspnea (mMRC 3 ± 1 vs 2 ± 1); TLC (100 ± 4 vs 115 ± 13; p = 0,005) was significantly higher. In multivariate analysis, we only identified independent predictors of osteoporosis at the femoral neck namely cumulative annual dose systemic corticosteroids (r^2 = 0.11; Exp (B) 2.1; p = 0.04) and annual rate of exacerbations (r^2 = 0.13 Exp (B) 1,6; p = 0,003).
Conclusions: One third of the study population had osteoporosis. Patients with osteoporosis had prior exposure to higher cumulative dose of systemic corticosteroids and higher annual rate of exacerbations. These findings reinforce the importance of screening and diagnosing this comorbidity in patients with COPD, especially if they are frequent exacerbators or exposed to higher cumulative doses of systemic corticosteroids.

Keywords: *Chronic obstructive lung disease. Osteoporosis.*

PO 022. IMPACT OF A COMMUNITY-BASED PULMONARY REHABILITATION PROGRAMME

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Chronic Obstructive Pulmonary Disease (COPD) affects 210 million people worldwide and 800,000 in Portugal, being one of the main causes of long-term disability. Pulmonary rehabilitation (PR) has been acknowledged as a fundamental component of care in patients with COPD[3]. However, in Portugal, this intervention is mainly implemented within the hospital context and directed to the more advance grades of the disease, being only available to less than 1% of patients that could benefit of such care. Hence, the implementation of PR programmes within the community and in mild-to-moderate grades of COPD has been recommended however, its effects are still poorly understood. This study aimed to assess the impact of a community-based PR programme. A quasi-experimental one-group pretest-posttest design was conducted with patients with COPD recruited from Agrupamento dos Centros de Saúde do Baixo Vouga and Centro Hospitalar do Baixo Vouga. The PR programme was implemented for 12 weeks and included two components: i) respiratory physiotherapy, twice a week during 60 minutes and ii) education and psychosocial support, every other week during 60 minutes. A comprehensive evaluation was performed to all patients initially and immediately after the PR programme, i.e., socio-demographic, anthropometric and general clinical information were collected with a structured questionnaire based on the International Classification of Functioning, Disability and Health, dyspnoea was assessed with the modified Medical Research Council questionnaire; lung function with spirometry, quadriceps muscle strength with one-repetition-maximum testing, exercise tolerance with the 6-minute walk test and health-related quality of life with the Saint George's Respiratory Questionnaire. Descriptive and inferential statistics were performed with IBM SPSS Statistics version 20.0 (IBM Corporation, Armonk, NY, USA). A total of 94 patients with COPD (68 ± 14.6 years old; 69 male, forced expiratory volume in one second (FEV_1) 70.9 ± 23.6% predicted) participated in the PR programme. Significant improvements were observed for dyspnoea (median [IQR] pre 1 [1, 2], post 1 [0.5,2]; p < 0.001), quadriceps muscle strength (pre 37.2 ± 9.1 Kg, post 47.4 ± 12.4 kg; p < 0.001), exercise tolerance (pre 444.2 ± 98.1 m, post 486.5 ± 112.8 m; p < 0.001) and health-related quality of life (pre 36.9 ± 18.4, post 30.5 ± 18.2; p < 0.001). Although internationally recommended, community-based PR programmes are scarce. The results obtained in this study in terms of patients' improvement were similar to those obtained in programmes conducted within the hospital context. Thus, it seems crucial to encourage the development of PR in the community and to all grades of the disease, to enhance the self-management of this chronic condition.

Keywords: *COPD. Pulmonary rehabilitation. Community-based.*

PO 023. COPD LEAN PROJECT - A QUALITY IMPROVEMENT EXPERIENCE IN THE DIAGNOSIS OF PATIENTS WITH COPD

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Introduction: Chronic Obstructive Pulmonary Disease (COPD) is a major cause of morbidity and mortality in Portugal, resulting in decreased quality of life and high costs to the NHS. It is characterized by the irreversible flow limitation of the airways and the diagnosis should be worked out in patients with progressive dyspnea and longtime cough, especially if they have increased

risk (occupational/environmental) and should be confirmed by spirometry. In anticipating that is underdiagnosed, it is estimated that in Portugal 14.3% of adults over 40 years suffer from COPD, the prevalence increases with age and tobacco consumption. The quality improvement Lean methodology consists in the multidisciplinary organization of the team to achieve priority goals, each member assuming its role in established flowchart. It seeks to improve the delivery of services by promoting their efficiency and effectiveness. This paper aims to describe the experience of a Family Health Unit (USF) in improving the diagnosis and monitoring of patients with COPD by integrating Lean methodology.
Methods: An observational, descriptive and longitudinal study. Data were collected on the number of: performed spirometry; patients diagnosed with COPD in problem list; patients diagnosed with chronic bronchitis; patients with COPD and FEV1 recorded in individual records in the last three years and smokers over 40 years and spirometry, using the MIMUF® program and the medical record of patients via SClínico®. They compared the data from 2014 before the intervention according to the Lean project, with the 2015 data.
Results: Lean Project began in November 2014 with a multidisciplinary meeting (clinical secretaries, nurses and doctors) in USF Nuno Grande about COPD - epidemiological data, diagnosis and management. Then the professionals, according to priorities, established improvement objectives and developed a flow chart of operation having each element a clear role in this improvement process. During the first six months of the project were held weekly meetings to adjust procedures and set new goals. There was an increase in the number of spirometry performed (total of 336), increasing by 200% over the same period of the previous year. Of the 1415 patients with tobacco abuse coding were summoned those over 40 years to perform spirometry as planned in the standard of DGS. The number of patients with effective diagnosis of COPD increased, with 63.16% of FEV1 recorded in individual form.
Conclusions: Structured and organized teamwork becomes essential in optimizing the care. With this project in the area of COPD USF Nuno Grande could improve their practice, effectively and directed to the established goals. In this first phase of the project objectives have been met, considering the recommendations of the DGS, being the standardization of procedures the key process. Thus improved diagnosis of the disease allowed better therapeutic intervention. The next step will focus on the creation of appropriate follow-up protocols, in particular for improving inhalation technique, check the vaccination status and control of the disease's state.

Keywords: *Quality improvement. COPD. Spirometry.*

PO 024. COPD OR RARE DISEASE?

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Introduction: Pompe disease is an autosomal recessive inherited disorder caused by accumulation of glycogen in the lysosome due to deficiency of the lysosomal acid alfa-glucosidase enzyme. The buildup of glycogen in the body´s cells leads to tecidular dysfunction, particularly on cardiac, respiratory and skeletal muscles. The treatment is based on enzyme replacement therapy using recombinant acid alfa-glucosidase. Despite clinical improvement, lung function improvement is extremely difficult.
Objective: To report a case of Pompe disease and to discuss the diagnostic strategy.
Case report: Male, 64 years old, Caucasian, ex-smoker (40 PYS) has pathological history of chronic obstructive pulmonary disease (COPD) of unknown aetiology and long standing clinical features of respiratory insufficiency associated to respiratory sleep pathology with no clear diagnosis. Current hospitalization on intensive care unit due to severe pneumonia needing permanent ventilatory support. On physical examination he showed paradoxical breathing pattern, gait changes and total need of ventilatory support on decubitus position. Tests results found creatine phosphokinase = 366 UI/L, respiratory function tests were suggestive of severe restrictive syndrome and thoracic ultrasound confirmed diaphragmatic commitment. Nocturnal oximetry showed significant desaturation periods. Therefore it was put up the hypothesis of neuromuscular disorder. Thinking on diaphragmatic paresis it was realized a dried blood spot (DBS) which detected acid alfa-glucosidase enzyme low activity favoring the diagnosis of Pompe disease. This deficit was also confirmed by total absence of enzymatic activity on blood leukocytes and by the conclusive genetic study. This way it was established enzyme replacement therapy.
Discussion: As Pompe disease is a rare disorder very often doctors miss much time between the beginning of symptoms and diagnosis. Enzyme replacement therapy revealed effectiveness and the ability to change the natural course of the disease. The lack of knowledge about Pompe disease and a confounding factor delayed the diagnosis and the beginning of treatment in this case, and which affected permanently the patient´s lung function.

Keywords: *Severe restrictive syndrome. Diaphragmatic paresis. Acid alfa-glucosidase. Pompe disease.*

PO 025.ALFA1-ANTITRYPSIN DEFICIENCY TREATMENT: COMPLIANCE OR CONVICTION?

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Alfa1-antitrypsin (A1AT) deficiency is a genetic disease that increases the risk of chronic obstructive pulmonary disease (COPD), liver disease, and other conditions. Besides COPD treatment, some patients should be given augmentation treatment with A1AT. Benefits in slowing the emphysema progression have been described. Some physicians believe that the cost of the treatment and the controversial clinical benefit are factors against its recommendation. A1AT augmentation treatment is used in selected patients, intravenously, weekly and in a day hospital regimen, 60 mg/Kg/week. One of the selection criteria for the treatment initiation is the patient acceptance of weekly visits to the hospital. Given the special conditions and economic burden associated with this treatment, one of the main concerns is adequate patients' compliance. The aim of this study was describe patients' compliance to augmentation treatment in patients with A1AT deficiency. The authors reviewed all patients in a central hospital who are or have received augmentation treatment since its beginning until July 2015. The study population (n = 11) is characterized predominantly by male (81.8%), median age at diagnosis 52 years, mostly former smokers (63.3%), COPD being the most frequent reason for seeking medical opinion (n = 8), with liver disease (72.7%) and FEV1, GOLD 2 (27.3%), GOLD 3 (27.3%) and GOLD 4 (45.5%). The median serum A1AT level before treatment was 24.8 mg/dl (highest 34 mg/dl). It was calculated the total number of doses that each patient should receive (T) and the ones he actually did receive (R). The compliance rate was achieved through the formula: (R/T) × 100. Compliance rates above 90% were observed in the study population, with 91% of patients (n = 10) with rates above 95% (median compliance rate 98.27%). It was noted that the lowest the serum A1AT was before treatment, the higher the compliance rate (p = 0.059). The treatment time of follow-up was between 28 and 348 weeks. The median serum A1AT after treatment (6 months) was 65.45 mg/dl. Three patients suspended treatment (1 patient went through lung transplantation; 2 patients died). One of the challenges in the treatment of chronic disease is

patient compliance, some authors describing compliance rates of 50%. This study showed excellent patient compliance, in spite of the special characteristics of augmentation treatment (it can only be given intravenously, with weekly visits to the hospital and long term). The high compliance was observed evenly through the time of follow-up. Although there's controversy about its clinical benefit and the economic burden, the excellent results observed in this study strength the need of more randomized studies to achieve a higher level of evidence, so that augmentation therapy can be more easily prescribed.

Keywords: *Alfa1-antitrypsin. Augmentation treatment. Compliance.*

PO 026. EVOLUTION OF PATIENTS WITH ALFA1-ANTITRYPSIN DEFICIENCY AFTER AUGMENTATION TREATMENT

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Introduction: The alfa1-antitrypsin deficiency (AATD) is the genetic disease most frequently diagnosed in the adult population, which confers a higher risk of chronic obstructive pulmonary disease (COPD), liver disease, amongst others. Some authors described the beneficial effect with alfa1-antitrypsin (A1AT) augmentation treatment in slowing progression of pulmonary emphysema.
Objective: Clinical and functional evolution of patients with AATD, during augmentation treatment.
Methods: Retrospective analysis of patients with severe AATD with regular follow up in the Pneumology outpatient department who were or currently are under augmentation treatment; clinical records were reviewed for clinical (exacerbations) and functional (FEV1, 6 minute walk test – 6MWT) evaluation, before beginning and during the first two years of treatment.
Results: Since 2008, 11 patients were or are under augmentation treatment, 9 male, median age 52 years and median A1AT serum value 24.8 mg/dl. Two patients died, 1 was successfully transplanted and the others continue treatment and follow-up. The median initial FEV1 was 1.11 L (IQ: 0.94), DLCO/VA 67.0% (IQ: 60.8) and the median distance in the 6MWT was 475 meters (IQ: 218.75). When comparing the median FEV1 before treatment and at 6, 12 and 24 months of treatment, a decline of 0.04 L, 0.11 L and 0.06 L respectively, were noted, without statistical significance ($p = 0.204$, $p = 0.075$ e $p = 0.344$). No significant differences were found between the median FEV1 at 12 and 24 months of treatment ($p = 0.686$). Twelve months after the beginning of treatment a small increase in median DLCO/VA was verified (1.7%), without statistical significance ($p = 0.500$). Regarding the 6MWT distances, a decline of 25.0 and 17.5 meters were noted between the initial 6MWT and the 12 months and between the initial 6MWT and the 24 months, without statistical significance ($p = 0.068$ and $p = 0.109$, respectively). During the first 2 years follow-up, the median of exacerbations were 1 per patient, only one needing inpatient regimen treatment. It is noteworthy that 45.5% (n = 5) of patients didn´t had any clinical exacerbation since the beginning of treatment. No correlation was found between exacerbations and the following variables: initial 6MWT and after 24 months ($p = 0.115$ and $p = 0.147$), initial FEV1 ($p = 0.361$), after 6 ($p = 0.297$), 12 ($p = 0.077$) and 24 months ($p = 0.770$) of treatment.
Conclusions: The authors reported that these patients with severe AATD, after beginning the augmentation treatment, presented a clinical and functional stability during the first 2 years of treatment. This data and the existing scientific evidence support the maintenance of the aforementioned treatment.

Keywords: *Alfa1-antitrypsin deficiency. Augmentation treatment.*

PO 027. THE ROLE OF COMMUNITY PHARMACISTS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) EARLY DIAGNOSIS AND PATIENTS' EDUCATION: AWARENESS CAMPAIGN AND SPIROMETRY TESTS.

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Introduction: COPD is a leading cause of chronic morbidity and mortality worldwide. In Portugal, the estimated prevalence of COPD in individuals with 45 or more years of age is 14.2%, wherein it is estimated that a significant number of patients remains undiagnosed. Furthermore, many patients are not well controlled due to a relatively high prevalence of an incorrect inhalation technique.
Objective: To describe and assess the capability of a group of community pharmacies in organizing awareness campaigns on COPD and its contribution to the early diagnosis and patient follow-up.
Methods: To address the symptoms and select individuals to perform spirometry tests, pharmacists applied the "Could it be COPD?" questionnaire, developed by GOLD (*The Global Initiative for Chronic Obstrutive Lung Disease*). If the patient answered positively to more than 3 questions, he was advised to schedule a spirometry. If the results suggested that the patient had spirometric changes, he was then referred to the physician. For patients who were already diagnosed and taking medicines through inhaler devices, pharmacists provided practical explanations to improve the inhalation technique.
Results: In November and December 2013, 953 spirometry tests were performed in 82 pharmacies. 52% (n = 496) of the participants were female, with a mean age of 59 years old and 248 were active smokers. 19.1% (n = 182) were referred to the physician due to spirometric changes. In November and December 2014, 1211 spirometry tests were performed in 119 pharmacies. 50.3% (n = 616) of individuals were female, with a mean age of 60.6 years old and 455 were active smokers. 36.8% (n = 450) were referred to the physician due to spirometric changes: 42.7% (n = 192) suggestive of obstructive ventilatory changes; 22.9% (n = 103) suggestive of restrictive ventilatory changes; 21.6% (n = 97) suggestive of mixed ventilatory changes. 1,167 patients were enrolled in a medication management service, whereby practical information about inhalation techniques was provided.
Conclusions: Pharmacists can play a key role in raising public awareness to the risk factors of the disease and the importance of its early diagnosis. They can also provide information on the correct use of inhaler devices, contributing to the effectiveness and safety of therapy.

Keywords: *COPD. Early diagnosis. Spirometry. Patients' education. Pharmacist.*

PO 028. M_{MALTON} MUTATION: TWO CASE REPORTS OF A RARE ALPHA1-ANTITRYPSIN (A1AT) DEFICIENCY IN MADEIRA ISLAND

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The A1AT deficiency is a known risk factor for the premature development of chronic obstructive pulmonary disease. It is estimated a prevalence of 5% among individuals affected by this pathology, but this deficit is still underdiagnosed in many cases. There is a proven link between the type of mutation of the gene SERPINA1, the serum value of A1AT and the severity of the clinical picture. Among the most frequent mutations (S and Z), the presence of homozygosity PI * ZZ is the one that is associated with greater severity and worse prognosis. There are however rare

mutations in patients who have very low serum levels of A1AT and can mimic severe clinical phenotypes, sometimes also with hepatic involvement. Genetic characterization is difficult because there are routinely used only probes directed to the S and Z alleles. Furthermore, many of the molecules have electrophoretic mobility similar to other proteins containing variant alleles M (normal) or S. In cases where any discrepancy among the data of laboratory characterization exists, it may be necessary to resort to sequencing the SERPINA 1 gene. The authors describe two cases of a rare mutation in two unrelated women, born and resident in Madeira island, both 59 years old, one with laboratory finding (routine proteinogram) of A1AT deficiency, and other with Common Variable Immunodeficiency history and long term respiratory complaints. Serum dosing A1AT, by immunonephelometry assay, were very low - 16.8 and 25.3 mg/dL. Genetic testing was performed, and it only concluded that the patients did not have any of the usual two mutations. Progress was then for genetic sequencing, being detected in both the Mmalton (c.227_229delTTC) homozygous mutation, which corresponds to the abnormal A1AT protein by deletion of phenylalanine at position 52 of the normal M2 variant. The patients are currently being followed up by Pulmonology. In both, despite their age, and contrary to the literature, there is no evidence of relevant liver involvement. One has no significant respiratory complaints and Respiratory Function Tests are within normal parameters.

Keywords: *Mmalton. Alpha1-antitrypsin.*

PO 029. WORLD COPD DAY AN OPPORTUNITY TO UNVEIL THE DISEASE

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Introduction: To promote World's COPD day is an opportunity to unveil to the public one of the main causes of mortality and morbidity worldwide. The event was disclosed in local media.
Objective: To carry out a spirometry screening and to evaluate COPD level of knowledge, co-morbidities and daily activity in a Portuguese region, Aveiro.
Methods: An invitation to daycare center older adults was made to perform spirometry, to fulfill a small health inquiry and to assist to a multimedia COPD presentation encouraging to lead an active life. We invited all daycare centers with public mail address (n = 39) in Aveiro region, to participate with up to 5 older adults, and received 19 (48.7%) daycare centers inscriptions. The respiratory functional evaluation was done with three outsourcing equipments that later sent the written results. Spirometries without absolute values or quality curbs were excluded from the analysis. We used Global Lung Initiative (GLI) Lower Limit of Normal (LLN) reference equations to analyse obtained data.
Results: We welcomed 91 persons (60 women and 31 men) with a mean age of 80.2 ± 8.01 (61-96), and a median BMI of 27.4 ± 4.8 (15.7-44.2). Only 9 had ever done a spirometry. We found a median FVC – 1.81 ± 0.68 L (0.74-3.77), a median FEV1 – 1.45 ± 0.52 L (0.56-2.93) and median Tiffenau Index - 81.1 ± 11.5 (47-99). We analysed 54 exams and found 70.4% (n = 38) within mormal range, 20.4% (n = 11) restrictive, 5.5% (n = 3) mixed and 3.7% (n = 2) obstructive pattern. Former (n = 9) or actual smoking habits (n = 4) were present in 13 men (14.3%). Previous dust or chemical respiratory occupational exposure was mentioned by 40 persons (43.9%). Chronic Bronquitis (CB) was referred by 7 and COPD by 3 persons. Some level of dyspnea (mMRC), was present in 33 persons, 20 of them with some form of cardiac disease, 7 with bronchopulmonary and 6 of them with both diseases. About 20.2% persons walks on a regular basis and 47.1% do oriented physical activity, but 69.7% admitted to be sitting around 60 to 70% of their time. Flu vaccine is commonly used by 65.9% persons (n = 60), only 7.7% (n = 7) had ever done pulmonary rehabilitation, and about 25.3% knew what COPD stands for (n = 23).
Conclusions: The rate of Chronic Bronchitis symptoms is close to the rate of people who knew what COPD meant for (25.8%). Oriented physical activity seems to be a better way to fight sedentarism than just simple walking advices. We only found 3.7% (n = 2) of obstructive disease pattern using GLI-LLN.

Keywords: *Spirometry. Smoking. DPOC. Environmental exposure. Screening. Elder people.*

PO 030. DOCTORS SMOKING HABITS COMPARISON BETWEEN MEDICAL VERSUS SURGICAL SPECIALTIES OF A CENTRAL HOSPITAL

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Tobacco is a major cause of preventable disease, disability and death worldwide. The attitude of healthcare professionals towards smoking is a crucial part of any long-term prevention and cessation programmes. Smokers health care providers are generally less sensitized to promote smoking cessation measures in their patients. The aim of the study was to compare the doctors smoking habits of medical versus surgical specialties of a Central Hospital in 2014. A survey of voluntary and anonymous response was distributed to a total of 434 physicians and was achieved a total of 180 responses. The questions were related to smoking habits, attitudes towards smoking, legislation knowledge and importance given to support to smokers consultation. A total of 19 medical specialties (total surveys: 61.8%, n = 131) and 8 surgical specialties (total surveys: 38.2%, n = 49) were analyzed. The response rate was higher in medical specialties 48.9% vs 29.5%. There was a pre-dominance of responses from women (58%) in medical group and men in surgical (59.2%) with a mean age balanced in both groups. The percentage of non-smokers was similar in both groups, medical Vs surgical (80.2% vs 81.6%). In medical specialties percentage of smokers was higher (16.8% vs 6.1%). The percentage of occasional smokers was slightly higher in surgical specialty 2.0% vs 0.8%. Regard to ex-smokers there was a higher percentage in surgical specialties (10.2% vs 3.8%). The beginning age of smoking habits was slightly lower in medical specialties (19.8 years vs 20.3 years). Regard the reasons for initiating 48.8% of medical group refer social habits as the major cause (parties, friends) while stress at work was identified as the first reason in surgical specialties (39.6%). Cigarette form was the preferred modality in both groups, followed by hand-rolling tobacco. All physicians reported knowing the Portuguese legislation regarding the smoking prohibition. The percentage of physicians who performed attempts to quit smoking was higher in medical group vs surgical group (56% vs 50%) and also went more frequently to specialist consultations (22% vs 9%). All doctors considered important Smoking Cessation Specialized Consultation in the Hospital but only 25% of doctors in medical specialties and 19% of surgical specialties indicated their willingness to attend to a cessation program. The average number of cigarettes smoker per day was higher in surgical specialties (17.8 vs 13.6). The level of nicotine dependence (Fagerström Test) had a higher average sum in medical specialties (4.6 vs 3.2). Medical specialties group had more smokers with higher degree of dependence but also greater adherence to smoking cessation programs. Interestingly there was a higher rate of ex-smokers in surgical specialties. Knowing the smoking habits of health professionals is important because motivated doctors, give more value to the importance of smoking cessation among patients.

Keywords: *Smoking habits. Medical doctors.*

PO 031. BRIEF INTERVENTION ON SMOKING CESSATION: BARRIERS AND FACTORS ASSOCIATED – A CROSS-SECTIONAL STUDY

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Introduction: Smoking cessation is among the most cost-effective medical interventions. Physicians should systematically intervene, identifying smokers, and offering cessation advice and support (brief intervention on smoking cessation).
Objective: To assess self-reported barriers and factors associated with Portuguese physicians' brief intervention on smoking cessation.
Methods: In 2009, a conference-based cross-sectional study targeting GPs and hospital-based physicians was carried out. Self-administered questionnaires were delivered and collected during two main national medical conferences. Systematic sampling and consecutive sampling were performed. Descriptive and inferential analysis using chi-square, McNemar and Mann-Whitney tests, and multiple logistic regression (MLR) were performed.
Results: Response rate was 64%. Of the 549 participants, 61.9% were female and 64.3% were GPs; mean age was 40.5 ± 12.6 years (24-70). Physicians reported the following frequencies: 1) ask about smoking (83.5%; 95%CI: 80.4-86.6); 2) Advise to quit (85.6%; 95%CI: 82.7-88.5); 3) motivate to quit (67.2%; 95%CI: 63.3-71.1); 4) refer to a cessation programme (38.3%; 95%CI: 34.2-42.4), $p < 0.001$. Brief intervention combined steps frequency was 30.5%, $p < 0.001$. MLR showed that factors associated with consistent brief intervention were the following: reporting clinical practice in a cessation programme (aOR = 3.41; 95%CI: 1.58-7.34, p = 0.002); reporting graduate training in smoking prevention/treatment (aOR = 1.71; 95%CI: 1.15-2.53, p = 0.008); being a female (aOR = 1.98; 95%CI: 1.31-3.0 p = 0.001) and being older than 45 (aOR = 1.71; 95%CI: 1.16-2.53, p = 0.007). The most important barrier to cessation care identified by physicians was intervening in non-motivated smokers (51.7%), followed by time constraints (28.1%), poor cessation training (27.6%) and poor rate on smoking cessation efficacy (17.1%), $p < 0.001$.
Conclusions: The findings suggest that effective smoking cessation brief intervention is poorly implemented in healthcare. This underscores the need for evidence-based and comprehensive cessation training programs and effective systems-approach in order to promote smoking cessation implementation. Smoking cessation training programs should include motivational interview and practice in a cessation programme.

Keywords: *Smoking cessation. Brief intervention. Physicians. Barriers.*

PO 032. TRAINING IN PREVENTION AND TREATMENT OF SMOKING FOR HEALTHCARE WORKERS: NEEDS AND OPPORTUNITIES

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Introduction and objective: Despite growing interest in smoking cessation as a fundamental tool to control the tobacco epidemic, there is no comprehensive training model on smoking prevention and treatment for health-care workers in Portugal. Online training methods are an innovative and easily accessible tool. The Pneumology School of the Portuguese Society of Pulmonology has led the first e-learning course on this subject, which took place between January and May 2015. The authors looked at the trainees' opinions about educational needs on smoking and about the available training methods.
Methods: online questionnaire application using the SurveyMonkey® platform, sent via e-mail to all trainees registered to the e-Learning Course "Brake Smoking". The questionnaire was available from June 5th to July 22nd, 2015.
Results: 290 trainees answered the questionnaire (41.2% of the studied population). Most responders were physicians (74.1%), followed by nurses (10.7%) pharmacists (5.1%) and other healthcare workers (4.5%), from all regions of the country; 66.2% were between 26 and 35 years-old and 63.5% had a Master's degree. Only 39.5% had had previous specific training on smoking and, of these, only 11.5% had been enrolled in a course with evaluation. Almost half of the responders worked in smoking cessation (48.8%) but, of these, 42.3% stated they had no specific training. Only 10.3% considered the available educational offer in Portugal to be sufficient; 56.9% considered the available options inadequate. As to the e-learning model, 93.5% considered it to be as much or more important than conventional training. Amongst the various modalities, the combination of online course with conventional lectures was the preferred (68.1%). Practical training was considered very important by 83.5% of subjects, preferably conjugating various forms (73.5%). The great majority was willing to pay for training (38% until 50 euros, 27.6% until 100 euros and 12.2% until 200 euros).
Conclusions: The results point out that there is a great lack of specific training in smoking prevention and treatment, aimed at healthcare workers, not just physicians; there seems to exist a great interest in acquiring more and better training. The e-Learning model was valued and may constitute a more accessible and broader solution to this problem. Training should be expanded to all interested healthcare workers, not just physicians.

Keywords: *Smoking. Training. Healthcare Workers.*

PO 033. E-LEARNING TRAINING MODEL ON SMOKING: RESULTS OF A SATISFACTION QUESTIONNAIRE

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Introduction and objective: The Working Committee on Smoking of the Portuguese Society of Pulmonology (SPP) has led the first post-graduate Course of the Pulmonology School using an e-learning model, between January and May 2015. Aware of the lack of specific training in smoking cessation in healthcare workers, and given the travelling difficulties and costs associated to a conventional course, the Committee decided to test a different and more comprehensive approach. The Course had a basic, exclusively online version, consisting of educational videos and slide presentations, and a specialized version, which also included a practical workshop and written evaluation. The authors intended to collect the trainees' opinions on this educational experience.
Methods: Online questionnaire application using the SurveyMonkey® platform, sent via e-mail to the 703 trainees registered to the e-Learning Course "Brake Smoking". The questionnaire was available from June 5th to July 22nd, 2015 and consisted of multiple choice questions, Likert scales and open questions.
Results: Of the 703 registered trainees, 571 started the course (81.2%) and 262 of these answered the questionnaire (45.9%). Most responders were between 26 and 35 years-old and 76.3% were female. Physicians were 73.7% of the sample. Most responders had known about the Course through co-workers (45%), e-mail advertising (23.3%), at the SPP website (21%) or other websites (5%). Participant expectations were met (59.5%) or overcome (30.1%) by the course. Average score using a 1-to-5 Likert scale concerning educational needs adequacy was 3.93 points; faculty adequacy obtained 4.15; course website functionality had 4.24;

quality of presentations had 4.11; sufficiency of information had 3.97. The majority of trainees (71.4%) had no difficulties acceding the online platform; the most commonly mentioned problem was functionality of videos (8.9%). Concerning professional usefulness of knowledge, the obtained score was 4.10. The general evaluation of the course was 4.09.
Conclusions: An e-learning based course seems to be a very positive model to improve the level of knowledge about smoking amongst healthcare workers, easily accessible and with a high satisfaction level. Improving contents and platform functionality can further increase the quality of this type of tool.

Keywords: *Training. Smoking. e-Learning.*

PO 034. SMOKING RISK AND TOBACCO-ASSOCIATED DISEASE DEVELOPMENT - PRELIMINARY STUDY

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Introduction: The epidemiological investigation process requires the definition of the studied disease, quantitative measures of exposure and the use of a method that associates these variables. For characterizing populations at higher risk, epidemiology should operate two strategies: get evidence of exposure in the population and identify individuals with increased susceptibility when exposed, by inherited or acquired facts. Evidence of tobacco effect on the development of pathology comes from epidemiological studies, in which the evaluation of tobacco exposure is based on the information provided by patients themselves. Cotinine, major metabolite of nicotine, which determination is a useful marker of actual smoking habits, allows the determination of different aspects, including absorption, distribution and individual differences in nicotine metabolism.
Objective: To assess the relationship between the development of tobacco-related disease and cotinine, smoking history and the product of these two variables.
Methods: Retrospective study based on the clinical process review of patients that attended Intensive Approach – Smoking Cessation Visit for 3 years. Smokers without urinary cotinine determination were excluded. Two groups were created: Group I, without tobacco-related disease; Group II, with tobacco-related disease (IIa - pulmonary disease; IIb - other diseases). Cumulative consumption biomarker – Smoking History (pack-year). Current consumption biomarker- Urinary Cotinine (mg/dL). The Smoking Risk was defined as the product between Cotinine and Smoking History.
Results: 125 patients were included: 68% males, mean age 47.02 years. 61.6% included in group I and 38.4% in group II, mean age of 41.93 and 53.94 respectively ($p < 0.05$). There were no significant difference between the onset age of smoking habits. In group I the mean cotinine was 2,594.76 vs 2,688.15 in group II ($p > 0.05$). In the IIa subgroup average cotinine was 3,178.38 vs 2,363.22 in IIb sub-group ($p > 0.05$). The Smoking History in group I was 25.23 vs 44.92 in II group ($p < 0.05$). In IIa subgroup Smoking History was 56.10 vs 36.22 in IIb subgroup ($p < 0.05$). The Smoking Risk was 61,448 in Group I vs 119,766 in group II ($p < 0.05$). There were no significant differences in Smoking Risk between subgroups. The Smoking History showed high correlation with the development of tobacco-related disease, and very high correlation with pulmonar disease development. The Cotinine showed low correlation with the development of tocacco-related disease, and moderate correlation in subgroup comparative study. The Smoking Risk showed high correlation with the development of pulmonary disease and moderate correlation with the development of other tobacco-related diseases.
Conclusions: Our sample reflects a population of smokers with high Smoking History, without significant difference in the onset age of smoking habits, which despite having a high prevalence of disease, maintains high current consumption. The Smoking Risk showed a strong association with the development of pulmonary disease and moderate association with the development of other tobacco-related diseases.

Keywords: *Smoking risk. Cotinine. Smoking History. Tobacco-associated disease.*

PO 035. PARTICULARITIES OF SMOKING CESSATION IN LIGHT SMOKERS

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Introduction: The establishment of nicotine dependence is a multifactorial and dynamic process. Genes involved in nicotine metabolism are plausible candidates for stud-ies of smoking behavior. Polymorphisms involved in nicotine metabolism (CYP2A6) determine the rate of each smoker. Recent studies indicate that a significant portion of the genome determines the smoking phenotype.
Objective: To understand the characteristics of the "light smokers" profile who attended the smoking cessation appointment - intensive approach.
Methods: Retrospective, descriptive, protocol based study evaluating the profile of smokers who attended the smoking cessation appointment – intensive approach. Case definition - Consumption of 1-5 cigarettes a day.
Results: From 200 smokers who attended the appointment in the considered period (2013-2014), 15% (n = 29) were included in the study. Average age: 45 years, 54% women, 34% graduates and 10% unemployed. 83% not working in shifts. Most of them have heard of the smoking cessation appointment through their general practitioner (69%). Personal decision was the main motivation for attending it. Fagerström test: 3.26. 41% reported smoking the first cigarette 31-60 minutes after waking up; 90% have no difficulty smoking at restricted areas; 63% smoked even when sick. 44.8% smoked earlier in the day, 10% stated that the first cigarette of the day is was the most difficult to quit. No. cigarettes/day: 4.55. Age of beginning: 19.7 years. Smoke any tobacco brand 52.1%. 62% do not usually live with smokers. Main reasons for smoking: to combat stress, social interaction and pleasure. Assay carbon monoxide in exhaled air ≥ 20 ppm (60.2%). Urinary Cotinine average: 922 ng/ml Richmond Scale: 7.8. Reasons for cessation: health (55%), economic (17%), family requests (13.8%). Fears: absent (17.6%), weight gain (31%) and anxiety (27%). 69.6% have tried to quit smoking, not identifying the relapse reason.
Conclusions: The smoking disease can be graded by various methods with direct clinical implications for therapeutic success. A simplified classification of this sample (light smokers) by the number of cigarettes consumed is not appropriate for severity of disease. As universally used to assess nicotine dependence, Fagerström test has limitations, which are related to the great appreciation of the physical symptoms, neglecting psychological/motivational aspects, thereby underestimating the disease in "light smokers". Even the smoker understands that the use of nicotine has already become a problem that affects his life. Measurement of biomarkers is an easy tool to use, allowing better stratification of smoking disease and the potential risk of developing tobacco-related disease. Understanding these smokers requires a definition of phenotypic patterns that has not yet been achieved with unanimity, making it difficult to compare results.

Keywords: *Light smokers. Smoking cessation. Phenotypes.*

PO 036. NEW REFERENCE EQUATIONS (GLI 2012) ON SPIROMETRY INTERPRETATION IN CHILDREN AND ADOLESCENTS

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Introduction: Spirometry combines diagnosis, classification of severity and prognosis of chronic respiratory disease. The use of the new, all-age (3-95 years), multiethnic reference equations published by the Global Lung Function Initiative in 2012 (GLI) is recommended for spirometry interpretation by the major respiratory international societies, reducing key-point deviations, especially in the transition into adult care medicine.
Objective: This study intends to determine the impact of switching to these GLI equations in a paediatric lung function laboratory on interpretation and classification of spirometry results.
Methods: Analysis of 1,444 spirometry records/children [(60% boys, 9%black, average age 11.05 ± 3.36 years] performed in 2013; main diagnosis: asthma, cystic fibrosis, other chronic obstructive pulmonary diseases and neuromuscular diseases. Z-scores and %predicted for FEV_1, FVC and FEV_1/FVC were calculated using Zapletal and GLI equations and compared. Abnormally low FEV_1 and FVC were defined if < LLN, airway obstruction if FEV_1/FVC < LLN and a "restrictive pattern" in spirometry if FEV_1/FVC ≥ LLN + FVC < LLN. The severity of obstruction was classified based on %predicted FEV_1 (ATS/ERS). The calculations were performed using Excel and a specific software provided by the GLI (www.lungfunction.org/) and the statistics analysis (t and χ^2-tests) using SPSS v.22.
Results: The *z-score* values for $FEV_1$and FVC were significantly lower with the GLI *vs* Zapletal equations: -0.28 ± 1.36 *vs* 0.05 ± 0.94 and -0.06 ± 1.29 *vs* 0.01 ± 0.98 respectively. The rates for abnormally low values were higherwith the GLI *vs* Zapletal equations: FEV_1 < LLN 13.5% *vs* 4.7%, FVC < LLN 8.9% *vs* 4.6% and FEV_1/FVC < LLN 14.2% *vs* 5.0%, as well as both the rates for airway obstruction 12.1% *vs* 4.1% and restrictive pattern 6.8% *vs* 3.7%. All differences were statistically significant (p < 0.001). In the classification for severity, 58 patients change degree of severity with the GLI equations [50 (86%) worsen], however, the difference was not significant. When we restricted the analysis to white children aged > 6 years (n = 1,208), the population validated in the Zapletal equations, the differences remained.
Conclusions: As suggested in the literature, the introduction of the GLI equations has a significant impact on spirometry interpretation in paediatric care, increasing the results below the lower limit of normal for gender, age and height. The clinical effect, on patient management and treatment, will have to be assessed.

***Keywords**: Spirometry. Reference equations. Spirometry interpretation. Paediatrics.*

PO 037. RESPIRATORY FUNCTION OF PATIENTS WITH CYSTIC FIBROSIS AT REST AND DURING EXERCISE

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Introduction: Early recognition of clinical deterioration is paramount in cystic fibrosis (CF), the evaluation of lung function is a useful and sensitive tool to identify it.
Objective: Assess respiratory function and its determinants in adult patients with CF at rest and during exercise.
Methods: We performed a retrospective study of patients followed in our Adult CF Unit (n = 48) in the time between 2007-2012. Respiratory function was evaluated by plethysmography and six-minute walk test (6MWT). The results were correlated with the following variables: gender, BMI, pancreatic function, diabetes related to cystic fibrosis (CFRD), number of hospitalizations and bronchial infection by *Pseudomonas aeruginosa* (PSAE), *Staphylococcus aureus, Burkholderia cepacia* and fungi. Patients with lung transplant were excluded. The statistically significant level considered was p < 0.05.
Results: We selected 37 patients, 51.4% were female, mean age 30 ± 2.7 years and the mean BMI: 20.1 ± 4.7 kg/m². 32.4% of patients were homozygous for F508. In the matter of chronic bronchial infection PSAE was identified in 62.2% of patients, *S. aureus* in 70.3%, *B. cepacia* in 13.5% and fungi in 48.6%. Exocrine pancreatic insufficiency was identified in 66.7% of patients and CFRD at 10.8%. In the analyzed period, the patients presented an average decline in predicted FEV1, proven by the average of the lines of linear regression coefficients value of-1.24. We found correlation between FEV1 values, BMI (p < 0.01) and CFRD (p < 0,05). The decline in FEV1 was more pronounced in patients with pancreatic insufficiency and patients with chronic bronchial infection by fungi. The 6MWT was performed in 62% of patients studied, the average distance traveled was of 504.5 ± 66,3m (66% predicted). An association between desaturation and low levels of FEV1 (p < 0.01), elevated RV (p < 0.05) and the number of hospitalizations per year (p < 0.05).
Conclusions: In the studied population there was a decline in the average predicted FEV1, more pronounced in patients with pancreatic insufficiency and chronic bronchial infection by fungi. Nutritional status and CFRD were factors associated with a greater compromise of respiratory function. The 6MWT showed a correlation between desaturation and functional respiratory impairment at rest as objectified by bronchial obstruction, by hyperinflation and the number of hospitalizations due to exacerbation.

***Keywords**: Cystic fibrosis. Exercise. Lung function.*

PO 038. DLCO AS LUNG DISEASE INDICATOR IN PATIENTS WITH NORMAL RESPIRATORY FUNCTION TESTS

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Introduction: Diffusion capacity of carbon monoxide (DLCO) is a simple and safe test to assess the gas transfer capacity across the alveolar-capillary membrane, having importance in the investigation of patients in such diverse contexts as obstructive and restrictive diseases, interstitial diseases and detection of pulmonary vascular disease.
Objective: To analyze the utility of DLCO as an indicator of lung disease in patients with normal respiratory function tests (RFT).
Methods: We reviewed the RFT performed at Garcia de Orta Hospital in 2014, select-ing patients with normal RFT and reduced DLCO (< 75%), whose clinical processes were reviewed for assessing changes in computed tomography (CT) and/or ventilation-perfusion scintigraphy, blood gases, emergency depart-ment visits, hospital admissions and mortality rates for 1 year of follow-up.
Results: A total of 2032 RFT were performed, where 931 had normal functional study (45.8%), and of which 72 patients (7.7%) had decreased DLCO. The sample was characterized by a mean age of 61.9 years (28-88), 76.4% women. Twenty point eight per cent were smokers (mean 31 pack-year), 23.6% ex-smokers and 55.5% non-smokers. Thirteen point nine per cent of patients had occupational or recreational exposure to respiratory toxic sub-stances. From the 56 patients who underwent thoracic computed tomography (CT), 13 had interstitial fibrotic changes (23.2%), 9 had emphysema (16.1%), 5 had fibrotic changes and emphysema concomitantly (8.9%), 10 had bronchiectasis (17.8%) and 6 patients had pulmonary embolism (PE), corresponding to 10.7%. Of the 20 ventilation/perfusion scintigraphy performed, 17 were diagnostic of PE (4 of them with PE documented in CT), being a useful test for this

diagnosis, especially in obese patients. Arterial blood gas analysis was performed on 45 patients, existing type I respiratory failure in 15.5% of cases, and type II in 6.6%. Eight patients (11.1%) visited the emergency department during the 12 months of follow-up, and 4 of them were hospitalized for acute exacerbation of respiratory disease. The mortality rate in 1 year was 6.9% (5 patients) of which the death of 3 of them were not due to respiratory causes.
Conclusions: DLCO can be decreased in a variety of lung diseases. A decreased DLCO may indicate underlying lung disease in patients with normal RFT, and additional diagnostic tests such as imaging and/or blood gases may be indicated. It may be particularly useful to perform ventilation/perfusion scintigraphy in obese patients with reduced DLCO and normal RFT. The visits to the emergency department because of acute exacerbations of the respiratory disease suggest that reduced DLCO could behave as a risk factor. Based on the results obtained, it may be questioned if DLCO can have some role as a gravity follow-up parameter in patients with normal RFT, after the diagnosis of lung disease.

Keywords: *Diffusion capacity. Respiratory function tests. Lung disease.*

PO 039. CHANGES IN LUNG FUNCTION AFTER CHEST SURGERY

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Introduction: The evaluation of the pulmonary functional capacity pre-operatively is important in identifying candidates with risk of postoperative respiratory complications and can help in operability decision. However, lung function after surgical resection may be affected by several factors.
Objective: To evaluate changes in lung function after chest surgery, in patients with solitary nodules or lung cancer.
Methods: Retrospective study of all patients diagnosed with operable lung cancer and solitary nodules followed in Pulmonology Department between 1 January 2011 and 31 December 2014. We included all patients with pulmonary function test (PFT) up to one year after surgery and excluded those who did not have PFT after the surgery.
Results: We included 43 patients. The data for these patients were (table). Comparing all the functional variables FVC, FEV1 total, FEV1/FVC and DLCO before and after thoracic surgery there was a decrease in their mean values after surgery ($p = 0.010$, $p = 0.001$, $p = 0.011$ and $p = 0.037$ respectively). For total FVC and FVC% there was a sharper drop in their values in patients undergoing total pneumonectomy ($p = 0.004$ and $p = 0.047$). There was however an increase in FVC% values in patients undergoing VATS and wedge resection ($p = 0.005$ and $p = 0.034$). Of the total FEV1 there was an increase in their mean values in patients undergoing wedge resection ($p = 0.017$), but a more marked decrease in patients undergoing total pneumonectomy ($p = 0.04$). There was a significantly statistical association between tumor type, stage, location of the injury, COPD and CVD and pre and postoperative functional variations.
Conclusions: The postoperative pulmonary function varied according to the type of surgery. The values of total FVC, FVC% and FEV1 overall decreased more markedly in patients undergoing total pneumonectomy. However, there was an improvement of pulmonary function with increasing FVC% and FEV1 values in patients undergoing wedge resection and increasing FVC% in patients undergoing VATS. The surgical procedure adopted can help us predict changes in pulmonary function after thoracic surgery.

Middle age	62 ± 9 years
Gender	67,4% male (n = 29)
More frequent reason for surgery:	
Adenocarcinoma	44,2% (n = 19)
Solitary nodules	25,6% (n = 11)
Carcinoid tumor	14% (n = 6)
Squamous cell carcinoma	11,6% (n = 5)
Staging (cancer patients):	
Ia	43,7% (n = 14)
IIIa	18,7% (n = 6)
Ib	15,6% (n = 5)
IIa	12,5% (n = 4)
Most frequent location:	
Right upper lobe	34,9% (n = 15)
Left upper lobe	25,6% (n = 11)
Neoadjuvant chemotherapy	20,9% (n = 9)
Adjuvant radiotherapy	4,7 (n = 2)
Open surgery	83,7% (n = 36)
Video-assisted thoracoscopic surgery (VATS)	16,3% (n = 7)
Comorbidities:	
Chronic obstructive pulmonary disease (COPD)	30,3% (n = 13)
Cardiovascular disease (CVD)	4,7% (n = 2)
Smoking habits:	
Smoking	37,2%
Ex-smokers	32,6%
Non-smoking	30,2%

Keywords: *Pulmonary function test. Lung cancer. Solitary nodules. Chest surgery.*

PO 040. INTERSTITIAL PNEUMONIA WITH AUTOIMMUNE FEATURES – DIAGNOSTIC CHALLENGE

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Introduction: The initial evaluation of patients with interstitial lung diseases involves an active search for an etiology. When pulmonary involvement is a condition that allows the diagnosis of a connective tissue disease, all the classic criteria are filled and there is little diagnostic discussion. However, there is some disagreement about the meaning, relevance, specificity and the pathophysiological role of autoimmunity in patients who primarily have pulmonary involvement and only some slight evidence of connective tissue disease.
Case report: Thirty-six year old female, non-smoker, referenced to our pulmonology department in 2009 after surgical lung biopsy in the context of diagnostic investigation of asthenia, anorexia and mild arthralgias starting in 2007. He had a negative immunological study; DLCO slight defect; LBA with neutrophilic and eosinophilic alveolitis; CT chest with ground glass pat-tern and septal thickening; surgical lung biopsy compatible with hypersensitivity pneumonitis (without complete exclusion of an interstitial pneumonia with autoimmune features). At the time of our observation, the patient was under oral corticosteroid therapy since 2008 and had dyspnea and xerostomy, but no arthralgias. Our work-up revealed worsening of lung function, RF slightly positive and radiological stability. Despite the exclusion of environmental exposure and underlying connective tissue disease and even after review of the case by

two different ILD-specialized centers, it was decided to accept the diagnosis of hypersensitivity pneumonia in chronic phase, treated with mycophenolate mofetil and costicosteroids. In 2015, an episode of joint morning stiffness and edema started on her hands and heels, combined with RF, ANA and pANCA positive MPO. She was observed by a Rheumatology specialist that considered it compatible with rheumatoid arthritis. Against this new evidence, the initial diagnosis was reviewed and accepted as rheumatoid arthritis with pulmonary involvement. Treatment with cyclosporine was started and the patient was referred for lung transplant.
Discussion: The present case report illustrates the difficulty in diagnosis of cases of pulmonary involvement by *frustes* forms of connective tissue disease. The clinical suspicion and the notion that the diagnosis of this type of patient is a dynamic process are critical for proper medical advice and treatment.

Keywords: *Interstitial pneumonia with autoimmune features. Interstitial lung disease.*

PO 041. SIROLIMUS AN EFFECTIVE THERAPY FOR CHYLOTHORAX IN LYMPHANGIOLEIOMYOMATOSIS – A CASE REPORT

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Introduction: Lymphangioleiomyomatosis (LAM) is a rare multisystem disorder which occurs sporadically or in association with tuberous sclerosis complex. Affects primarily women of child-bearing age, is characterized by proliferation of abnormal smooth muscle-like LAM cells, leading to the formation of lung cysts, fluid-filled cystic structures in the axial lymphatics (eg, chylous pleural effusions lymphangioleiomyomas), and renal angiomyolipomas. Clinical studies with sirolimus (rapamycin), an mTOR inhibitor, have shown beneficial effects on renal angiomyolipomas, stabilization of lung function and on the management of chylothorax.
Case report: We present the case of a 64 year-old nonsmoker woman that worked as a house keeper. She had a medical history of dyslipidemia and a pneumothorax 20 years before. The patient was referred to our ILD outpatient clinics in 2010 for dyspnea with progressive worsening and occasional wheezing for the last 5 years and a thoracic CT scan with multiple cysts. A diagnose of a probable LAM was established in 2010 according to the European Respiratory Society diagnostic criteria. The patient remained clinical and functionally stable until November 2012, when she develop a right-sided recurrent chylothorax, nonresponsive to a fat-free diet. She presented clinical worsening and was admitted to the hospital for a chest tube insertion and started fat-free total parenteral nutrition. She had a high chylous drainage output from the chest tube when oral alimentation was introduced. A medical thoracoscopy was performed with slurry talc pleurodesis. The patient experience clinical improvement with a small stable chylothorax, and was discharge from the hospital on a fat-free diet. Afterwards, she presented a relapsing difficult to manage chylothorax, with repeated thoracocentesis needed and started sirolimus in May 2013. The patient didn't experience and immediate response to the treatment, only after 6 months on the drug a clinical improvement was evident and a significant regression of the chylothorax was noted. She has been treated with sirolimus for 26 months, with no evidence of side effects and continuous to demonstrate clinical stability and presents a small stable chylothorax. Functionally she presented an improvement on lung volumes. Forced expiratory volume in 1 s (FEV1) before sirolimus was of 0.96 L (42.4% predicted) and now is 1.5 L (67.1% predicted). Diffusion capacity for carbon monoxide (DLCO) showed an improvement as well (before sirolimus: 25.6% and after sirolimus: 58.5%).
Discussion: Our case confirms that sirolimus can be highly effective in the treatment of symptomatic chylotorax in LAM, according to the previous studies, that demonstrated that sirolimus was especially effective in the extrapulmonary lymphatic manifestations of LAM, such as chylous effusions. This drug proved to be effective in improving lung function, reducing the size of chylous effusion, and showed an improvement in some measures of performance and quality of life in this patient. The durable effect of this therapy and its positive impact on patients quality of life are noteworthy. Currently, it is not known whether treatment must be continued for life or whether resistance to sirolimus eventually develops.

Keywords: *Sirolimus. Lymphangioleiomyomatosis.*

PO 042. CHRONIC EOSINOPHILIC PNEUMONIA – CASE REPORT

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Introduction: Chronic Eosinophilic Pneumonia (CEP) is a rare disease of unknown etiology characterized by alveolar and interstitial eosinophilic infiltration. It is most common in the fourth and fifth decades, with women outnumbering men. This disease has a subacute course, with patients manifesting progressive respiratory (cough, expectoration, dyspnea and wheezing) and systemic (fever, nights sweats, asthenia and weight loss) symptoms within few weeks. The mean interval between disease onset and diagnosis is about 4 months. Regarding to imagiological findings, this disease is characterized by ill-defined peripheral alveolar opacities, with a ranging den-sity from ground-glass to air bronchogram, while about 25% patients have migratory infiltrates.
Case report: A 47 year old woman, Caucasian, non-smoker. Frequently, she travels to Cape Verde and Angola due to her professional activity (teacher). Her medical history includes Asthma and Chronic Rhinosinusitis and is medicated with bronchodilator and inhaled corticosteroids. She was admitted for persistent fever (maximum of 38 ºC), with evening predominance, exacerbated dyspnea and dry cough, for about 1 week. Additionally, she had asthenia, weight loss (5 kg) and anorexia for about 3-4 months. Her allergic history was unknown. She denied consumption of any other medications. Her physical examination and laboratory findings were unremarkable. Her chest X-ray showed an "opacity in the middle region of the right hemi-thorax". Her chest CT scan demonstrated a "ground-glass opacity with air bronchogram adjacent to pleura in the right lung". She was not evaluated by any Pulmonologist and was discharged medicated with prednisolone 20 mg id for 5 days. Although there was clinical improvement during the treatment, symptoms recurred after that period, motivating her to come again to the hospital where she was evaluated by a Pulmonologist. Her physical exam-ination was unremarkeable once again. However, analytically we found the following values: Hemoglobin of 10.7 g/dL, leukocytosis of 22,700/µL, with neutrophilia and peripheral eosinophilia (8,700 eosinophiles), sedimentation rate 109 mm in the first hour and CRP 147 mg/dL. Imagiologically, we could observe worsened findings, with bilateral peripheral opacities in the middle region. CT scan demonstrated "parenchymal opacities with ground-glass density and air bronchogram, especially in the left upper lobe." There was no respiratory insufficiency assessed by Arterial Gasometry. Finally, bronchoalveolar lavage showed eosinophilic alveolitis (total cell number of 250/mm, 32% lymphocytes (with normal CD4/CD8 ratio), 29% eosinophils), while microbiologic (bacteria, virus, fungi and parasites) and malignant cells assessment were negative. Once diagnosis was established, this patient was medicated with prednisolone 40 mg id, resulting not only in clinical, but also analytical and imagiological improvement.

Discussion: Based on this clinical case we conclude that many aspects have to be considered in CEP diagnosis, as it requires a high level of suspicion. Furthermore, we emphasize corticotherapy relevance in CEP treatment, highlighting its clinical, functional and imagiological efficacy.

Keywords: *Chronic eosinophilic pneumonia. Corticotherapy.*

PO 043. EXTRINSIC ALLERGIC ALVEOLITIS WITH AN ATYPICAL IMMUNE EXPRESSION, A CLINICAL CASE

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Case report: The authors describe a case of a 62-year-old woman, Cape Verdean, resident in Portugal, who works as a cleaner in a chemical industry (polymers, fiberglass, polyurethane, resins) for 15 years, no smoking, no other epidemiological relevant contexts, with a history of hypertension, dyslipidemia and depressive syndrome. In 2000, insidious development of dyspnea during efforts, wheezing, coughing and eye, nasal and oropharyngeal rash, a few months after beginning of the occupation, with regression on periods of avoidance. On this context she was initially treated with salmeterol/fluticasone propionate, without symptomatic relief. Progression of the simptomathology described above, with worsening of dyspnoea, left anterior toracalgia, cough, asthenia and weight loss quantified in 8 kg, without fever. The chest CT revealed bilateral diffuse interstitial fibrosis with apical pre-dominance and areas of fibrotic densification mostly at the apical segment of upper left lobe, fibrotic streaks and multifocal thickening of the pleura. Respiratory function tests (RFT) showed a severe restrictive syndrome and type II respiratory insufficiency in arterial blood gas analysis. Laboratorial study showed an elevation of erythrocyte sedimentation rate (ESR) (34 mm/h), total IgE in the upper normal limit (124 U/mL, to reference values from 0-120 U/mL), normal angiotensin-converting enzyme (32 IU/L, for values of 8-52 reference UI/L) and negative immunological study, as antinuclear anti-bodies, ANCA and rheumatoid factor. Bronchofibroscopy showed no endoscopic changes and bacteriological, direct mycobacteriological and cultures of bronchoalveolar lavage (BAL) and bronchial aspirates were negative. The BAL cytometry showed lymphocytic alveolitis lymphocytosis of 43% and high CD4/CD8 ratio of 6. Lung biopsy was performed by VATS for diagnostic confirmation, with evidence of small non-necrotizing interstitial granulomas, multinucleate giant cells with cholesterol crystals and linfoplasmocitary infiltrate with remodeling areas compatible with the diagnosis of EAA in chronic phase/fibrotic.
Discussion: The EAA is a granulomatous disease with exclusive pulmonar involvement, relatively rare, constituting 2% of cases of interstitial lung disease. It is immunologically mediated and resultant from repeated inhalation of organic animal or vegetable, or chemical molecular weight antigens. There is great variability in susceptibility to disease in individuals exposed. The clinical features and severity of symptoms varies from acute, subacute or chronic, according the frequency and intensity of exposure. The lack of specificity of clinical manifestations makes EAA a heterogeneous entity, being probably underdiagnosed. The EAA most typical immune expression is the predominance of CD8 cells, with few cases reported where this relationship is normal or increased, as noted on this case. The atypical forms constitute a diagnostic challenge and anatomo-pathological features have further importance, as evidenced by the authors. Corticotherapy is the main treatment and the avoidance of the exposure is mandatory and interferes with the prognosis.

Keywords: *Extrinsic allergic alveolitis. Atypical immune expression. Anatomo-pathological. Corticotherapy.*

PO 044. BREAST CANCER AND PULMONARY SARCOIDOSIS – A RARE, BUT POSSIBLE, COHABITATION

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Introduction: Standard endocrine therapy and chemotherapy can induce long-term remission in breast cancer patients; however, breast cancer can recur at any site. The diagnosis of pulmonary nodules documented during follow-up of breast cancer is a real challenge in clinical practice given its high percentage of distant metastasis. The differential diagnosis of nodular lesions identified in this context is particularly important because the possibility of the diagnosis of other lung diseases, particularly of benign etiology.
Case reports: The authors present two cases of breast cancer patients, that developed a pulmonary radiological pattern compatible with lung metastases, but the diagnostic investigation showed a pulmonary sarcoidosis. The first case report is about a 49 year old woman, diagnosed with invasive ductal carcinoma of the breast in 2008 treated with chemotherapy and radiotherapy. During follow-up, two years after diagnosis she developed a nodular pattern in lung parenchyma and mediastinal lymphadenopathy. She was diagnosed with a pulmonary sarcoidosis. The second case report is about an 80 year old, woman, diagnosed with invasive ductal carcinoma of the breast in 2006 treated with surgery, followed by radiotherapy, and currently undergoing hormonal therapy. Nine years after diagnosis develops mediastinal, hilar and infracarinal lymphadenopathy with accentuation of the lung tissue. In the same time appeared a small lesion in the lower, whose result of excisional biopsy showed the presence of sarcoid granulomas. The investigation of these changes was also consistent with the diagnosis of pulmonary sarcoidosis. Our case highlights the need for non-malignant diagnoses in those with prior malignancies, and the need for histological evaluations in the event of first recurrence following potentially curative therapy. There was no relationship between the presence of sarcoidosis and the incidence of breast cancer, indicating that sarcoidosis may precede, accompany, or follow the diagnosis of breast cancer. Although pulmonary sarcoidosis in breast cancer patients is a rare phenomenon, clinicians could encounter many similar benign conditions, that have to consider during the differential diagnosis of pulmonary nodules in this context.

Keywords: *Breast cancer. Pulmonary sarcoidosis. Pulmonary nodules.*

PO 045. PULMONARY LANGERHANS CELL HISTIOCYTOSIS AND SARCOIDOSIS: TWO RARE DISEASES IN THE SAME PATIENT?

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Introduction: Pulmonary Langerhans cell histiocytosis is an uncommon disease that primarily affects young adults and appears to be associated with cigarette smoking. Some patients have also bone and central nervous system involvement. Sarcoidosis is a granulomatous disease of unknown etiology that also typically affects young adult. In the literature, there is not any case reporting the association of both.
Case report: Female 31 years-old smoker (15 pack-year), with personal history of hereditary thrombocytopenia and diabetes insipidus with inflammatory/infiltrative process of pituitary gland. Followed in endocrinology out-patient clinic. Evaluated in pulmonology due to breathlessness on exertion. Chest computed

tomography (CT) showed pericentimeter bilateral mediastinal and hilar lymph nodes, nodular lesions with central cavitation and multiple parenchymal cysts with bizarre shape, some with thick wall, with upper lung predominance. Bronchoalveolar lavage revealed normal total cell counts, differential count with eosinophilia and 0,02% of CD1a+ cells. Negative mycobacteria cultures. Negative cytology for neoplastic cells. Diagnosis of pulmonary Langerhans cell histiocytosis, with pulmonary and possible pituitary involvement, was made based on typical radiological findings and history of cigarette smoking. The patient stopped smoking and started desmopressin and prednisolone, that was maintained for 4 months. The follow up chest CT showed that mediastinal and hilar lymph nodes were stable, with resolution of the majority of the nodules and progression of some to new cystic lesions. Plethysmography revealed a slight defect in DLCO. Without desaturation in the six minute walk test. Afterwards, due to dimensional increase in hilar lymph nodes, an EBUS-TBNA was performed with puncture of mediastinal and hilar lymph nodes which demonstrated noncaseating epithelioid granulomas. Negative anti-CD1 immunocitochemistry. Negative mycobacteria cultures. In another hospital, surgical lung biopsy and lymph nodes excision was performed. Histology showed noncaseating, confluent, epithelioid granulomas along the bronchovascular regions. Immunohistochemistry was negative for anti-CD1a and anti-S100 proteins. Serum angiotensin converting enzyme was increased, without other laboratory alterations. The diagnosis of sarcoidosis was assumed, in a multidisciplinary interstitial lung diseases meeting, in a patient with previous diagnosis of pulmonary Langerhans cell histiocytosis.
Discussion: The interest of this particular case comes from the diagnosis, in a short period of time, of two rare diseases in the same patient. In this case, a diagnosis of pulmonary Langerhans cell histiocytosis was performed based on the history and radiological findings. In the follow up a pulmonary and lymph nodes biopsy was performed and histology demonstrated noncaseating epithelioid granulomas. After exclusion of others causes, diagnosis of sarcoidosis was assumed. The central nervous system involvement may be present both in sarcoidosis as in pulmonary Langerhans cell histiocytosis, increasing the diagnostic challenge.

***Keywords**: Pulmonary Langerhans cell histiocytosis. Sarcoidosis. Diabetes insipidus.*

PO 046. HYPERSENSITIVITY PNEUMONITIS OR SARCOIDOSIS? IT'S A DIFFICULT DIAGNOSIS SOMETIMES

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Introduction: In our clinical practice, we often face patients who represent an etiological dilemma. Hypersensitivity pneumonitis and sarcoidosis are two clinical entities that may share similar clinical, laboratory and imaging features, which can therefore make diagnosis difficult. Given this ambiguity, the diagnosis may lay on histopathology findings.
Case report: The authors present the case of a 50-year-old male patient, who was referred to the Pulmonology outpatient clinic due to recurrent episodes of what was interpreted as respiratory infections. This patient did not mention any respiratory complaints at the time of the first visit. He had a past medical history of hypertension; he had never smoked; worked as a truck driver and had a history of domestic contact with parrot and chickens. During physical examination he didn't have any relevant findings. He had had some previous investigation: a former chest X-ray revealed diffuse interstitial infiltrates; respiratory functional tests (RFT) were normal; thoracic-CT demonstrated parenchymal changes, micronodular and reticular images and calcified lymph nodes at mediastinum. Sarcoidosis and hypersensitivity pneumonitis were considered the main diagnostic hypothesis and several tests were performed: RFT remained normal; his blood tests revealed high IgG specific for parrot, *Aspergillus* and *Candida albicans* and high SACE value; arterial blood gases were normal; nosignificant findings were identified on bronchofibroscopy, and the CD4/CD8 index value in bronchoalveolar lavage was 1.81. He also repeated thoracic CT, where bilateral changes with reticular images and parenchymal micro-nodules remained, as well as mediastinic adenopathies, some of them with eggshell calcification. Considering the difficulty in clarifying the etiology of these changes, a surgical biopsy was performed and histopathologic analysis was compatible with sarcoidosis. An ulterior Gallium 67 scintigraphy did not reveal any findings compatible with active sarcoidosis. This patient remains without any clinical symptoms, still presenting normal respiratory functional tests and keeping regular follow-up.
Discussion: We highlight the utmost importance of a comprehensive approach to achieve a correct diagnosis, resulting in an appropriate therapeutic decision for each of these diseases, but also avoiding some treatments that can bring irreversible and disastrous consequences.

***Keywords**: Sarcoidosis. Hypersensitivity pneumonitis.*

PO 047. DRUG-INDUCED INTERSTITIAL LUNG DISEASE - A DIAGNOSIS OF EXCLUSION

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Introduction: Drug-induced interstitial lung disease (DILD) can occur in association with a variety of agents, leading to increasing morbidity. Clinical, radiologic, and histologic findings are variable, regardless of class or agent, making it primarily a diagnosis of exclusion. However, despite the significant variability in pathophysiology, clinic and prognosis, the diagnostic and therapeutic approach is similar for all pharmacological groups. The presented clinical cases provide examples of the diversity of pharmacological agents associated with DILD, as well as the diversity of radiographic patterns described in this group of pathologies.
Case reports: 1. Male, 63 years-old, ex-smoker, with atrial fibrillation medicated with amiodarone, referred because of bilateral infiltrates of upper middle predominance. Non-relevant epidemiologic factors. Computerized tomography (CT) revealed areas of ground glass and parenchymal densification dispersed, and interlobular septal thickening with "crazy paving" pat-tern predominately in the upper lobes. Functionally presented a moderately severe obstructive syndrome and moderate decrease in carbon monoxide diffusing capacity (DLCO). No endobronchial alterations, bronchoalveolar lavage (BAL) with 37% lymphocytes, CD4/CD8 ratio of 0.1. Transbronchial biopsy (TBB) suggestive of hypersensitivity pneumonitis. He was taken off amiodarone and corticosteroids treatment started, which led to with subsequent clinical, functional and radiologic improvement. 2. Man, 49 years-old, non-smoker, with history of testicular cancer subject to orchiectomy and 3 cycles of chemotherapy with bleomycin, etoposide and cisplatin with a non-relevant epidemiological context. Referred to the Emergency Department for exertional dyspnea and a dry cough; radiologically with bilateral parenchymal infiltrates. The chest CT showed extensive areas of ground glass parenchymal densification, bilateral, diffuse, of subpleural predominance and subpleural interlobular reticulation. In association he presented with refractory severe respiratory failure due to ARDS and invasive ventilation was required. Lung function

test after discharge showed mild to moderate restrictive syndrome with moderately decreased DLCO. Corticosteroids treatment was started which led to subsequent clinical, functional and radiological improvement. 3. A 74 year-old woman was referred because of persistent dry cough and exertional dyspnea. Previous history of transurethral resection for erosive cystitis, with prolonged prophylactic antibiotic therapy with nitrofurantoin, and iatrogenic hepatitis associated nitrofurantoin. Non-relevant epidemiological context. The Chest CT showed subpleural densification with reticulation, tree-in-bud and bronchiectasis, prevalent in the lower lobes, compatible with usual interstitial pneumonia pattern (UIP). Initially without ventilatory functional alterations. The BAL reveled 11% lymphocytes and CD4/CD8 ration of 0.16. BTB with nonspecific bronchial inflammation. Functional and radiologic stabilization was achieved after nitrofurantoin suspension and corticosteroid therapy.
Discussion: The authors present these clinical cases of drug-induced interstitial lung toxicity because of the growing relevance and impact of this group of conditions, which by their heterogeneity and frequent association with other comorbidities are still often overlooked and underdiagnosed

Keywords: *Drug-induced interstitial lung disease. Lung toxicity. Amiodarone. Bleomycin. Nitrofurantoin.*

PO 048. RHEUMATOID DISEASES AND PULMONARY SARCOIDOSIS – CLINICAL CHALLENGE

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Introduction: Sarcoidosis is a heterogeneous multisystem granulomatous disease, with features common to rheumatic diseases and numerous reports coexisting or mimicking these diseases. The increasing use of several drugs to treat inflammatory arthropathy, particularly the anti-tumor necrosis factor alpha, appears to be associated with the increase of sarcoidosis-like case reports. We describe two cases of pulmonary sarcoidosis.
Case reports: Case 1: 44 year old female, leucodermic with rheumatoid arthritis since she was 33, treated with hydroxychloroquine up to 3 years ago, and suffering with dyspnea and fatigue for the past 6 months. Physical examination with-out significant changes. Lab results showed angiotensin converting enzyme (ACE) 101 U/L. The CT scan "standard reticulum micronodular pattern with bilateral spectrum and preferential achieving to the medium to upper floors with multiple reactive nodal formations". The bronchoalveolar lavage (BAL) showed 92% macrophages, lymphocytes at 7% and CD4/CD8 index 8.1 with negative microbiological study". Lung biopsy revealed epithelioid non necrotizing granulomas and no alcohol-acid resistant bacilli. Case 2: 44 year old male, leucodermic with ankylosing spondylitis since he was 14 years of age and psoriasis since his 37, usually treated with etanercept for the past 10 years, having held infliximab suspended by thrombocytopenia, with complains of progressively worsening cough. Physical examination revealed psoriasis lesions on the forehead and auscultation without changes. Lab results showed C-reactive protein at 2.42 mg/dL, ACE 75 U/L, positive IGRA, negative microbiological tests. Chest CT scan showed "three foci of consolidation with air bronchogram in the right upper lobe, primarily in the anterior segment but committing the three segments, coexisting heterogeneous densification in "ground glass" in the surrounding parenchyma and circumferential wall thickening of the bronchial tree segment without clear central lesions that conditioning postobstructive consolidation, aspects that fall with a pneumonic focus". Bronchoalveolar lavage (BAL) with negative bacteriological tests. Transbronchial lung biopsy showed pulmonary parenchyma with non necrotizing granuloma with giant cells.
Discussion: The association between sarcoidosis and rheumatoid diseases raises several questions that remain unanswered, and this association may result from common changes in certain pathways of the immune system. In literature there are several cases describing the relation between pulmonary sarcoidosis and the treatment with etanercept, where there appears to exist a direct relation with the biological treatment. Further studies are needed to clarify concerns about the safety of the treatment of rheumatoid diseases, in particular induction/association with sarcoidosis, but also to understand the reliability of different blood and radiological markers.

Keywords: *Pulmonary sarcoidosis. Rheumatoid arthritis. Ankylosing. Spondylitis. Etanercept.*

PO 049. EVEROLIMUS: A PROMISING THERAPY IN THE TREATMENT OF LAM IN TUBEROUS SCLEROSIS?

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Introduction: Tuberous sclerosis is a genetic autosomal dominant disorder which is characterized by mutations in either the TSC1 or TSC2 genes, resulting in constitutive activation of mTOR and cell proliferation. Hamartomas may develop in several organs, such as the brain, heart, skin, liver, lungs and kidney. Lymphangioleiomyomatosis (LAM) affects 40% of patients with pulmonary involvement of tuberous sclerosis and it is most predominant in women. It is a progressive lung disease characterized by infiltration of smooth muscle cells and formation of parenchymal cysts.
Case report: Female patient, 34 years old, housewife, presenting a clinical history that includes tuberous sclerosis, giant non-embolizable renal angiomyolipoma, nephrectomy of the left kidney in 2011, chronic kidney disease stage IIIb under follow-up by Nephrology, brain subependymal hamartomas under follow-up by Neurology. Non-smoker, with no personal history of exposure to organic or inorganic agents nor respiratory diseases. Medication: valproic acid 500 mg 1+1/2, clonazepam 0,5 mg id, pantoprazol 40 mg id, ethyl loflazepate prn, calcitriol 0.25 µg id, folic acid 5 mg id, everolimus 10 mg 5 days/week (initiated by the nephrologist). First pulmonology appointment: The patient denied cough, dyspnea or any other respiratory symptoms. Physical examination: patient in good health, SaO2 97%, pulmonary auscultation within the normal range, with no cutaneous lesions. Complementary diagnosis exams: CT-thoracic-abdomino-pelvic with count-less cystic images which suggest pulmonary lymphangioleiomyomatosis (the larger cysts measure 4 and 2,8 cm), sub segmental atelectasis of the left lower lobe, with no mediastinal, hilar or axillary adenopathy, with no pleural effusion, right kidney almost replaced by giant angiomyolipoma; Pulmonary function tests (poor patient collaboration) with FVC 89, FEV1 84, FEV1% 81, DLCO 59, other results within the normal range. We decided to maintain treatment with everolimus and to keep a close surveillance on the patient's clinical state. She remained clinically stable, with no respiratory symptoms and pulmonary function tests similar to the first ones. Control CT-scan is still pending.
Discussion: Everolimus has been recently approved as a pharmacotherapy option for tuberous sclerosis patients with subependymal giant-cell astrocytomas (SEGAs) or renal angiomyolipomas (AMLs). However, clinical evidence suggests that this treatment can benefit other TSC-associated disease manifestations, such as pulmonary lymphangioleiomyomatosis, as suggested by this case report, which showed clinical and respiratory function stability on CT scan.

Keywords: *Everolimus. LAM. Tuberous sclerosis.*

PO 050. LANGERHANS CELL HISTIOCYTOSIS: VARIABILITY IN PULMONARY INVOLVEMENT

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Introduction: Langerhans cell histiocytosis (LCH) or histiocytosis X, is a rare disorder characterized by an abnormal increase in histiocyte cells, components of the immune system. Signs of LCH depend on the extent and location of the disease. A male predominance is observed.
Case reports: The author presents two clinical cases with distinct pulmonary involvement. First case: 18 year-old male, smoker, with chronic dry cough and acute chest pain. Computed tomography (CT) of the chest showed exuberant pulmonary cysts, diffusely distributed with a predominance in the lung apices, unequal size and bizarre shapes. Bronchofibroscopy with bronchoalveolar lavage was negative to CD1a cells, but lung biopsy established the diagnosis. Second case: 19 year-old male, non-smoker, with sudden dyspnea and pleuritic chest pain. Chest X-ray pointed out left spontaneous pneumothorax, which wasn't solved with thoracic drainage. He has under-gone surgical pleurodesis with blebs resection whose pathological report was compatible with LCH. Thorax CT identified only small cystic lesions in the right pulmonary apex.
Discussion: In adults with LCH, the pulmonary system is the most frequently involved organ and pulmonary lesions may be the only manifestation. The clinical spectrum is broad. Image studies can reveal from diffuse cystic lesions, nodular infiltrates, pleural effusion and pneumothorax to minimal changes of the parenchyma.

***Keywords**: Histiocytosis. Langerhans. Cyst. Lung.*

PO 051. PULMONARY NODULES AS MANIFESTATION OF RHEUMATOID ARTHRITIS

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Introduction: Rheumatoid arthritis (RA) is a systemic inflammatory disease associated with the production of autoantibodies that promote joint destruction. Despite this being the most common presentation, RA can present with several extra-articular manifestations, namely lung disease which highly contributes for the morbidity of these patients. RA involvement of the lungs may take several forms, being most commonly associated with interstitial lung diseases with radiological patterns compatible with usual interstitial pneumonia or non-specific interstitial pneumonia. The majority of patients show a restrictive lung pattern in plethysmography, with or without hypoxemia.
Case report: We present a case of a male patient, 61 years old, Caucasian, active smoker (80 units pack-year), who started with complaints of joint pain in the right knee in 2004 and was submitted to orthopaedic surgery in 2006. In November 2012 he developed a clinical picture characterized by dry cough, asthenia, anorexia and non-quantified weight loss. Lung CT showed multiple bilateral pulmonary nodules (3-5 cm in diameter), predominantly in the superior lobes and apical segment of the inferior lobes with a centrilobular distribution and suggestive of inflammatory/infectious nature. He also showed enlarged mediastinal, hilar and axilar lymph nodes. At that time pulmonary tuberculosis (TB) was hypothesised and the patient was submitted to TB treatment for 15 days without any improvement. The patient was admitted to our Pulmonology Department in April 2013 for etiologic investigation. During anamnesis the patient explained that his joint pain was not only restricted to the knees but also involving the elbows and the metacarpophalangeal joints, which worsened with movements and sporadically were associated with articular stiffness. At physical examination the patient had painful right knee swelling and deformity of both hands with interosseous space atrophy. Lab panel showed haemoglobin of 11,9 g/dl, rheumatoid factor 419 UI/ml (normal < 20 UI/mL) and anti-citrulline antibody 203 UI/mL (normal < 7 UI/mL); negative serology for HIV, hepatitis B and C. Arterial blood gases at room air showed pO2 82.6 mmHg. Lung biopsies through bronchoscopy were compatible with non-specific interstitial lung disease. Lung function tests (LFT) showed: TLC 117%; Tiffeneau Index 93.3; FEV1 95%; DLCO 115%. Later, thoracoscopy with lung biopsies showed pleural hyaline fibrosis and inflammatory infiltrate, as well as, thickening of interalveolar septa. The patient was referred to an autoimmune consultation, where the RA diagnosis was made with severe bone erosions and pulmonary manifestations. Presently, the patient is on leflunomide 20 mg/daily since September 2013 and tocilizumab since July 2014 (completed 13 administrations). Currently, the patient has improved from the joints com-plaints and the pulmonary manifestations, with normal LFT.
Discussion: Despite pulmonary manifestations are frequent among RA patients, multiple lung nodules are seldom reported. Surprisingly, not with-standing the severe radiologic lung abnormalities, LFT were always unremarkable. This singular case alerts for the multiplicity of radiological findings in AR, stressing the importance of an high suspicion index in patients with symptoms of osteoarticular inflammatory disease and pulmonary nodules.

***Keywords**: Pulmonary nodules. Interstitial lung diseases. Rheumatoid arthritis.*

PO 052. MICROSCOPIC POLYANGIITIS: THE PURPOSE OF A CLINICAL CASE

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Introduction: Vasculitis are a group of diseases that cause necrosis and inflammation of the blood vessel wall which eventually culminates in its destruction. Manifest both in the context of strict pulmonary disease or enclosed in a systemic disease.
Case report: Male, 59 years, chainsaw operator, ex-smoker, with history of chronic alcoholism (in abstinence) and disease history of disc herniation (with intake of NSAIDs) and anemia (under study). Treated with Iron 256 mg, pantoprazole 20 mg and allopurinol 100 mg. Observed in the ER by nausea, vomiting and mild peripheral edema for 15 days and epigastric pain with hemoptysis of small volume in the latter 24 hours. Physical examination with uremic breath, mucocutaneous pallor and light swelling to the ankles. Afebrile, eupneic in ambient air (96% SpO2) and normotensive. Cardiac auscultation and pulmonary unchanged. Analytically with anemia (Hb 6,4 g/dl) normochromic normocytic, Cr 17.3 mg/dl Urea 294 mg/dl, K+ 7,1 mEq/L, PCR 1 and metabolic acidosis with partial respiratory failure (pH 7,3; pCO2 43 mmHg HCO3- 11 mmol/L pO2 56 mmHg). Urine II with proteinuria, erythrocyturia and glycosuria. Chest radiograph revealed bilateral alveolar pattern, extensive, predominantly in the lower 2/3. Performed emergency hemodialysis and hospitalized for study, empirically starting methylprednisolone, cyclophosphamide and plasmapheresis. Next days without improvement in renal function (continued dependence on dialysis) but with a resolution of respiratory complaints. CT-Thorax showed interstitial densification, with thickening of the interlobular septa, saving periphery and mediastinal lymphadenopathy, the biggest with 24 × 30 mm and bilateral pleural effusion of little volume. Respiratory function test with DLCO 77. Kidney ultrasound revealing attenuation of the normal parenchymal-sinus differentiation in the left kidney. Renal biopsy showed crescentic necrotizing glomerulonephritis pauciimmune. Analytically with positivity for anti-MPO and negative anti-GBM. Discharged medicated with

cyclophosphamide 50 mg id, prednisolone 60 mg id at weaning. Outpatient observed in the 3rd month after discharge: no respiratory symptoms and CT-Thorax control without parenchymal changes, keeping adenomegaly. Respiratory function test with DLCO 71. Held switch to azathioprine 100 mg.
Discussion: Systemic necrotizing vasculitides correspond to the vast majority of cases of diffuse alveolar hemorrhage of autoimmune cause. The serological study and renal biopsy are essences for the differential diagnosis.

Keywords: *Hemoptysis. Alveolar. Autoimmunity. Kidney-lung.*

PO 053. GRANULOMATOSIS WITH POLYANGIITIS: DIFFICULT DIAGNOSIS

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Introduction: Granulomatosis with polyangiitis (GPA) is a rare disease which prevalence is estimated to be 3/100,000 people, typically present at age 35-55 years, with a male-to-female ratio of 1.5:1. It is a vasculitis with systemic necrotizing granulomatous inflammation especially in respiratory airways, lungs and kidneys, affecting small- and medium- sized blood vessels. It is associated with the presence of PR3 about 90% of patients and MPO about 10%.
Case report: The authors report the case of a 53 years old woman, diabetic type 1 with macrovascular and microvascular complications (ESRD on hemodialysis, diabetic retinopathy, peripheral arterial disease). She had multiple hospitalizations in the previous months by lower respiratory infections. She was treated with antibiotics, improved but increased CRP. Readmitted by global respiratory failure with noninvasive ventilation needs and perforation of the nasal septum (epistaxis), she was diagnosed with nosocomial pneumonia. She was given antibiotic (meropenem and linezolid) verifying a clinical worsening (hypotension, dyspnea, hypoxemia and epistaxis), laboratory (CRP and SR high) and imaging (computed tomography chest -CTc- confluent macro-nodular infiltrates, nodule in the right lower lobe). She was transferred to a critical care unit. Placed the diagnostics of pneumonia versus GPA, was kept antibiotics and added antifungal therapy, corticosteroid therapy and invasive ventilation, verifying clinical, laboratory and imaging improvement. It was suspended corticosteroid therapy after negative result of PR3 and MPO (as well as all autoimmunity laboratory study). It should be noted, blood cultures, galactomannan and precipitins were negative and IGRA indeterminate. Underwent bronchoscopy whose bronchoalveolar lavage (BAL) revealed hemosiderophagus; transbronchial and transcarinal lung biopsies without anormalities. Before new clinical worsening, it was considered the possibility of pulmonary tuberculosis. Under TB drugs, the patient was progressively worsening with reappearance of epistaxis and anemia. It was required middle turbinate biopsy, revealing mild chronic active inflammation, focal ulceration and blood extensive necrosis with inflammatory infiltrate rich in neutrophils. Considering the presence of hemosiderophagus BAL, pulmonary infiltrations and nodules in CTt with aggravation after cessation of corticosteroid therapy, septal perforation and middle turbinate biopsy compatible, it was assumed to be GPA having initiated prednisolone 1 mg/kg/day. The patient presented quick and straightforward clinical improvement, lowering of inflammatory parameters (IP) (25: CRP 1.51 mg/dL and 57.2 procalcitonin; 1.08 ng/mL) and imaging. Since the patient, diabetic, was on hemodialysis, carrying out maintenance therapy was considered as a high risk, with cyclophosphamide and corticosteroids having been chosen to rituximab 375 mg/m^2/week (4 weeks) and prednisolone (3 months). After two months remains asymptomatic with low IP. The authors present this case for its relevance since fulfills two classification criteria for GPA (nasal inflammation, chest X-ray changes, granulomatous inflammation on biopsy and altered urinary sediment). It highlights the complexity of diagnostic and therapeutic motion because it is a sick patient with negative cANCA/PR3, diabetic nephropathy on hemodialysis, which prevents the nephrology manifestation of the disease, making diagnosis challenging, and this was achieved by pneumological and otorhinological repercussions of disease and response to immunosuppressive therapy.

Keywords: *Granulomatosis with polyangiitis. Epistaxis. Pulmonary infiltrates. PR3. Respiratory infection. Rituximab. Diabetes. Hemodialysis.*

PO 054. CHEMOTERAPY WITH PERMETREXED AND CARBOPLATIN COMPLICATION – A CASE REPORT

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Introduction: Neutropenic enterocolitis is a syndrome with a high mortality rate characterized by abdominal pain and fever in neutropenic patients and with an estimated incidence rate of 5.3% of all of the hospitalized patients under hematological and solid tumor cancer treatment. The diagnosis is established by a computerized tomography (CT) scan or an ultrasound that shows thickening and distention of different intestinal segments. Treatment consists in fasting, intravenous (IV) hydration and wide spectrum antibiotics, as well as correction of cytopenia.
Case report: The case is a leucodermic 62 year old man, retired welder, ex-smoker of 40 pack-year, with history of ischemic hearth disease and essential arterial hypertension, admitted in our Unit. Six months before he was diagnosed with a malignant epithelial mesothelioma and was submit-ted to a left pleuropneumecthomy and adjuvant chemotherapy (3 cycles) with permetrexed (500 mg/m^2, 955 mg) and carboplatin (736 mg). The last chemotherapy cycle was made 1 week before he was admitted. He presented diarrhea (no blood, mucous or pus) with about 3 days evolution, associated with a fever (38.3 ºC). Upon admittance he had 37.7 ºC timpanic temperature, ulcerated lesions in the oral mucosa and diffused pain upon abdominal palpation with increased bowel sounds. Laboratory results showed leucopenia (750 cels/uL) with neutropenia (120 cels/uL) and a PCR of 15 mg/dL. Stool culture was made and search for Clostridium difficile A and B toxins as well as the aerobic and anaerobic blood cultures were negative. A CT abdominal scan showed "diffuse and uniform wall's thickening of the long segment of the jejunum and proximal ilion, hipercaptant mucosa and parietal oedema (in relation with acute enterocolitis) and similar changes on the terminal ilion and diffuse in the colon". Enterocolitis in a neutropenic patient was assumed and treatment was initiated with piperacilin-tazobactam and metronidazole, fasting, IV hydration and filgastrim. During the 5th day of admittance a clinical worsening was noted with the start of hematemesis and an endoscopy showed high volume clogs in the hypopharynx and numerous ulcers in the duodenum. Biopsies taken during endoscopy confirmed the diagnosis of ulcer. Bilateral nasal packing was made to control the bleeding and hemodynamic stability was obtained. After the 7th day of admittance the patient presented with vomiting and consequent aspiration of food content followed by cardiac arrest that lead to his death.
Discussion: The increased use of antifolate agents and other chemotherapies, although increasing the survival rate, is associated with a bigger rate of serious and potentially fatal adverse reactions. In patients with permetrexed therapy presenting abdominal pain, diarrhea and thickening of the abdominal wall in the CT scan, the possibility of neutropenic enterocolitis should be considered, being the focus of this presentation the call for this entity.

Keywords: *Neutropenia. Chemotherapy. Permetrexed. Enterocolitis.*

PO 055. PULMONARY LEIOMYOMATOSIS – A RARE CAUSE OF PULMONARY NODULES

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Introduction: Benign leiomyomatosis is a rare disease, affect predominantly women and the lung is the most affect extra-uterine organ. Its discovery is mostly accidental, through the realization of a thorax X-ray which demonstrates multiples bilateral pulmonary nodules. Its definitive diagnosis is made by a pulmonary biopsy. In this clinical case, a woman was study after being forwarded to a pulmonary consultation because of an abnormal thorax x-ray made before a surgery.
Case report: MLAPF, female, Caucasian, 57 years old, former working woolen mill, resident in Guarda district, with antecedents of arterial hyper-tension, dyslipidemia and gallstones, was proposed to laparoscopic cholecystectomy. In pre-surgery exams, the thorax x-ray reveal pulmonary bilateral nodules most evident in right pulmonary base and she was present to pulmonary specialist. Clinically, she presented asymptomatic and physical examination was negative. For better characterization of this alteration on x-ray, she performed a computerized tomography with contrast which reveal a nodular image contrast-enhanced with 27 mm of largest diameter just on pulmonary hilum, conditioning thickening of the posterior wall of right inferior lobe. Also they were visible, in both lungs, several nodular formations, some reaching about 1.5 cm compatible with bilateral pulmonary metastasis without mediastinal lymphadenopathy. The bronchoscopy showed no signs of neoplasia, having proceeded in right inferior lobe a bronchial aspirate, which proved later negative for the presence of malignant cells. In the absence of histological characterization, she was submitted to surgical lung biopsy whose histological results revealed a tumor composed of cells with round nuclei and abundant cytoplasm arranged in nests separated by fibrotic bands with abundant vascularization without the presence of hemorrhage or necrosis. The immunocytochemistry was positive for vimentin, desmin and smooth muscle specific actin, negative for keratin and other neuroendocrine markers or lymphocytic, so it has led to the diagnosis of neoplasia with smooth muscle differentiation (leiomyoma). As the fact that the patient was a middle-aged woman with multiple bilateral pulmonary nodules, we were faced to a case of pulmonary leiomyomatosis.
Discussion: As described in literature, this case was discovered accidentally. In most reported cases, the patient had a history of uterine leiomyomas and hysterectomy, which makes this diagnosis was even less likely on our case. The ideal therapy has not been established due to the limited number of patients with this disease. In this case, we opted to close clinical surveillance, remaining stable and asymptomatic to date.

Keywords: *Pulmonary leiomyomatosis. Pulmonary nodules and benign neoplasm.*

PO 056. PULMONARY AND MEDIASTINAL INVOLVEMENT BY LYMPHOMA – BRONCHOSCOPY'S CONTRIBUTION

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Introduction: Thoracic involvement by lymphoma is relatively common at diagnosis, ranging from 85 to 40% depending on the histological type. However, endobronchial involvement is rare. Bronchoscopy allows endobronchial evaluation and a minimally invasive obtainment of specimens for diagnosis and staging.
Objective: Characterization of endoscopic findings in the population of patients with thoracic involvement by lymphoma confirmed by bronchoscopy. Determine the bronchoscopy contribution at patient's diagnosis and follow-up.
Methods: A retrospective cohort study was conducted including patients with lymphoma in who bronchoscopy allowed to obtain evidence of thoracic involvement through cytology, histology or flow cytometry between January 1993 and December 2014. Demographic data as well as data related with the diagnosis, treatment and evolution of lymphoma were added to endoscopic and pathologic data. Data were analyzed with SPSSv20.
Results: During the referred period a total of 20,316 bronchoscopies were performed, corresponding to 11,697 patients. The inclusion criteria were met by 91 patients. In this population a male predominance (66%) was identified. The mean age at diagnosis was 57.5 ± 17.2 years. Analysing the histological subtypes, 63% corresponded to B-cell non Hodgkin's lymphoma (NHL); 27.8% to Hodgkin's disease (HD) and 8.9% to T-cell NHL. About 66% of patients had thoracic involvement at presentation documented by imaging. Six cases corresponded to primary pulmonary lymphomas that, essentially, were expressed by pulmonary nodules and/or masses. Mainly, bronchoscopy was performed for suspicion of pulmonary involvement by lymphoma (41.3%); for suspected infection (19.5%) and for mediastinal puncture (19.5%). Direct signs of neoplasia were observed in 45% of cases, essentially expressed by mass (56%), mucosal infiltration (29%) and nodules (14%). Indirect signs of neoplasia were identified in 24% of patients and inflammatory signs in 15%. Fourteen patients (15%) had a normal endoscopic examination. The proximal bronchial biopsy, the transbronchial needle aspiration and flow cytometry of bronchoalveolar lavage constituted the most efficient techniques, enabling the diagnostic confirmation with 84%, 83% and 80% diagnostic yield, respectively. The flow cytometry of bronchoalveolar lavage allowed the diagnosis of pulmonary involvement by lymphoma in 7 patients with normal endoscopy. Thus, bronchoscopy contributed for the initial diagnosis of lymphoma in 32.6% of exams, allowed the staging in 25% and confirmed disease progression in 42%. In 61% of exams, bronchoscopy helped defining the treatment plan.
Conclusions: In this series, lung or mediastinal involvement were verified with greater frequency in cases of systemic disease than in isolated thoracic disease. The bronchoscopic procedures, particularly bronchial biopsy, transbronchial needle aspiration and flow cytometry of bronchoalveolar lavage, allowed the diagnosis and characterization in a high percentage. The bronchoalveolar lavage is a useful technique for the diagnosis of pulmonary involvement without bronchoscopic alterations.

Keywords: *Lymphoma. Pulmonary involvement. Bronchoscopy.*

PO 057. LUNG CANCER IN A *SITUS INVERSUS* PATIENT

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Introduction: Complete *situs inversus* (CSI) entails a mirror-image reversal of all the structures of the body and it is estimated to occur in 1/25,000 newborns. In approximately 20-25% of patients is associated with primary ciliary dyskinesia (PCD). PCD is a genetic disease caused by defects of the structure and function of the cilia that lead to abnormal mucociliary clearance, which conducts to clinical disease of the sinus and lungs. Kartagener's syndrome (KS), which is currently classified as a subgroup of PCD, is characterized by the triad of bronchiectasis, paranasal sinusitis and CSI. Lung

cancer arising in a patient with Kartagener's syndrome is very rare and to date only 6 cases have been reported in the literature.
Case report: A 47-year-old Caucasian man, former smoker (4-pack/year), presented to the emergency department with productive cough with hemoptoic sputum. The chest radiograph revealed CSI and a left-sided paracardiac lesion. He was diagnosed with pneumonia and oral antibiotics were prescribed. Pulmonology appointment was scheduled. A chest CT scan per-formed on 31/12/2014, revealed a mass measuring about 5.5 cm in the left medium lobe and bronchiectasis. Rigid bronchoscopy (22/1/2015) showed visible tumor arising from the B5 left bronchus. Histological findings were compatible with the diagnosis of squamous cell carcinoma. Two days after the exam the patient presented to the emergency department with a left thoracic pain. He was admitted to *the Pulmonology Department for etiologic investigation*. The chest radiograph exhibited a small pleural effusion in the left side and blood examination revealed leukocytosis and C reactive-protein of 24 mg/dL, interpreted as pneumonia. The thoracocentesis showed purulent fluid and the cytological analysis was negative for malignant cells. During the in-stay we understood that he had a history of childhood ear infections and chronic sinusitis that led to several surgeries in the past. He also had infertility problems and his only child was born after fertility treatments. At this point we considered KS. He was submitted to nasal brush biopsy, for evaluation of the cilia through electron microscopy. Deficient external and internal cilia arms were confirmed, with the smallest mean of cilia arms observed in our lab. He did a PET-scan and then EBUS - T2aN2M0, stage IIIA. He underwent neoadjuvant chemotherapy with gemcitabine/cisplatin, with partial response observed on CT-scan after 3 cycles. After that he was submitted to left medium lobectomy with lymph node dissection (17/6/2015). The histological findings revealed poorly-differentiated squamous cell carcinoma with visceral pleural invasion and lymph node groups 7 and 11 metastasis, consistent with pT2N2 – stage IIIa. He started adjuvant chemotherapy at 28/7/2015 and is waiting for radiotherapy evaluation. He is in a good physical condition, with a performance status of one.
Conclusions: There is little knowledge concerning the correlation between KS and malignancy, including lung cancer. The motility defect in the cilia of the respiratory mucosa and in bronchopulmonary tree clearance present in KS, theoretically, could result, not only in poor bacterial clearance, but also in chronic oncogenic substance exposure, leading to cancer.

Keywords: *Lung cancer. Kartagener's syndrome. Primary ciliary dyskinesia. Complete situs inversus.*

PO 058. HODGKIN LYMPHOMA: DESCRIPTION OF TWO CASES

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Introduction: Hodgkin lymphoma (HL) represents 10% of all lymphomas with an incidence of 2.4:100,000 people in Europe. It has bimodal distribution with peaks in young adults (15-34 years) and adults older than 55 years. Autoimmune diseases and immunosuppression are risk factors. It may present itself with asymptomatic lymphadenopathy(s) or incidental imaging findings (mediastinal mass).
Case reports: Case 1: we describe the case of a 73 years old woman, Caucasian, with rheumatoid arthritis, autoimmune hepatitis, arterial hypertension and pulmonary tuberculosis treated in childhood. Currently medicated with azathioprine, prednisone, atenolol, chlorthalidone, aspirin and other NSAIDs and opioids. She came to the emergency department (ED) with fever and anorexia that had started four weeks earlier. The imaging study revealed multiple nodules with lung, liver, adrenal gland right and left kidney involvement, suggesting metastatic disease. On examination the patient presented with good general condition, ulnar deviation of the metacarpophalangeal joints and rheumatoid subcutaneous nodules in both hands. Blood tests without leukocytosis or anemia but with elevated CRP (217 mg/L). Blood and urine cultures were negative. Cytological examination of bronchoalveolar lavage was unremarkable and microbiological cultures were sterile but with positive galactomannan antigen (1.3). For possible invasive aspergillosis was instituted therapy with voriconazole, suspended by the absence of clinical response and galactomannan antigen negative in blood analysis. Transthoracic needle aspiration biopsy showed classic HL, nodular sclerosing type. Bone biopsy was consistent with invasion by HL. She was discharged for hematology consultation. Case 2: we describe the case of a 37 years old woman, Caucasian, asthmatic since childhood and anxiety disorder. Medicated with deflazacort, fluticasone in combination with salmeterol, dipotassium clorazepate and diazepam. She presented to the ED with fatigue and wheezing, it was admitted exacerbation of bronchial asthma and the patient was discharged medicated with oral glucocorticoids and inhaled bronchodilators. By persistent com-plaints she returned to the ED and performed a chest radiography which had marked mediastinal widening. The chest CT revealed a large mediastinal mass involving the main bronchial tree. Bronchoscopy showed edema of the proximal bronchial tree and whitish lesions (similar to "fibrin clots") that occluded the left main bronchus (LMB). Bronchial biopsies and transthoracic needle aspiration biopsy were inconclusive. Due to clinical worsening with compressive symptoms, it was proposed surgical biopsy through mediastinotomy, having performed bronchoscopy with mechanical clearing the LMB during the same OR time. Histopathologic examination was consistent with HL, nodular sclerosing type. She was treated with chemotherapy and radiotherapy and keeps follow-up in Hematology consultation.
Discussion: With these clinical cases, the authors intended to illustrate the clinical variability in the presentation of HL, the diagnostic difficulties and the importance of a high clinical suspicion for the timely diagnosis of a malignant but potentially curable disease.

Keywords: *Lymphoma. Hodgkin. Asthma. Rheumatoid arthritis.*

PO 059. TWO TUMOURS

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Introduction: Lung cancer is the leading cause of death worldwide from cancer. About 8% of cases occur in patients with previous diagnosis of another primitive neoplasms. Patients with primary lung cancer have an increased risk to develop a second cancer, with a 1-16% incidence of synchronous tumors. The authors present a case of a 73 year old female patient, with active smoking habits (40 packs units year), with a past of COPD group B, hypertension and dyslipidemia.
Case report: The patient had progressively worsening complaints of chronic bronchitis since two months with tiredness, dyspnea/mMRC1, weight loss and anorexia. A Chest CT revealed a spiculated nodule with 24mm in the right upper lobe (RUL) without mediastinal lymphadenopathy. Aspiration transthoracic biopsy of the RUL lesion was compatible with an adenocarcinoma (CK7 and TTF1 positive, negative p63). PET-CT showed two hypermetabolic nodules in RUL (SUV 2.9 and 7) and a nodule in the left upper lobe (SUV 5.72). Wedge resection of the left upper lobe (LUL) was realized, and pathological results revealed a squamous cell carcinoma 1,2 × 0,8 × 1,5 cm with visceral pleura invasion. Three cycles of chemotherapy where subsequently programmed before the patient was submitted

to right upper lobectomy. The pathological findings were consistent with invasive adenocarcinoma, solid pattern and clear cell (CK 7 and TTF-1 positive, negative CK5 and p63) - pT2N0. The surgery was followed by adjuvant chemotherapy. The patient is currently in follow-up and remains without disease recurrence after 16 months.
Discussion: The distinction between synchronous primary malignancies and metastatic disease is sometimes difficult. Synchronous lung cancer occurs more frequently in smokers and seems to have a direct relationship with the smoking habits.

***Keywords**: Cancer. Lung. Adenocarcinoma.*

PO 060. ORAL VINORELBINE AND CISPLATIN WITH CONCOMITANT RADIOTHERAPY AFTER INDUCTION CHEMOTHERAPY WITH ORAL VINORELBINE AND CISPLATIN FOR PATIENTS WITH LOCALLY ADVANCED NSCLC

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Objective: To evaluate the efficacy and toxicities of the combination of oral vinorelbine-cisplatin with radiotherapy (RT), after a vinorelbine-cisplatin induction chemotherapy (two cycles) in patients with non-small lung carcinoma cells (NSCLC).
Methods: Patients with previously untreated, inoperable, histologically or cytologically confirmed stage IIIA or IIIB NSCLC, with per-formance status ≤ 1 and weight loss ≤ 10% received two cycles of induction CT with oral vinorelbine (60 mg/m^2) on days 1 and 8, and cisplatin (75 mg/m^2), on day 1 every 21 days. Patients with tumor response or stabilization continued to receive oral vinorelbine (40 mg/m^2), day 1 and 8, and cisplatin (40 mg/m^2) day 1 every 21 days, with concomitant thoracic RT (2 Gy/day, 6 weeks, and total dose 60 Gy).
Results: Between 2004 and 2013, the cases of 28 patients who met the above full therapeutic program were reviewed. Average age of 63 years; 22 men and 6 women; 10 with adenocarcinoma, 15 with squamous cell carcinoma and 3 with NSCLC unspecified. No complete responses were observed. The disease control rate was 43% after induction and 71.4% post concomitant therapy. Progression-free survival was 46 weeks and overall survival was 88 weeks. The toxicity grade 3 and 4 reactions observed were: neutropenia in 4 patients; esophagitis in 6 patients and pneumonitis in 3 patients. No treatment related deaths occured.
Conclusions: The oral vinorelbine-cisplatin combination can be administered with concomitant radiotherapy, with good efficacy and an acceptable safety profile.

***Keywords**: Oral vinorelbine. Cisplatin. NSCLC. Concomitant radiotherapy.*

PO 061. ENDOBRONCHIAL PULMONARY METASTIZATION FROM A RECTAL CANCER: A RARE FORM OF RECURRENCE

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Introduction: The incidence of lung metastasis originating from primary extrathoracic tumours ranges from 20% to 54%. About 50-60% of patients with initially localized colorectal cancer (CRC) develop metastases: the most frequently encountered are in the liver, followed by the lung. The endobronchial metastization of CCR is a rare event.
Case report: The authors describe the case of a 82 years-old woman, leucodermic, non-smoker, with a previous diagnosis of rectal cancer, which underwent surgery and neoadjuvant chemotherapy, with a follow-up in Instituto Português de Oncologia (IPO) of Lisbon and in apparent remission. The patient had a recent hospitalization for acute tracheobronchitis and was referred to the emergency department by her oncologist for clinical respiratory distress and fever. Blood work presented increased inflammatory parameters (very high CRP and LDH) and chest radiography showed heterogeneous hypotransparency in the lower third of right lung field. She was hospitalized with a diagnosis of health care associated pneumonia and empirically treated with meropenem, suspended after five days by clinical and laboratory improvement (negative procalcitonin), with negative microbiological tests (blood cultures, urine culture and Pneumococcus and Legionella antigen urine). Chest high-resolution computed tomography revealed the presence of multiple solid spiky nodules with irregular borders and scattered throughout the parenchyma of both lungs; larger mass (20 mm) in left bronchial trifurcation area, establishing the differential diagnosis of primary lung cancer and endobronchial metastasis; and several nodules in the liver probably related to hepatic metastasis. Bronchofibroscopy showed endobronchial lesion in left upper lobe and submucosa infiltration at the level of basal right bronchus. The bacteriological and mycological exam and mycobacteriology of bronchoalveolar lavage (BAL) were negative. The cytological exam was suggestive of non small cell lung cancer. Biopsy of endobronchial lesions revealed poorly differentiated adenocarcinoma with immunohistochemical profile favouring colorectal origin. Tumour markers exposed a very sharply increased CA 19.9, CEA, Cyfra 21-1 and NSE. After discussing the case with the assistant oncologist, the patient was discharged clinically stable and referred to Gastrointestinal Oncology outpatient clinic in Lisbon's IPO.
Discussion: Despite the clinical and radiological similarities of endobronchial metastases and primary lung cancer, there are clues that help differentiate these entities, particularly the history of a primary extrathoracic tumour. The long delay that may occur between the treatment of a primary tumour and indolent metastatic expression reflects the nature of solid tumours, namely colorectal cancer. The recurrence of these tumours with endobronchial metastasis is a sign of advanced disease and poor prognosis, usually with short survival. This case is intended to enhance a hospital admission for an infectious disease and the window of opportunity for investigation of other hidden diagnoses – for instance, a rectal cancer recurrence - decisively shaping the evolution and prognosis of these oncological patients.

***Keywords**: Colorectal cancer. Recurrence. Endobronchial metastasis.*

PO 062. ERCC1 IMMUNOEXPRESSION IN LUNG ADENOCARCINOMAS HISTOLOGICAL PATTERNS: RELEVANCE FOR CHEMOTHERAPY RESISTANCE EVALUATION.

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Lung cancer as the most common cancers with high mortality rate related to advance stage at the diagnose time deserves high concern with drug resistance mechanisms, such as those related to DNA repair to better understand therapy response. ERCC1 (excision repair cross-complementing 1) is a specific endonuclease for DNA damage repair, and its expression in bronchial-pulmonary carcinomas can be related with prognosis. The objective of this work was to evaluate the expression of ERCC1 in lung adenocarcinomas (ADC), in order to gain knowledge related to DNA repair mechanisms and response to chemotherapy, by comparing normal lung expression with tumour tissue, according with histological patterns. We have analyzed 45 surgical samples of lung ADCs, 13 had lymph node metastasis. Immunohistochemistry (IHC) was performed on formalin-

fixed, paraffin-embedded tissue samples using an automated Immunostainer (Autostainer 360 - LabVision®). Streptavidin Biotin protocol was applied for ERCC1 antibody (Thermo, clone 8F1 - dilution of 1:100 for 60'). Antigen retrieval was made in PT module, with EDTA. IHC scoring was applied independently by two pathologists that registered the intensity of expression (1- low expression; 2-intermediate expression and 3- high expression) and percentage of stained cells. For statistical analyses we grouped the immunohistochemistry results in 4 categories after multiplying the intensity of expression by the percentage of stained cells (category (-) 0 – 10; (+) 11 – 100; (++) 101 – 200; (+++) 201 – 300). The non-parametric test Wilcoxon-Mann-Whitney was performed using the software Stastistica 7 and $p < 0.05$ was considered as significant. By the 2015 WHO classification, 41 cases of lung adenocarcinomas were classified as mixed type adenocarcinomas, two cases as acinar adenocarcinoma, one as solid mucin producing adenocarcinoma and one as *in situ* ADC (former non-mucinous bronchiolo-alveolar carcinoma); 42 (93.3%) cases had predominant acinar pattern and 25 (55.5%) cases, non-mucinous bronchiolo-alveolar/lepidic pattern; 18 (40%) cases had solid pattern, 7 (15.5%) cases papillary pattern and 15 (33.3%) cases, micropapillary pattern. Lymph node metastasis were present in 13 cases (28.9%). ERCC1 expression was lower in acinar ($p = 0.0016$) and papillary ($p = 0.019$) patterns when compared to normal/non tumoural tissue. Expression in other patterns revealed no differences to basal expression in normal/non tumour tissue. Papillary pattern had significant lower expression than solid ($p = 0.043$) and BA/lepidic patterns ($p = 0.044$). No differences between primary tumour and metastasis ($p = 0.289919$) expression was observed. Higher ERCC1 expression was found in females tumours when compared to males ($p = 0.000846$) tumours. Genetic polymorphisms of genes involved in DNA repair, like ERCC1, may affect patients' response to platinum-based chemotherapy. Some studies suggested that a patient with high ERCC1 tumoural level has better prognosis. However, it is important to revel that ERCC1 confers resistance to chemotherapy, such as cisplatin. ERCC1 expression in micropapillary, solid and BA/lepidic patterns indicates that DNA repair is not impaired in these patterns. Acinar and papillary patterns demonstrated less DNA repair path-way activation, as ERCC1 expression levels were lower. This fact may be relevant because DNA repair mechanisms interfere with some therapies and so these patterns seem to be less prone to cisplatin resistance.

Keywords: *Lung. Adenocarcinomas. ERCC1.*

PO 063. MULTIDRUG RESISTANCE IMMUNOPHENOTYPE IN LUNG ADENOCARCINOMAS DETERMINED BY LRP AND MRP-1 EXPRESSION

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Lung cancer leads as the most common diagnosed cancer still with the highest mortality. Understanding drug resistance mechanisms is crucial to preview therapy response. Multidrug Resistance Protein 1(MRP-1) and Lung Resistance-related Protein (LRP) are associated with Multidrug Resistance (MDR) phenotype. The objective of this study was to evaluate LRP and MRP-1 expression in lung adenocarcinomas (ADC) according to 2015 WHO histological patterns. We have analyzed 45 surgical samples of the adenocarcinoma, 13 with lymph node metastasis. IHC was performed on formalin-fixed, paraffin-embedded tissue in automatic Immunostainer (Autostainer 360 - LabVision®). Streptavidin Biotin protocol was applied according to the manufacturer indications for LRP antibody (Novocastra, clone 9D6 - dilution of 1:300 for 30') and for MRP-1 antibody (Novocastra, clone 33A6 - dilution of 1:50 for 60'). Antigen retrieval was made in PT module, with EDTA. IHC scoring was applied independently by two pathologists that registered the intensity of expression (1- low expression; 2-intermediate expression and 3-high expression) and percentage of stained cells. For statistical analyses we grouped the immunohistochemistry results in 4 categories after multiplying the intensity of expression by the percentage of stained cells (category (-) 0 – 10; (+) 11 – 100; (++) 101 – 200; (+++) 201 – 300). The non-parametric test Wilcoxon-Mann-Whitney was performed using the software Stastistica 7 and $p < 0.05$ was considered as significant. Acinar pattern was observed in 42 (93.3%) cases, lepidic/non-mucinous bronchiolo-alveolar pattern in 25 (55.5%) cases, solid pattern in 18 (40%) cases, papillary pattern in 7 (15.5%) cases, and micropapillary pattern in 15 (33.3%) cases. Lymph node metastasis were present in 13 cases (28.9%). LRP and MRP-1 expression was higher in all ADCs patterns when com-pared with non-tumoural tissue. No differences were found in between the histological patterns, for both LRP and MRP-1. No differences were found between primary tumour and metastasis for LRP ($p = 0.921537$) and for MRP-1 ($p = 0.272657$). No significant differences were found according to patients age, gender and smoking habits. MRP family members are able to cellular export of a variety of organic anions of toxicological relevance and are important in conferring resistance to cytotoxic and antiviral drugs. MRP1 is intrinsically expressed and function-ally active in bronchial-pulmonary carcinoma cells and correlates inversely with chemosensitivity against diverse antineoplastic drugs. LRP makes part to the phenotype MRD and correlates with resistance to cisplatin. MRP-1 and LRP were overexpressed in all the patterns of the studied ADCs, indicating the acquisition of MRD phenotype, which may have implications in drug resistance.

Keywords: *Lung. Adenocarcinomas. LRP. MRP-1. MDR.*

PO 064. MICRORNAS AS PROMISING BIOMARKERS FOR PULMONARY CARCINOMAS: EVALUATION OF LET-7, MIR-21, MIR-126 AND MIR126* PROFILING IN SQUAMOUS CELL CARCINOMAS AND ADENOCARCINOMAS

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Recent studies identified more than 150 miRNAs involved in pulmonary carcinogenesis process, including: let-7 (tumor suppressor, bias RAS gene activation); miR-21 (tumor promoter, bias PTEN suppression); miR-126 and miR-126* (implicated in the processes of inflammation and angiogenesis). Beyond these findings, there might be other roles for miRNAs in pulmonary adenocarcinomas and squamous cell carcinomas development and progression. Our study aimed to explore quantitative relationship between let-7, miR-21, miR-126 and miR-126* expression and pulmonary carcinomas histological types, and to evaluate their potential to predict tumor development/progression. A group of 37 formalin-fixed paraffin-embedded (FFPE) pulmonary carcinoma biopsies were selected from 2009 to 2011 from the Institute of Anatomical Pathology archives, and divided into 4 different groups: pN0 adenocarcinomas (10 samples); pN0 squamous cell carcinomas (9 samples); pN1 adenocarcinomas (10 samples); and pN1 squamous cell carcinomas (8 samples). All samples were microdissected (separating normal and tumor tissues) and miRNA were extracted in both samples by a commercial kit and their expression levels were evaluated by Real-time PCR using SYBR Green based kit. The tumour suppressor let-7 showed a very low/lack of expression either in squamous and adenocarcinomas pulmonary carcinomas ($p < 0.01$), when compared with normal tissue, this low-expression was also verified in respective lymph node metastasis

($p < 0.05$). The expression of miR-21 was higher in squamous and adenocarcinomas pulmonary carcinomas ($p < 0.01$) when compared with normal tissue, this overexpression was also verified in respective lymph node metastasis ($p < 0.05$). The miR-126 and miR-126* presented lower and similar expression either in primary pulmonary carcinomas and lymph node metastasis when matched with corresponding pulmonary parenchyma ($p < 0.05$). Female patients adenocarcinomas pre-sented lower levels of let-7, miR-126 and miR-126* and high levels of miR-21 when compared with the same histological type in male patients ($p < 0.05$). Furthermore, pulmonary parenchyma from male patients with squamous cell carcinoma and from female patients with adenocarcinoma presented lower expression of miR-21 and higher expression of miR-126 and miR-126* than the pulmonary parenchyma of male patients with adenocarcinoma ($p < 0.05$). These results support a role for let-7, miR-21, miR-126 and miR-126* in pulmonary adenocarcinoma and squamous cell carcinoma carcinogenesis progression from early stages and suggest that they could be used as biomarkers to understand histological types when related with gender as well as for an early detection of these microRNAs after studies designed to pre-neoplastic lesions.

***Keywords**: let-7. miR-21. miR-126. miR-126*. Pulmonary squamous cell carcinoma. Pulmonary adenocarcinoma.*

PO 065. CHRONIC COUGH: THE IMPORTANCE OF A COMPLETE DIFFERENTIAL DIAGNOSIS

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Introduction: Chronic cough is one of the most common reasons for referral to respiratory medicine outpatient clinic. Chronic cough is usually associated with gastroesophageal reflux, posterior rhinorrhea or asthma. However, it should not be overlooked more challenging causes, such as the use of angiotensin-converting enzyme inhibitors, pleural and diaphragm diseases, interstitial lung diseases or lung cancer. Pulmonary carcinoid tumours are rare tumours originating in the neuroendocrine cells of the lung and can be manifested by chronic cough, dyspnea, wheezing and recurrent respiratory infections.
Case report: The authors describe the case of an 81 years-old man, leucodermic, retired (formerly farmworker and civil constructor) and referred to respiratory medicine outpatient clinic due to chronic cough with purulent sputum, wheezing, exertional dyspnea and recurrent respiratory infections in the previous three years. He had a previous diagnosis of pulmonary tuberculosis treated at age 25 and denied smoking habits. Initial follow-up study pointed up: total IgE = 129 IU/mL, negative subcutaneous tests, chest X-ray and chest high resolution computed tomography (HRCT) without significant alterations, functional respiratory tests with mixed ventilatory pattern and decreased DLCO and normal arterial blood gases. He was referred to otorhinolaringology and gastroenterology outpatient clinics. Follow-up in respiratory medicine outpatient clinic revealed persistence of chronic respiratory complaints, despite optimal therapy with bronchodilators, mucolytics, respiratory rehabilitation, vaccination and proton pump inhibitor (for peptic esophagitis). Follow-up studies did not show new imaging or functional changes. In 2014, chest HRCT presented nodular image with 12 mm in the right lower lobe in continuity with the right inferior pulmonary vein, placing the hypothesis of arteriovenous malformation. The pulmonary angiography CT demonstrated no contrast filling of the previously described nodule, excluding arteriovenous malformation and raising the suspicion of neoplasm. Bronchofibroscopy (BFC) excluded endoscopic abnormalities. Cytological exam of bronchoalveolar lavage and bronchial brush were suspicious. A lung biopsy showed two glandular epithelial flaps with dysplasia deserving revaluation by BFC repetition. Bronchopulmonary fragments were consistent with the histological and immunohistochemical profile of a typical carcinoid tumour. The case was discussed with Thoracic Surgery and the patient was referred to surgery.
Discussion: Chronic symptoms should be investigated thoroughly, especially if no improvement with standard medication. To approach chronic cough, chest X-ray is often very enlightening with poor positive predictive value. This case takes us to reflect on the role of chest HRCT and bronchofibroscopy in chronic respiratory complaints diagnosis. With timely diagnosis and aggressive surgical therapy, the long-term prognosis of pulmonary carcinoid tumours is very favourable. Therefore, with this case, we also highlight the usefulness of monitoring patients in respiratory medicine outpatient clinic with a window of opportunity for lung cancer early diagnosis and intervention.

***Keywords**: Chronic cough. Differential diagnosis. Typical pulmonary carcinoid tumour.*

PO 066. MILIARY PATTERN IS NOT ONLY TUBERCULOSIS! – RARE PRESENTATION OF LUNG METASTASES IN A PATIENT WITH A LUNG CANCER

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Introduction: The differential diagnosis of miliary pattern on chest teleradiography includes miliary tuberculosis, sarcoidosis, pneumoconiosis, bronchoalveolar carcinoma and pulmonary metastasis of primary tumors of thyroid, kidney, trophoblast and sarcomas. The miliary pattern can also seldom result from hematogeneous spread of metastasis of a primary lung tumor.
Case report: The authors present a case of a 55 year old black woman, born in Angola, and working as a hospital assistant in Portugal for 12 years. The patient was independent in activities of daily living, had an histerectomy for fibroids 15 years before the episode and no history of respiratory disease, smoking or drug abuse. In February 2015, the patient recurred to the emergency department for a 3 week duration dry irritating cough and accompanying fever in the 4 previous days with nightly predominance and which decreased with the use of antipyretics. She denied rhinorrhea or nasal congestion, sore throat, dyspnea, chest pain or other respiratory or systemic complaints. She also denied recent trips and known recent contacts with patients with pulmonary tuberculosis. Chest teleradiography revealed countless bilateral pulmonary micronodules distributed symmetrically without sparing vertices or bases. The HIV-test and direct mycobacteriological examination in sputum were negative, and the remaining laboratory evaluation had normal complete blood count and inflammatory parameters. Based on the exuberance of radiological pattern, she was admitted on a respiratory isolation unit with the diagnostic hypothesis of miliary tuberculosis. Computed tomography of the chest revealed countless well-defined pulmonary nodules with central and peripheral interstitial distribution and sparing of the bronchovascular axes and pulmonary cisures. A larger nodule with 17 mm was visible in the subsegmental apical bronchus of the right upper lobe. Pre-tracheal and pre-vascular mediastinal lymphadenopathies were noted, some with central necrosis. Broncoscopy with biopsy, endobronchial lavage and secretion sampling was performed, during which only inflammatory signs and no other endobronchial changes were noticed. Antituberculosis therapeutic was delayed because of the clinical stability and the persistently negative mycobacteriology results. Lung biopsies revealed epithelioid malignant neoplasia with positive markers for CK7 and TTF1 compatible with the diagnosis of non-small cell carcinoma, probably a lung adenocarcinoma. Tests also detected an increase in Cyfra 21 and NSE and mutation in exon

19 of the EGFR gene. The patient was followed in pulmonology oncology outpatient clinic. The tumor was classified as a stage IV, T4N2M1a. Therapeutic with erlotinib was started with significant improvement of lung lesions and clinical and analytical stability.
Discussion: The incidence of lung cancer in non-smokers is increasing, particularly in developed countries. We presented the case of a non-smoking young woman, with miliary pattern on chest teleradiography to whom lung adenocarcinoma with mutation in exon 19 of the EGFR gene was diagnosed. This emphasizes the importance of a miliary pattern differential diagnosis, proper antituberculosis treatment institution, the need of obtaining biological products and the good response to targeted therapeutic.

Keywords: *Miliary pattern. Lung adenocarcinoma. Non-smokers. EGFR mutation.*

PO 067. INFECTIVITY OF PULMONARY TUBERCULOSIS. EXPERIENCE OF A PULMONOLOGY DIAGNOSTIC CENTER

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An important mean of reducing the incidence of tuberculosis is not only the early detection and proper treatment of the active forms of tuberculosis (in order to reduce transmission) but also the diagnosis of latent tuberculosis infection (LTBI) between contacts, considering their treatment in well-defined situations. Evidence suggests that this can be an intervention cost effective, particularly in certain groups considered at risk as, among others, the close contact of cases of confirmed pulmonary tuberculosis (PTB), especially children, since they represent potential future cases. We carried out a retrospective study of 500 contacts of people with con-firmed PTB, 250 smear-positive, culture-positive PTB contacts and 250 smear-negative, culture-positive PTB contacts. The aim was to assess if there were differences in the type of infection (TB or LTBI). We analyzed 250 contacts of 67 smear-positive, culture-positive PTB cases and 250 contacts of 79 smear-negative, culture-positive PTB cases. In the smear-positive group we detected 3 (1.2%) PTB cases, 87 (34.8%) LTBI cases, 12 (13.8%) of which had less than 5 years (0.4%). In the smear-negative group we detected one (0.4%) PTB case, 39 (15.6%) LTBI cases, 5 (12.8%) of which had less than 5 years. Dividing the single case smear-negative transmission events that occurred in the 79 smear-negative TB patients by the 3 smear-positive transmission events that occurred in the smear-positive TB patients resulted in a relative transmission rate of 0,28. This means that smear-negative PTB patients were less infectious than those with smear positive, as expected, but where, nevertheless, also infectious. We have assumed that detected cases were infected by the event source. However, this may not be true. Actually, exposure to an unidentified source or unrecognized smear-positive remains an inherent limitation of any study of TB transmission. Contrary to what might be expected, we found that in the PTB cases, diagnostic delay (time between symptom onset and treatment initiation) in smear-positive PTB cases was 41.3 days versus 34.8 days in smear-negative PTB cases.

Keywords: *Tuberculosis. Infectivity.*

PO 068. BREAST TUBERCULOSIS – REGARDING TWO CLINICAL CASES

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Introduction: In the majority of cases, tuberculosis (TB) presents as a pulmonary disease, but it can affect any organ. Breast TB is an extremely rare disease, representing 0.025-1.04% of all breast diseases.
Case reports: The authors present 2 cases of breast TB with very suggestive clinical and histological features, confirmed by the response to treatment. The first case corresponds to a 26-year old woman, cashier, non-smoker, previously healthy. She presented with a slow growth, 6 centimeter, hard consistence and painful mass, in the transition of the upper quadrants of the right breast. The ultrasound exam revealed an irregular contour mass of het-erogenous eco pattern and low mammographic density in the mammography. The mammary biopsy evidenced a "...chronic inflammatory process, with epithelioid granulomas and Langerhans giant cells. Acid-alcohol fast bacilli testing was negative". Patient repeated biopsy 4 days after, with the same results. The second case concerns a 45 year-old woman, commercial director, 40 pack-years smoker, previously healthy, working in Angola. She presented with a right breast abscess with episodes of spontaneous draining. Although multiple microbiologic exams, no agent was isolated. Due to persisting com-plains she underwent a surgical drainage, whose drained material was sent for TB culture. Acid-alcohol fast bacilli testing was positive, cultural exam was negative. In both cases, HIV, hepatitis B and C serologies were negative for active disease and a thoracic computed tomography (CT) excluded pulmonary involvement. TB was assumed and treatment was initiated with isoniazid, rifampin, pyrazinamide, and ethambutol, and after 2 months reduced to isoniazid and rifampin, completing 9 months of treatment. Masses regressed and both patients remained asymptomatic.
Discussion: Breast tuberculosis has a variable and non-specific clinical presentation. The diagnosis is usually delayed, requiring a high index of suspicion. Histological findings compatible with TB associated with a therapeutic favorable response may be, as in the presented cases, the only evidence of the disease.

Keywords: *Breast tuberculosis.*

PO 069. ORBITAL TUBERCULOSIS PRESENTING AFTER MINOR HEAD INJURY

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Introduction: The authors bring a case of a five-year-old girl who presented with orbital cellulites after minor head injury. Failure of wound healing despite adequate antibiotics prompted surgical drainage which later isolated *Mycobacterium africanum*. This was an unusual and delayed presentation of disseminated extrapulmonary tuberculosis in an asymptomatic child.
Case report: A previously healthy five-year-old girl of African descent presented to the Emergency Department with fever and right periorbital swelling following a minor head injury 1 week before. She was born in Portugal to healthy parents of West African descent, her immunizations were up to date and her past medical history was unremarkable. She looked systemically well, her tympanic temperature was 38.2 ºC, she had nasal congestion with serous rhinorrhea. Examination of her orbital region showed periorbital swelling which was slightly tender and a discharging wound in her right supraorbital region with no changes in visual acuity or pain on eye movements. The remaining of her examination was documented as normal. Routine bloods showed microcytic anaemia (9.3 g/dL) with negative CRP. She was started on oral coamoxiclav and a follow up appointment was booked. In the following week her wound failed to heal and there was significant worsening of the periorbital swelling. She was apyrexial with no change in her normal activity levels and, despite her extensive orbital swelling, looked well. During her examination on admission it was noted for the first time a slight thoracic scoliosis which was

not tender. Neither the girl nor her family had ever taken any notice of the latter finding. She had also attended the regular Portuguese Child Health visits at her GP without it being noticed. Routine laboratory tests showed slightly raised CRP at 2.81 mg/dL and ESR 55 mm. Wound swabs and blood cultures taken before initiating antibiotic treatment were negative. She was admitted and started on intravenous coamoxiclav. An orbital CT scan was performed and this showed a hematoma with intraorbital extension. She was submitted to surgical drainage the following week and found to have extensive unusual pus in her orbital region which was sent for micro-biology studies. During this time her wound failed to heal, having formed a discharging sinus. As part of her investigation she had a tuberculin skin test which showed a 30 mm induration and a CXR which showed bilateral hilar enlargement. Her HIV status was negative. Intra operative pus cultures later grew Mycobacterium africanum, a distinct subspecies within the Mycobacterium tuberculosis complex that causes up to half of human tuberculosis (TB) cases in West Africa. These results prompted magnetic resonance studies which confirmed disseminated extrapulmonary tuberculosis with liver, spleen, peritoneum and extensive vertebral involvement, resulting in asymptomatic thoracic scoliosis. Despite her extensive disease she remained apyrexial and systemically well with no tiredness and no change of her normal activity levels. She was started on quadruple therapy having made a complete and fast recovery. Neither of her close contacts or family were found to have tuberculosis.

Discussion: Orbital tuberculosis remains an unusual presentation of extrapulmonary tuberculosis. It is thought to be secondary to direct extension, or more commonly, haematogenous spread. Minor injuries can pro-mote spread to the area and hence result in orbital tuberculosis. A literature review on orbital tuberculosis by Madge et al described 79 cases from 39 publications. The mean age of presentation was 19 years (279) with 28 females and 35 males. The median duration of symptoms was 3 months (1 week to 12 years). 26 remained systemically well during their illness, 31 had clinical evidence of systemic tuberculosis. A report by Unuvar et al describes a six yearold boy with calvarial tuberculosis that presented as a frontal swelling. The patient was known to play football and to headbutt the ball regularly. Despite his extensive bone disease he had no pulmonary or extrapulmonary disease. In a retrospective review of eleven patients with soft tissue tuberculosis by Puttick et al three had preceding trauma to the affected area. We found no previous case reports of orbital tuberculosis with isolation of Mycobacterium africanum nor reports of asymptomatic extensive extra pul-monary TB presenting as orbital tuberculosis.

***Keywords**: Extra pulmonary tuberculosis. Orbital.*

PO 070. MORTALITY OF PATIENTS WITH SENSITIVE TUBERCULOSIS IN THE FIRST TWO MONTHS OF TREATMENT IN THE TUBERCULOSIS DEPARTMENT OF THE MACHAVA GENERAL HOSPITAL, MAPUTO, MOZAMBIQUE

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Introduction: Mozambique is one of 22 countries with the highest tuberculosis (TB) incidence rate (552 cases per 100,000 inhabitants) with a prevalence of 556 cases per 100,000 inhabitants. More than half of all TB patients are co-infected with HIV (56%).Overall mortality in TB patients is 69 cases in 100,000 habitants being higher in HIV-TB patients (148 cases in 100,000 habitants (WHO 2014)). In Maputo, TB patients are admitted to the Machava General Hospital. After discharge they are followed-up as outpatients at the same Hospital until they complete two months of directly observed therapy (DOT), and after that period they are referred to Community DOT health centers, where they complete treatment.

Objective: To determine the mortality rate during the first two months of treatment in the TB Department of the Machava Hospital. To determine the main risk factors associated with these deaths.

Methods: Retrospective cohort study of all patients admitted to the TB Department of the Machava Hospital from the 1st of January to the 31st of December 2013. Descriptive statistical methods were applied (e.g., trend measures, dispersion, location and frequency tables), were applied univariate analysis by Poisson regression testing. We used a 5% significance level.

Results: During the study period 470 patients were treated at this facility, of which 51.5% (n = 242) (95% CI 46.9-56.1) were male and the average age was 35 years. Most patients had pulmonary TB (n = 442; 94.0%) (95% CI 91.4-95.9) and the majority (n = 414; 88.1%) (95% CI 82.4-93.7) were infected by. It was also found that only 14.5% (n = 68) (95% CI, 12.9-17.1) of the HIV infected patients, had lymphocyte TCD4 + count above 200/mm^3. More than half of the patients (n = 281; 59.8%) (95% CI 57.5-61.4) presented a Karnorfsky index over 50. The mortality rate in the first two months of treatment was 20.6% (n = 97) (95% CI; 16.73 to 24.19) and the majority occurred during the first 48 hours of hospitalization (n = 84; 86.6%). The Karnorfsky index between 30 and 60 as well as the absolute count of lymphocyte TCD4+ above 200/mm^3 constitute a protective factor for mortality (RR 0.24, 95% CI 0.17-0.33; p < 0.001) and (RR 0.30, 95% CI 0.13-0.72; p = 0.007) respectively). Despite not having demonstrated the association with mortality, extra pulmonary TB and positive serology for HIV increased the risk of mortality 1.42 times (95% CI 0.77-2.62; p = 0.265) and 1.50 times (95% CI 0.77-2.94; p = 0.231) respectively.

Conclusions: The high mortality rate observed in this study, is probably associated with a delay in the TB diagnosis, as well as with the fact that patients arrive at the hospital in a advanced stage of the disease, which was confirmed by the strong association found between mortality and low Karnorfsky index and lymphocytes TCD4+ counting of patients co-infected.

***Keywords**: Mortality. Mozambique. TB.*

PO 071. DYNAMIC OF DIAGNOSIS TUBERCULOSIS IN THE EMERGENCY LABORATORY AT THE MAPUTO CENTRAL HOSPITAL

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Introduction: In countries with limited resources, such as the case of Mozambique, the Ziehl-Neelsen stain smear is the preferred technique recommended by WHO for the diagnosis of TB, especially the pulmonary form because it is a simple test, fast, cheap and more accessible (MISAU 2014, WHO 2014). However, it has to be performed correctly, from the collection of sputum to the processing of the specimen, correct staining, apropriated reading and interpretation of results. When sputum microscopy is A baciloscopia, performed correctly it can detect up to 70-80% of pulmonary TB cases (PNCT 2013). The effective control of TB depends on a good network of laboratories in order to detect TB cases, to monitor the evolution of treatment and to confirm treatment success.

Objective: To establish the frequency of TB positive smear. To determine causes for the high negative TB smear rates.

Methods: Retrospective study, using smear results from the National Program for the Fight Against Tuberculosis. Clinical

and demographic data was collected from January to December 2014. Statistical analysis was done using a computer program Epi, info in the version number 7; descriptive statistical methods (eg., trend measures, dispersion, location and frequency tables) were used.
Results: During the study period samples were sent from 35 different Departments. The Emergency Department contributed with 36% of the over-all number of samples (n = 1,109). Only 13.62% (n = 473) of the Departments (95%; 12.5 to 14.8) sent two or more samples. The main types of samples analysed were saliva (n = 1,598, 47%), sputum (n = 1,141, 34%), and CSF (n = 405,12%). This study included 3,474 patients end per day 42 samples were processed. Sample processing average time was two hours from the reception of the sample to the delivery of the result. Of the 3,474 samples processed, 52.8% (95% CI 51.2 to 54.5) were from male patients. The aver-age age of all patients in the study was 35 years-old. Only 7% (n = 230) of the smears were positive and of these, over 60% (95% CI, 48.4 -72.4) were the mucoid type samples. Most patients (n = 2,967, 86%) (95% CI, 85.5 to 87.4) with a negative sputum smear had only one sample.
Conclusions: The increased flow of patients in the Emergency Department, Pediatric and Medicine Departments may have contributed for those ser-vices to send more samples to the laboratory. Despite this greater contributions of samples from these services, some of these services sent only one sample and mostly of them was saliva. That can justify the small proportion of positive smear in this study. In this study was observed that the positive samples (60%) were the expectoration of mucoid type, probably due to higher parasitic density in such sample as compared to the saliva samples.

Keywords: *Diagnosis. TB. urgency.*

PO 072. THE IMPORTANCE OF ACTIVE OR LATENT TUBERCULOSIS SCREENING IN BIOLOGICAL THERAPY CANDIDATES. EXPERIENCE OF VENDA NOVA PULMONOLOGY DIAGNOSTIC CENTER (CDPVN)

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Introduction: Given the immunosuppressant feature of biological therapy, its use always requires prior screening for active or latent tuberculosis infection (LTBI). The screening is based in clinical investigation, tuberculin skin test (TST) with different cut-offs, depending on prior immunocompetence condition complemented, if necessary, with the interferon gamma release assay (IGRA), thorax X-ray and, if suspicion of active tuberculosis, with sputum smear.
Methods: The authors present the results of a retrospective study on 222 biological therapy candidates evaluated for screening since November 2012 to April 2015. The main objective was to characterize the patients origin referral, TST and IGRA results and eligibility for treatment. The secondary objective was to characterize the time to the first consultation and the time to clinical decision.
Results: Of the 222 patients it was found that 58.1% (n = 129) were female and the average age was 47 years (minimum 13, maximum 75 years), with no gender differences. Patients were referenced by Psoriasis (40.1%), Rheumatoid Arthritis (22.5%), Psoriatic Arthritis, Ankylosing Spondylitis, Crohn's Disease (3.6%) and Ulcerative Colitis (2.7%). 71% (n = 157) were from the influence zone of the CDPVN; 48.6% (n = 108) were referred from National Health System and 11.8% (n = 26) were already under biological therapy. The TST result was ≥ 10 mm in 58.2% (n = 39) of the immunocompetent patients and ≥ 5 mm in 44.6% (n = 62) of the immunosuppressed patients. The IGRA test was conducted in 148 patients being positive in 20.3% (n = 30), negative in 77% (n = 114) and indeterminate at 2.7% (n = 4). Of the 28 immunocompetent patients with negative TST, 2 had positive IGRA. Of the 79 immunocompromised patients with negative two-steps TST, 8 had positive IGRA. No cases of active tuberculosis were diagnosed and 45.6% (n = 99) of patients were eligible for LTBI treatment; 92.1% of them were treated with 6H. We also evaluated the existence of prior tuberculosis therapy, pulmonary tuberculosis contact, tuberculosis therapy interruption, time to onset of biological therapy and surveillance visits. Accessibility to CDPVN was less than 5 days in 76.6% of cases and the clinical decision was inferior to one week in 31.7% of cases.
Conclusions: In the studied group, patients have a low mean age, female gender predominance, are referenced by different specialties and different pathologies (mainly Psoriasis), most immunosuppressed. TST selects both immunocompetent and immunocompromised patients, with IGRA complementing the indication for latent tuberculosis treatment in 7 and 10% of the cases, respectively. The time for response and clinical decision was short, and patients were consulted despite the place of residence or referral.

Keywords: *Latent tuberculosis infection. Biological therapy. Tuberculin skin test. IGRA.*

PO 073. CHILDHOOD TUBERCULOSIS – A CASE REPORT

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Introduction: Tuberculosis (TB) continues to be a serious public health problem worldwide. In 2013, about 9 million people got the disease and 1.5 million died from it. Childhood tuberculosis is one of the ten major causes of dead amongst children, with a global estimate of 130,000 deaths/year. Its impact is much more significant in the developing countries, however, in developed countries childhood tuberculosis can be responsible for as much as 5% of the global burden of the disease. This assumes particular importance because of its diagnostic challenge, imperceptible and often rapid progression, and for its increased potential of extra pulmonary severe forms.
Case report: The authors report a case of a female infant, born on 09/07/2014, with a background of newborn jaundice and vaccination against TB on 21/07/2015. As relevant familiar history stands out the father who is a smoker, with pulmonary TB diagnosed in 2006, having fulfilled antibacilar therapy for at least six months. The mother was submitted to prophylactic therapy against TB in 2006. The infant has been brought to the emergency service in August 2014 due to prostration, food refusal and failure to thrive. She was admitted and diagnosed with miliary tuberculosis with involvement of the lung, liver, spleen, mediastinal lymph nodes and eyes, and with secondary hemophagocytic syndrome. She started antibacilar therapy on 22/08/2014 with rifampicin (R), isoniazid (H), pirazinamide (Z) and ethambutol (E) and requiring corticotherapy. During the hospitalization period her clinical state declined with multiple complications of which we highlight: cardiopulmonary arrest with admission on the pediatric intensive care unit, percutaneous drainage of right apical pulmonary cavity, pneumothorax, right upper lobectomy and ileal intussusception which solved spontaneously. Currently, her clinical state has improved; she's under therapy with H and R and is being followed by a specialist in pediatric infectious diseases.
Discussion: The case reported illustrates the severe presentation that childhood tuberculosis can assume. The unspecific symptoms

and the lack of laboratory results stand as a challenge, and therefore the history of exposure and high clinical suspicion are the best allies of the diagnosis. Childhood TB is a direct consequence of adult TB and a good index of the transmission among the community. There are few studies about childhood TB, with the majority of the recommendations arising from extrapolations of the studies with adults. Because of its aggressive potential, high mortality rates, impact in the development of the child and the perpetuation of the infection among the community there is a need for more investigation to improve the diagnostic exams and to adjust the therapeutic protocols.

Keywords: *Tuberculosis. Childhood.*

PO 074. CLINICAL PRESENTATION AND MORTALITY OF TUBERCULOSIS IN THE ELDERLY: A 7 YEARS RETROSPECTIVE COHORT STUDY

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Introduction: Tuberculosis is still one of the infectious diseases with major global mortality. In the elderly, the morbidity-mortality has even a more important role, especially due to multiple comorbidities and deficient immune response, typical of this population. On the other hand, atypical clinical manifestations and extra pulmonary disease can delay the diagnosis, so a high level of clinical suspicion should be present.
Objective: Characterization of an elderly population (≥ 65 years old) diagnosed with tuberculosis.
Methods: Retrospective analysis of a cohort of adult patients diagnosed with tuberculosis, between 2007 and 2013. Identification of patients with < and ≥ 65 years old and comparison of clinical, radiological and microbiologic characteristics of each group.
Results: From a total of 586 patients with tuberculosis, 165 (28.2%) were ≥ 65 years old. These presented one, or more than one comorbidity (75.2%, p < 0.001), such as diabetes mellitus (28.8%, p < 0.001), congestive heart failure (22.6%, p < 0.001), chronic kidney disease (15.4%, p < 0.001) and respiratory chronic disease (36.9%, p < 0.001). Statistically significant differences were not found regarding immunosuppression (p = 0.137), even excluding the presence of active cancer (p = 0.954); however, infection with HIV was found to be more common in those with < 65 years old (24.8 vs 5.9%, p < 0.001). Tobacco and excessive alcohol consumption were significantly higher in the elderly (59%, p = 0.026 and 14.7%, p < 0.001, respectively). Regarding the symptomatology, statistically significant differences were found concerning dyspnoea (present in 58.3% of ≥ 65 years, p < 0.001), cough (present in 81.8% of < 65 years, p = 0.041) and excessive night sweat (present in 52.7% of < 65 years, p < 0.001). No differences were found concerning fever on presentation (p = 0.058), haemoptysis (p = 0.623), weight loss (p = 0.496) and time between the onset of symptoms (p = 0.901). In both groups, the majority of patients were diagnosed only with pulmonary disease (65.5% in < 65 years and 58.9% from ≥ 65 years); however, 12.3% from those with ≥ 65 years old and 5.2% from those with < 65 years presented only extra pulmonary disease (*p* < 0.001). Cavitation was more common in patients with < 65 years (52.8% vs 32.4%) and pleural effusion in those with ≥ 65 years old (34.1 vs 21.1%), both with statistically significant differences (p < 0.001 and p = 0.003, respectively). Mortality rate during treatment, was more common in those with ≥ 65 years (40.0% vs 18.0%), also with statistically significant differences (p < 0.001).
Conclusions: With this cohort, the authors demonstrate that tuberculosis in the elderly might have different clinical presentations. The mortality rate in this group was higher, which expresses the importance of other comorbidities, in addition to HIV infection.

Keywords: *Tuberculosis. Elderly.*

PO 075. PULMONARY TUBERCULOSIS E LUNG CANCER: A CHALLENGING DIFFERENTIAL DIAGNOSIS – CLINICAL REPORT

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Introduction: The differential diagnosis between tuberculosis and lung cancer is some-times difficult to establish, especially in a country with high incidence of tuberculosis. The authors present the case report of a 75-year-old physically active man, ex-smoker 40 years ago (7 pack units) admitted to the Pulmonology Department of Garcia da Orta Hospital for complaints of fatigue, lethargy and unquantified weight loss lasting for three months. He reported low-grade fever (38 ºC) starting 24 hours before admission. Past medical history: diabetes *mellitus* (with nephropathy) treated with insulin, hyperuricemia and benign prostatic hypertrophy - treated accordingly. In the emergency department he was febrile (38.5 ºC) and physical examination finding were compatible with pleural effusion in the lower 2/3 of the right hemithorax. Laboratory evaluation showed an increase in inflamma-tory parameters with C-reactive Protein 13.5 mg/dL and partial respiratory failure in arterial blood gas in room air (pH,7.39, pCO2 39 mmHg, pO2 56.9 mmHg, HCO3- 23.3 mmol/L). Chest X-ray revealed homogeneous hypo-transparency on the lower 2/3 of the right lung field. He went through further investigation of pleural effusion with: thoracentesis with pleural biopsy - pleural fluid compatible with exudate (7,018 pH, glucose 120 mg/dL, total protein 5.3 g/dL, cholesterol 63 mg/dL, LDH 1148 IU/L, ADA 52.20 U/L, Amylase 80 IU/L), cell count 1,000 cells/uL with a predominance of lymphocytes and 1% of mesothelial cells, without isolation of microbiological agents, and inconclusive pleural biopsy. Chest CT scan - right pleural effusion and right apical irregular nodule measuring 15 × 14 mm and mediastinal, right paratracheal, subcarinal and subaortic lymphadenopathy. For complementary evaluation of pulmonary nodule associated with pleural effusion a PET CT was performed revealing FDG-avid lesions on the right pleura, right upper lobe nodule and bilateral mediastinal lymph node consistent with metastatic disease. He completed 8-day course of ceftriaxone (hemocultures and pleural fluid yielding negative microbiological cultures). There was a decrease of inflammatory parameters and correction of respiratory failure. Given the recurrence of right pleural effusion thoracentesis with pleural biopsy were performed again and histology showed pleural necrotizing granulomatosis compatible with tuberculous etiology, with identification of mycobacteria (negative direct examination, cultural is underway). Since it was not possible to obtain sputum samples for mycobacterial analysis and given the existence of the right pulmonary nodule, the patient underwent bronchoscopy which showed bilateral anthracosis foci and reduction of the lumen of the right middle lobe (extrinsic compression?). The direct examination of bronchial secretions was negative (cultural is in progress) and the cytology of bronchial secretions was negative for malignancy and mycobacteria. The patient started quadruple antituberculous therapy (HRZE) and was discharged on the 8th day of treatment, having no evidence of hepatotoxicity.
Discussion: This case highlights the importance of histological evaluation of pleural needle biopsy in the differential diagnosis of these two diseases, which are so prevalent in Portugal.

Keywords: *Pleural effusion. Pleural biopsy.*

PO 076 ROM RIGHT PLEURAL EFFUSION TO TUBERCULOUS CHRONIC CONSTRICTIVE PERICARDITIS

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Introduction: As pulmonologists we are constantly facing pleural effusions but chronic constrictive pericarditis is rarely the cause. Tuberculosis is the leading cause of constrictive pericarditis in developing nations but represents only a minority of causes in the developed countries. The authors present a case report that illustrates the difficulty to diagnose a rare cause of right pleural effusion.
Case report: A 59 year-old male, no comorbidities known, complained of dyspnoea 4 weeks earlier. The chest X-ray and thoracic CT scan showed extensive right pleural effusion, with normal parenchyma, and a slight ascites. Echocardiogram showed right ventricle overload pattern and hyperechogenicity of posterior pericardium. The pleural effusion was drained but recurred. Several exams were conducted including pleural biopsy, thoracoscopy, abdominal ultrasound and CT scan, PET scan, peritoneum biopsy, immunology and microbiology blood work, endoscopy, colonoscopy, bronchoscopy and liver biopsy, all within normal range. Due to progressive ascites and the patient's drinking history a transjugular liver biopsy was ordered to rule out chronic liver disease. When performing the exam, high pressure in the right heart and right venous system compatible with constrictive pericarditis was noted so the patient was submitted to pericardiectomy, with rapid improvement of pleural effusion and ascites. The pericardium biopsy revealed granulomas. Therefore, with no evidence of other disease and being tuberculosis the cornerstone of chronic constrictive pericarditis, the patient began antibacilar therapy.
Discussion: Chronic constrictive pericarditis can be a rare cause of recurrent pleural effusion.

Keywords: *Tuberculosis. Pleural effusion. Pericarditis.*

PO 077 UBERCULOSIS IN CANCER PATIENTS: RETROSPECTIVE ANALYSIS OF A 7 YEAR COHORT (2007-2013)

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Introduction: Tuberculosis and cancer are major causes of morbidity and mortality worldwide and there is an increasing tendency of diagnostic overlap. The chronic inflammatory state driven by tuberculosis may contribute to neoplastic generation, on the other hand cancer patients are more vulnerable to active tuberculosis by the immunocompromised state.
Objective: Characterization of a population of cancer patients with diagnosis of tuberculosis.
Methods: A cohort of adult patients diagnosed with tuberculosis, in a central hospital, from January 2007 to December 2013, was retrospectively analyzed and patients with active neoplasm were identified. The demographic, clinical, imagiological and microbiological characteristics were reviewed.
Results: From the 619 tuberculosis cases identified in the study period,586 adult patients with respiratory tuberculosis were included. In this cohort, 40 patients (6.9%) had cancer. A male predominance was verified (85.4%) and an average age of 65 years old (minimum 44, maximum 86). In most cases there was history of cigarette exposure (45.7% were cur-rent smokers and 25.7% were ex smokers). HIV serology was negative in 90.6% of the patients. Chronic respiratory disease was the most frequent comorbidity: 20% were COPD patients and 30.8% had structural pulmonary disease. Four patients (10%) had known history of previous tuberculosis (77.5%); disseminated disease was present in 7.5% of the cases. Clinically, the majority of patients had symptoms for less than a month (48.1%) and the most frequent reported were: weight loss (60%), cough (58.1%), dyspnea (50%) and fever (54.8%). *Mycobacterium tuberculosis* isolates were obtained through sputum (55%) and bronchoalveolar lavage (22.5%) and 34.5% of direct examinations were negative. The isolated *Mycobacterium tuberculosis* were sensitive to the 4 first-line drugs of anti-bacillary treatment in most cases (77.8%). Chest radiography presented bilateral infiltrates in 77.1% of the cases without cavitation in 61.1%. Concerning the oncological disease, 35% had lung cancer, 30% had hematologic malignancy and there wasn't any predominant group of malignancies in the patients remaining. Between lung cancer patients, the squamous cell histology predominated (46.2%). With the patients with malignancies eligible to TNM staging system, 66.7% were in stage IV. Half of the patients were under chemotherapy, 39.5% did radiation and 23.7% were submitted to surgical intervention. Up to the end of tuberculosis treatment, 77.5% of the patients died and survival mean was 116 days (CI 95% 77-155).
Conclusions: The tuberculosis and cancer coexistence may bring challenges to the diagnosis of both diseases and delay the beginning of proper treatment options. High clinical suspicion is necessary in order to act fast enough, given the potential poor prognosis.

Keywords: *Tuberculosis. Cancer. Malignancy. Oncology.*

PO 078. MILIARY TUBERCULOSIS AND MYELODYSPLASTIC SYNDROME – A CASE REPORT

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Centro Hospitalar do Oeste-Torres Vedras.

Introduction: The diagnosis of tuberculosis is frequent in patients with myelodysplastic syndrome. However, miliary tuberculosis is rare.
Case report: The authors report a case of an 87 years old man, with known type 2 diabetes mellitus, high blood pressure, chronic kidney disease and normocytic normochromic anemia. He was admitted in the Pulmonology ward due to fever, cough, purulent sputum and dyspnoea for 3 days. There was also asthenia and adynamia for 5 months. In the chest X-ray and chest CT there was evidence of micronodular inter-stitial infiltrates with nodularities in both lungs. The blood work showed anemia and thrombocytopenia. Several exams were performed in order to investigate the clinical situation: 1) Bronchoscopy: diffuse inflammation; bronchial lavage was negative to neoplastic cells or microrganinsm (bacterial and mycobacterial); bronchial biopsies: negative for malignancy; 2) Abdominal and pelvic CT: abdominal mass from hepatic hilum to the pelvic area; 3) PET scan: multiple pulmonary nodules (SUV 5); abdominal mass with no FDG enhancement; diffuse enhancement of all skeleton; 4) Endoscopy: no lesions; 5) Colonoscopy: no relevant lesions; 6) Blood work: hypergammaglobulinemia with raised light chains in urine; normal immunofixation; 7) Myelogram: compatible with myelodysplastic syndrome; 8) Bone marrow biopsy: non caseating granulomas; 9) second bronchoscopy: bronchial-alveolar lavage positive for fast acid staining bacilli and positive culture for *Mycobacterium tuberculosis*; 10) Myelogram culture: waiting for results. Therefore it was assumed the diagnosis of myelodysplastic syndrome associated with military tuberculosis. The patient was started on HRZE.
Discussion: Tuberculosis is a known complication of haematological diseases, including myelodysplastic syndrome. However, military

presentation is rare. The initial presentation of the haematological disease can precede, succeed or be simultaneous to tuberculosis.

Keywords: *Miliary tuberculosis. Myelodysplastic syndrome.*

PO 079. ESOPHAGEAL TUBERCULOSIS: A DIAGNOSIS OF EXCLUSION

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Introduction: Tuberculosis (TB) of the esophagus is a rare condition, even in countries with a high incidence of TB. Studies estimate that it constitutes about 1-3% of gastrointestinal TB cases. The case emphasizes the diverse ways tuberculosis can present.
Case report: The authors describe the case of a 31-year old male, without any relevant personal background, with complaints of dysphagia to solids and retrosternal pain, with one month of evolution. The analytical study didn't show any changes. The upper gastrointestinal endoscopy (UGE) revealed at the middle third of the esophagus, an ulcer with regular edges, 15 mm, within 27 cm of the incisors. Multiple biopsies were negative for neoplastic cells and for DNA of M. tuberculosis (MBT). Echoendoscopy showed thickening and loss of the differentiation of all the layers of the esophageal wall at that level, in continuity with adenopathy of 14 mm. Concerning late complementary study, the highlight goes to negative serology of HIV 1 and 2, normal levels of immunoglobulins and normal serum protein electrophoresis, positive Mantoux test and positive interferon-γ release assay. He went through chest-abdomen CT scan which showed a pulmonary infiltrate poorly defined in the superior lobe of the left lung, with a necrotic core and an adenopathy with 9 mm in aortopulmonary window. Bronchoscopy didn't show any relevant changes; detection of MBT DNA in the bronchoalveolar lavage was negative, but the cultural exam was positive for acid-alcohol resistant bacilli, with identification of MBT. The patient began treatment with isoniazid, rifampicin, pyrazinamide and ethambutol becoming asymptomatic by the end of the second week of medication. He underwent a control UGE after 3 months of treatment where it was observed a small pseudo-diver-ticular scar area.
Conclusions: Esophageal TB could either be primary (isolated), or secondary (with other organs involvement) which is more common but still very rare especially in young and immunocompetent individuals. Manifestations could be nonspecific and may mimic many other conditions, including malignancies. Most cases are treated effectively with tuberculostatics and the delay in diagnosis and initiation of therapy dictates a poor prognosis.

Keywords: *Tuberculosis. Ulcer. Esophagus.*

PO 080. TUBERCULOSIS IN THE ELDERLY AGE

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Introduction: The geriatric population is more prone to the development of tuberculosis (TB), either from endogenous reactivation of residual bacillary foci as from exogenous reinfection. Overall senile tuberculosis is more insidious and difficult to recognize, regardless of sex and age group, probably due to biologic factors such as nutrition and immune status, making fragile individuals into fertile ground for the spread of the bacillus. The authors report a case of disseminated tuberculosis of more severe presentation and discerning diagnosis, given the challenging differential diagnosis of occult neoplasia which was admitted at the beginning.
Case report: 79 years-old woman resident in Portugal, non-smoker, and with personal antecedents of venous insufficiency. She is admitted at emergency room, per condition whit 6 months evolution, asthenia, adynamia, fatigue, weight loss (6 kg) whit memory loss and declined cognitive. Non- fever, non-shortness of breath, non-productive coughs or night sweats. At the time observations, stood out, disorientations, pallor, hydrated, without fever. The pulmonary auscultation whit fine crackles in the two hemithoraces. Analytical leukopenia, lymphopenia, increase serum C-reactive protein and erythrocyte sedimentation rate (ESR), elevate lactate dehydrogenase, urine analyses and hepatic function were normal. Serology for HIV 1 and 2 were negative. Realized chest X-ray and computed tomography showed an increase density of parenchymal pulmonary, small sub-segmental condensation of the medium lobe and posterior of the right inferior lobe. Additional showed diffuses micro nodulation. At the 3th day of hospitalization, fever appears, neurological deterioration. Realized lumbar puncture and neuroimaging was normal. Persisted fever whit deterioration of clinical condition and nutritional state and appearance of inguinal lymphadenopathy and a diagnostic of lymphoproliferative disease were assumed. Bone marrow examination and tumour markers were negative. Bronchofibroscopy and bronchoalveolar lavage those results revealed the presence of *Mycobacterium tuberculosis*. Biopsy of inguinal lymphadenopathy revealed numerous epithelioid granulomas without necrosis, and Langerhans cells. Confirmation of the disseminated TB and molecular drugs-resistant (negative) a therapeutic treatment was started.
Discussion: Tuberculosis, as an infectious disease, finds in the elderly population a marked susceptibility, both for new infections, as for reactivations. The diagnosis is hampered by the characteristics of the clinical picture, often mistaken for the aging's own changes, being the respiratory symp-toms minimal and the cognitive deterioration, chronic fatigue and anorexia the main forms of presentation. In addition to the direct microbiological was negative and difficulted of diagnostic. Deserving a more detailed approach in the diagnosis and treatment of TB.

Keywords: *Tuberculosis. Mycobacterium tuberculosis. Elderly. Diagnostic.*

PO 081. TUBERCULOSIS, THE GREAT IMITATOR

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Introduction: Tuberculosis (TB) is a prevalent disease in Portugal, with an incidence of 22,8/10000. In 2014, in Hospital Prof. Doutor Fernando Fonseca, 89 patients had TB diagnosis. Due to this prevalence the suspicion index among clinicians in our hospital is high. However, physicians must adopt a holistic approach, as many lung diseases can imitate other illnesses, namely cardiovascular ones.
Case reports: First case: sixty-five year-old black male, non-smoker, without prior history of TB and with arterial hypertension. He was admitted to our Pulmonology Department with a 3-months history of dry cough, pleuritic chest pain in the left thorax, fever and weight loss of 5 kg. At that time the differential diagnosis included TB/pneumonia/lung cancer. Chest-CT revealed pleural effusion of small dimensions localized in the left lung base and atelectasis/consolidation. Pleural effusion was compatible with an exudate and the patient was started on empiric ceftriaxone and clindamycin. Laboratory improvement and fever regression were observed in the first days. He repeated chest-CT, which showed slight decrease in pleural effusion size but no changes in the consolidation. Flexible fiberoptic bronchoscopy revealed extrinsic compression of the left inferior lobar bronchus. Bacteriologic

examination of the bronchoalveolar lavage and bronchial secretions did not reveal TB infection and the cytological examination did not show malignant cells. Due to the persistence of fever, he was submitted to a transthoracic echocardiogram, which showed anechogenic image in the inferior cardiac wall, it was not possible to exclude the presence of a pseudoaneurysm. Cardiac MRI showed myocardium rupture occluded by a clot. The ECG showed inferior Q-waves and inferior T-wave inversion. We can conclude that this patient had a metapneumonic effusion associated with an acute myocardial infarction complicated with myocardium rupture. He was transferred to Hospital Santa Cruz, where he was submitted to successful surgical correction of the pseudoaneurysm. He is currently asymptomatic. Second case: fifty year-old white male, non-smoker, with prior history of TB in childhood and with arterial hypertension. He had a 2-months history of productive cough (rarely hemoptoic), fever at dawn/night and weight loss of 9 kg. Chest CT showed bilateral pleural effusion and diffuse interstitial infiltrate. He was admitted to our Pulmonology Department with the clinical suspicion of TB. At physical examination, a holosystolic murmur in the aortic area was heard. Flexible fiberoptic bronchoscopy showed non-specific inflammatory findings. Bacteriologic examination of bronchial secretions were negative. Transthoracic echocardiogram showed prolapse of posterior cusp (flail/perforation), leading to major aortic insufficiency. We can conclude that this patient had severe aortic insufficiency, possibly after undiagnosed endocarditis. He was transferred to the Cardiology Department, where he was started on empiric antibiotics. Due to rapid deterioration the patient was submitted to heart surgery with implantation of a mechanical aortic valve. Five months after the procedure the patient is asymptomatic.
Discussion: These two cases clearly demonstrate the importance of a holistic approach of the patient. Indeed, TB continues to imitate several different diseases. That said, in a hospital with a high TB prevalence, straight-forward diagnosis could be challenging.

Keywords: *Tuberculosis. Cardiac Disease.*

PO 082. OCULAR TUBERCULOSIS: A CASE REPORT

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Introduction: Tuberculosis (TB), a multisystem infectious disease, primarily affects the lungs and causes significant morbidity and mortality worldwide. TB, how-ever, may affect other organs, including the eye. Ocular TB is a rare entity, with an incidence of approximately 1%, and its impact is not yet well known.
Case report: The authors present the case of a 55-year-old male, former-smoker, with irrelevant personal background, referenced to the Torres Vedras's Pneumologic Diagnostic Center by Ophthalmology for ocular TB screening in a patient with complaints of foreign body sensation, decreased visual acuity and single corneal lesion. The tuberculin sensitivity test was positive (28 mm), such as γ-interferon detection test. Chest X-ray showed no significant changes, such as chest CT scan. In this context, it was decided to start therapeutic proof with the 2 HRZE/7 HR, which the patient completed, with a favorable clinical outcome. In a case of ocular TB, any structure of the visual system can be compromised, being the most common presentations chronic anterior uveitis, choroiditis and sclerokeratitis. In most patients, a history of previous pulmonary or systemic lesion can´t be found, and up to 50% have a normal chest X-ray. Interstitial keratitis, admitted in the presented case, is usually unilateral and characterized by a peripheral stromal infiltrate with vascularization, caused by a hipersensitivity reaction to the mycobacterial proteins. The diagnosis is usually presumptive and corroborated by laboratory tests such as positive tuberculin skin test or IFN-gamma release assays, or radiographic evidence on chest X-ray or PET/computer-assisted tomography. Definitive diagnosis by histopathological demonstration of mycobacteria is extremely rare, although PCR is increasingly being performed on intraocular samples. Antitubercular therapy effectively reduces the rate of recurrence of inflammation when administered in a timely manner.

Keywords: *Ocular tuberculosis. Cornea. Keratitis.*

PO 083. ASSESSMENT OF THE SEVERITY OF NON-CYSTIC FIBROSIS BRONCHIECTASIS (NCFB): THE FACED SCORE VS BRONCHIECTASIS SEVERITY INDEX (BSI)

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Introduction: Non-cystic fibrosis bronchiectasis (NCFB) is a multidimensional and etiologically diverse disease and, therefore, no single parameter can be used to determine its overall severity and prognosis. In this regard, two different validated scores are currently used for such assessment: the FACED score and the Bronchiectasis Severity Index (BSI).
Objective: To describe the etiology of NCFB and to compare the results of the assessment of NCFB severity and prognosis obtained via FACED and BSI scores.
Methods: A retrospective study including NCFB patients from a sample of patients attending the "Functional Breathing Re-adaptation" appointment at the Pneumology B Unit (CHUC). All patients underwent evaluation of the variables incorporated in the FACED score (FEV1% predicted, age, chronic colonization by Pseudomonas aeruginosa, radiological extent of the disease and dyspnea) and in the BSI (age, body mass index, FEV1% predicted, hospitalization and exacerbations in previous year, dyspnea, chronic colonization by Pseudomonas aeruginosa and other microorganisms and radiological extent of the disease). Patients with active malignancies, cystic fibrosis, active mycobacterial infection, HIV, pulmonary fibrosis/sarcoidosis, secondary bronchiectasis or those undergoing antibiotic therapy previous to the study were excluded.
Results: The sample included 31 patients (19 females and 12 males aged 39 to 87 years). Regarding the etiology, most NCFB analyzed were idiopathic (61.3%), whereas 16.1% were sequelae of tuberculosis, 12.9% post-infectious and 9.7% related with primary immunodeficiency. According to the derived FACED score for severity and prognosis of NCFB we found 16 patients (51.6%) with mild bronchiectasis, 10 patients (32.3%) with moderate bronchiectasis and 5 patients (16.1%) with severe bronchiectasis. The mean derived FACED score was 2.6 ± 1.5. Regarding the derived BSI score, the frequency of patients with low, intermediate and high BSI score was 10 (32.3%), 10 (32.3%) and 11 (35.2%), respectively, with a mean derived BSI score of 7.8 ± 4.8. Moreover, we observed a moderate but statistically significant association between FACED and BSI scores (Fisher's exact test, $p = 0.047$), which is due to the fact that 56.2% of the NCFB patients classified as mild on the FCED score were classified as mild BSI, 25% as intermediate BSI and 18.8% as high BSI.
Conclusions: Our results show that patients with NCFB generally obtain higher BSI scores, when compared to FACED, which can be justified by the fact that BSI scores differently parameters such as age, dyspnea and FEV1% predicted. Moreover, BSI (and not FACED) evaluates parameters including BMI, hospitalization and exacerbations in previous year, chronic colonization by other microorganisms and development of cystic bronchiectasis. Further studies should address how these scores may impact clinical practice.

Keywords: *Bronchiectasis. Prognosis. Severity. FACED. BSI.*

PO 084. ASSESSMENT OF THE SEVERITY OF NON-CYSTIC FIBROSIS BRONCHIECTASIS (NCFB): THE FACED SCORE

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Introduction: Non-cystic fibrosis bronchiectasis (NCFB) is a chronic respiratory disease, characterized by abnormal and irreversible dilation of the airways. Due to the multidimensional and etiologically diverse nature of this disease, no single parameter can be used to determine its overall severity and prognosis. Being one of the two different validated scores in use for the assessment of NCFB severity and prognosis, the FACED score evaluates five parameters: functional (FEV1% predicted), physiological (age), micro-biological (chronic colonization by Pseudomonas aeruginosa), radiological (number of pulmonary lobes affected by NCFB) and clinical (dyspnea, which is evaluated by the mMRC scale). By assessing these 5 parameters, the FACED score determines the probability of mortality in a 5-year follow-up, independently of the NCFB etiology.
Objective: To evaluate the severity and prognosis of NCFB through the FACED score and investigate the possibility of a statistically significant correlation between the parameters covered by the FACED score and the severity of NCFB.
Methods: A retrospective study including NCFB patients from a sample of patients attending the "Functional Breathing Re-adaptation" appointment at the Pneumology B Unit (CHUC). All patients underwent evaluation of the variables incorporated in the FACED score. Statistical analysis was per-formed using Microsoft Excel® and IBM SPSS® M software.
Results: The sample included 39 patients (24 females and 15 males aged 37 to 87 years). A statistically significant difference was observed between age and FEV1% predicted of the patients and the NCFB severity (One-way ANOVA, p = 0.003 and Kruskal Wallis test, p = 0.014, respectively). Furthermore, no significant differences were found between chronic colonization by Pseudomonas aeruginosa, radiological extension of the NCFB, dyspnea and the severity of NCFB (Kruskal Wallis test, p = 0.257, p = 0.141, p = 0.057, respectively). Indeed, in this study, patients with Pseudomonas aeruginosa, extensive radiological evidence of NCFB and higher degree of dyspnea did not show more severe FACED-scored NCFB.
Conclusions: In this study, and in accordance with the available literature, it is shown that age and FEV1% predicted are the FACED parameters with the highest score for prediction of mortality.

Keywords: *Bronchiectasis. Prognosis. Severity. FACED. Age. FEV 1% predicted.*

PO 085. INFECTED BRONCHIECTASIS: MICROBIOLOGICAL CHARACTERIZATION OF A SAMPLE

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Introduction: Bronchiectasis is a bronchial distortion characterized by irreversible dilatation and thickening of the bronchial walls. It is manifested clinically by productive cough of purulent sputum, occasionally blood-tinged sputum and hemoptysis. In exacerbations there is an increased amount and purulence of the sputum, associated with fever, dyspnea and constitutional symptoms. The impaired mucociliary clearance, chronic infection, bronchial inflammation and progressive lung injury, occurring in a vicious cycle. During exacerbations, prompt antibiotic therapy is a priority to control the infection, preferably directed to the most frequently identified microorganisms.
Objective: Identify which microorganisms are most often responsible for infectious exacerbations in bronchiectasis.
Methods: Retrospective study including patients admitted for infected bronchiectasis, within one year, in the Pneumology Department. Clinical records were reviewed, with assessment of the following variables: gender, age, length of hospitalization, respiratory comorbidities, destination after discharge, identified microorganism and antibiotic sensitivity.
Results: 64 hospitalizations for infected bronchiectasis in the period from 1st July 2014 to 31st June 2015, corresponding to 44 patients. The average age was 71.5 years, 68% (n = 30) female and 32% (n = 14) male. The aver-age length of hospital stay was 12 days. Respiratory comorbidities were found in 66% of patients (n = 29). Of these, 20.4% (n = 9) had a diagnosis of asthma, 29.5% (n = 13) COPD, 9.1% (n = 4) emphysema, 4.5% (n = 2), sarcoidosis and 2.3% (n = 1) silicosis. Of the 64 admissions, there were 5 deaths (7.8%), 1 transfer to the Intensive Care Unit, two referrrals to the Pulmonology Diagnostic Center (CDP) and 56 discharges, followed up at the Pneumology outpatient clinic. Microbiological studies of sputum culture were negative in 8 cases (12.5%) and polymicrobial in 22 cases (34%). The most frequently identified microorganism was Pseudomonas aeruginosa (n = 16, 25%), followed by Staphylococcus aureus (n = 5, 8%). Other identified microorganisms were Haemophilus influenzae (n = 2), Acinetobacter baumannii (n = 2), Aspergillus fumigatus (n = 1), Candida albicans (n = 1), Enterobacter cloacae (n = 1), Stenotrophomonas maltophilia (n = 2), Mycobacterium tuberculosis (n = 1), Mycobacterium avium (n = 1) and M. gordonae (n = 1). Antibiotic Sensitivity Testing (AST) for Pseudomonas aeruginosa showed that all microorganisms were sensitive to a third generation cephalosporin (ceftazidime), gentamicin and amikacin. 75% (n = 12) had susceptibility to piperacillin/tazobactam and tobramycin. Only 37.5% (n = 6) had sensitivity to levofloxacin and 50% (n = 8) to ciprofloxacin.
Conclusions: The authors present this study to emphasize the importance of microbiological identification in the cases of infected bronchiectasis, for effective treatment and prevention of resistance. At the onset, while still waiting for the microbiological results, broad spectrum antibiotic therapy that covers the most frequent agents found in patients with bronchiectasis, should be started.

Keywords: *Bronchiectasis. Infected bronchiectasis. Microbiological identification.*

PO 086. TUBERCULOSIS – A RARE PRESENTATION

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Introduction: In the past, tuberculosis was considered the principal cause of secondary spontaneous pneumothorax. However, it is now recognised as a very rare complication of active pulmonary infection, with an incidence of 0,6% to 1,4%. During active infection, pneumothorax is caused by caseous necrosis with bronchopleural fistula or a cavity opening to the pleural space, which could also cause tuberculous empyema, which is a rare form of tuberculous pleuritis, especially in immunocompetent people. It is confirmed by the presence of bacilli in pleural fluid. Diagnosis is easily established clinically and bacteriologically. Most early cases can be cured by anti-tuberculosis regimen and thoracic drainage. However, patients with chronic empyema often require surgery after medical treatment.
Case report: We report a case of a young woman with active tuberculosis who developed both these unusual complications. The patient was 25-year old female with no known relevant medical

history. She had contacted with two cases of tuberculosis 1 year before. The patient was admitted with dry cough, fever (> 39 ºC), dyspnea, myalgias, asthenia and anorexia in the course of one month associated with increased shortness of breath and intense pleuritic pain on the right side, just a few hours before the admission on ED. Physical examination revealed fever (40ºC), shortness of breath and absent breath sounds on the right hemithorax. Laboratory findings were haemoglobin 13.2 g/dL; leukocytes 11,540/µL (87% neutrophils); C-reactive protein 20.8 mg/L, with no others abnormalities. The chest X-ray showed a right pneumothorax with pleural effusion. A chest tube was inserted and a purulent fluid was removed and found to contain a high proportion of lymphocytes (43% of 1,420/µL leukocytes), LDH 8,486 µ/L, proteins 2.6 g/dL, glucose < 1 mg/dL and AFB+. A culture of the pleural fluid was positive for *M tuberculosis*. Cultures of blood and sputum were negative. A computed tomography (CT) scan on admission confirmed the hidropneumothorax with a irregular cavitation of the right lower lobe, multiple bilateral nodules and enlargement of mediastinial lymph nodes. Patient was started on a four drug anti-tuberculous regimen (HRZE) and was submitted to VATS debridement. The patient was discharged 2 months after admission, asymptomatic and the pleural fluid was negative for micobacteria. One year after, the follow-up CT scan revealed atelectasis of the right lower lobe, loculated pleural effusion and pleural thickening, therefore the patient was submitted to surgery (lung decortication plus wedge resection of RLL). Surgical management has become a mandatory treatment for patients with tuberculous empyema: it helps diagnose the disease condition, recover from the infection, allow the affected lung to re-expand, and prevent subsequent chronic respiratory impairments.

Keywords: *Tuberculosis. Empyema. Pneumothorax.*

PO 087. RARE BUT IT HAPPENS... SWEET SYNDROME

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Introduction: Sweet's syndrome (SS), also known as acute febrile neutrophilic dermatosis, is a rare disease, first described in 1964 by Robert Douglas Sweet. It is characterized by the appearance of skin lesions in the form of painful erythematous plaques and nodules, in a clinical context of fever, arthralgia, myalgia, headache and peripheral leukocytosis. Systemic involvement may be present and pulmonary involvement, although rare, has been described as bilateral pulmonary infiltrates, bronchiolitis obliterans and pleural effusion. Depending on the association with other diseases, SS can be classified into three subtypes: classical or idiopathic, associated with malignancy or drug-induced. Its pathogenesis remains unclear but is thought to result from a hypersensitivity reaction to a tumor antigen, bacteria or a viral infection.
Case report: 51 year-old Caucasian male, without previous disease or medication. There was no relevant epidemiological history. He was observed in the ER with fever of sudden, myalgia, arthralgia and two days later, vesicular skin lesions and small bubbles, non-pruritic, reaching the anterior thighs, trunk, upper limbs and neck. Blood samples revealed leukocytosis (12,700) with neutrophilia (84.4%), elevated C-reactive protein (CRP) - 25 mg/dl, increased sedimentation rate (SR) - 35 mm/h. Chest X-ray and CT showed multiple fine alveolar infiltrates in both lungs, more confluent in the anterior segment of the left upper lobe and posterior segment of the left lower lobe. Enlarged mediastinal-hilar lymph nodes were noted. The patient was admitted with a diagnosis of pneumonia. Antibiotic therapy was started with ceftriaxone and azithromycin, without clinical analytic (rise of leukocytosis/neutrophilia, SR and CRP) or radiological improvement (worsening of the pulmonary infiltrates). In this context meropenem and linezolid were initiated. The skin lesions were biopsied. Abdominal-pelvic ultra-sound and echocardiography with Doppler were unremarkable. Tuberculin test was negative. Bacteriological exams (three blood cultures, urine culture) were negative. Infectious serology, including (HIV) were negative, as well as fungi, parasites or viruses. Autoimmunity was unremarkable. Flexible bronchoscopy showed a friable and hyperemic airway mucosa with scarce foamy secretions. The results of bacteriological, mycobacteriological, mycological and Pneumocystis examination in bronchoalveolar lavage (BAL) were negative. The research of neoplastic cells was also negative. Due to clinical, laboratory and radiological worsening the patients started systemic corticosteroids with rapid improvement. The skin biopsy showed a neutrophilic dermatosis compatible with Sweet syndrome, with extra-cutaneous manifestations.
Discussion: The diagnostic approach was a real challenge in the present clinical case. The patient met two major criteria (skin lesions and histological characteristics) and three minor criteria (fever > 38 ºC, good response to corticosteroids and laboratory findings: VS > 20 mm/h, high CRP, leukocytosis with neutrophilia) for the diagnosis of SS. The recommended treatment is corticosteroids which quickly induces disease remission.

Keywords: *Sweet syndrome. Acute febrile neutrophilic dermatosis. Pulmonary infiltrates.*

PO 088. COMMON VARIABLE IMMUNODEFICIENCY – ABOUT A CASE REPORT

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Introduction: Common variable immunodeficiency (CVID) is the most common primary immunodeficiency after IgA deficiency with an estimated pre-valence of 1:25,000-100,000, higher in northern Europe. It is characterized by hypogammaglobulinaemia, lack of B lymphocytes or plasma cells that are capable of producing antibodies, recurrent bacterial infections and increased incidence of associated diseases, including autoimmune, granulomatous and neoplasic diseases, including most importantly lymphoproliferative pathology. The purpose of this paper is to report a particular case of CVID and alert for the differential diagnosis of pathological processes associated with recurrent infections.
Case report: We report the case of a 49-year-old female patient, with a history of recurrent infections of the upper and lower airways with seven years, which prompted recurrent hospital admissions and antibiotics. Additionally she had a history of symptomatic *Mycobacterium gordonae* pulmonary infection previously treated. She had no relevant family history. The etiological investigation, documented up lymphopenia and severe hypogammaglobulinaemia with IgA, IgM and IgG assays below the minimum reference values. Negative viral serologies, including the human immunodeficiency virus. We proceeded to study the type of immune deficiency using specific examination for lymphocyte population that once completed revealed the diagnosis of common variable immunodeficiency congenital. A thoracic computed tomography revealed no bronchiectasis. She was proposed to initiate treatment with intravenous immunoglobulin: 400 mg/kg for 4/4 weeks associated with respiratory physiotherapy and antibiotics during episodes of infection. Additionally, will be performed the monitoring of the onset of other associated diseases.
Discussion: CVID is a primary humoral immunodeficiency type, whose diagnosis requires the implementation of a specific and complex immunological study to allow the differential diagnosis with other primary humoral type immunodeficiencies. Patients present with humoral immunodeficiency reduction of serum IgA and IgG and IgM in 50% of cases. Some cases have associated cellular immunodeficiency. CVID can become evident at any time from

infancy to after the fourth decade of life. Peaks of onset occur in children aged 1-5 years and in persons aged 16-20 years. Thus, this entity should be equated as a diagnosis in a patient with a history of recurrent infections in the absence of other alternatives underlying causes of recurrent infections or secondary immunodeficiency documentation. The main clinical manifestations are sinopulmonary bacterial infections and recur-rent ear infections associated with the appearance of bronchiectasis, chronic diarrhea, malabsorption syndrome and less frequently arthritis, osteomyelitis, meningitis and encephalitis. When there is cellular immunodeficiency, opportunistic infections arise due to *Pneumocystis carinii*, fungi, mycobacteria and viruses. The diagnosis of this entity is crucial as it enables the start of directed therapy such as parenteral administration of immunoglobulins. Poor prognostic factors are related to the presence of chronic lung disease, bronchiectasis, autoimmune diseases, cellular immunodeficiency and neoplasic diseases. The expected survival 20 years after diagnosis is less than that of the general population (64% for males and 67% for females).

***Keywords**: Common variable immunodeficiency.*

PO 089. CPAP FOR HEPATIC HYDROTHORAX CONTROL

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Introduction: The hepatic hydrothorax (HH) occurs in 5 to 15% of cases of chronic liver disease (CLD), with symptoms that may add a significant impact on the patients' quality of life. The most accepted physiological mechanism by the scientific community relies on the existence of transdiafragmathic communication that allow the passage of ascites into the pleural space, movement further promoted by the differential pressure resulting from the respiratory movements. In cases in which liver transplantation is contraindicated, symptomatic treatment of HH becomes challenging, as demonstrated by the high levels of *recurrence rate to the usual* procedures. The authors present two cases in which a *continuous positive airway pres-sure* (CPAP) was used to try to reduce the volume of HH and achieve some symptomatic relief.
Case reports: Case 1: female, 70 year old, with CLD from primary biliary cirrhosis, Child-Pugh C, no indication for TIPS or transplant, repeatedly hospitalized for dyspnea in context of HH refractory to optimized diuretic therapy and therapeutic thoracenteses. Semiology of extensive right pleural effusion, arterial blood gases (ABG) with partial respiratory failure - O2 15L/min - aPO2: 47.9 mmHg; aPCO2: 42.9 mmHg; O2Sat: 79.4%; and chest radiograph with homogeneous hypotransparency throughout the entire right pulmonary field. In an attempt to prevent the recurrence of hydrothorax, CPAP was initiated after new thoracentesis - 1,000 cc of pleural fluid - with clinical, laboratory and imaging improvement - ABG under CPAP 6+ O2 15 L/min - aPO2: 69.9 mmHg; aPCO2: 42.1 mmHg; O2Sat: 94.4%. The patient ended up dying 40 days later in the sequence of her advanced hepatic disease. Case 2: male, 60 year old, with CLD from primary sclerosing cholangitis, with multiple admissions for hepatic encephalopathy. Presents with an ascitis difficult to control because he doesn't tolerate diuretic therapy. Sent to Pneumology consultation because of progressive worsening dyspnea in the last month, grade 3-4 on the modified scale of the Medical Research Council (mMRC) when evaluated. Semiology of pleural effusion in the lower half of the right pulmonary field. ABG on room air - aPO2: 73.5 mmHg; aPCO2: 36.8 mmHg; O2Sat: 95.7%; chest radiograph with homogeneous hypotransparency in the lower two thirds of the right pulmonary field. Since the inability to optimize diuretic therapy, it was decided to start CPAP to control HH. Two months later, at the last reassessment, the patient is well adapted to the therapy, with significant improvement in dyspnea, grade 1 mMRC, and reduction of the pleural effusion.
Discussion: CPAP may reverse the mechanism implicated in the formation of HH, emerging as an alternative therapeutic modality in selective cases of HH refractory to conventional therapy.

***Keywords**: Hepatic hydrothorax. CPAP. Chronic liver disease.*

PO 090. CYSTIC FIBROSIS: WHEN THE LUNG IS NOT THE ONLY ORGAN IN NEED FOR A TRANSPLANT

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Cystic fibrosis is the most frequent recessive autosomal disease in Caucasians. It is a chronic systemic disease with multiple clinical manifestations and variable severity. We present the clinical case of a young male that exemplifies the multissystemic severe implications of the disease, having pulmonary and major hepatic involvement with portal hypertension that will probably implicate both a pulmonary and hepatic transplant. 17 year old adolescent, with diagnosis of cystic fibrosis since three months old, homozigotic for the deletion F 508, traduced by respiratory and gastrointestinal phenotype. From a respiratory point of view he has chronic sinusitis, bronchoectasis, chronic bronchorrhea and several respiratory exacerbations with need for inward treatment. In the bronchial secretions he has chronic colonization with *Pseudomonas aeruginosa* as well as several isolates of *Aspergillus fumigates* in the past years and 1 isolate of *Mycobacterium abcessus* in 2015. The respiratory function shows an obstructive pattern with progressive decline of FEV1 mostly in the last year (Last evaluation – FEV 1 57.6%). The thoracic TC shows discret to moderate pulmonary hyperinflation, multiple bilateral diffuse bronchoectasis, diffuse thickening of the bronchial wall along with bronchial and bronchiolar mucus impactation. In the gastrointestinal system he as pancreatic insufficiency and since 2005 also hepatic insufficiency with ecographic diagnosis of cirrhosis since 2006 complicated with portal hypertension and esophageal varices, with 3 prophylactic variceal ligation (the last in 2012). It is a high nutritional risk patient, with a BMI of 18.9 (P15) and difficulty in gaining weight having therefore a hypercaloric diet and regular nutritional monitoring. Despite all this comorbidities he as an active social life, good scholar outcome and engages in sport practice. Presently he has been attending an outpatient clinic in order to arrange the pulmonary and hepatic transplant. Whether the transplant should be concomitant or sequential and in what order is still to debate.

***Keywords**: Cystic fibrosis. Transplant. Adolescent.*

PO 091. THE ROLE OF D-DIMERS IN THE DIAGNOSIS OF PTE

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Introduction: D-dimers are widely used in the evaluation of patients suspected of pulmonary thromboembolism (PTE.). The initial diagnosis appears based on the clinical history of the patient, with resource to complementary diagnostic exams (CDE), such as ECG, chest X-ray and arterial blood gases (ABG). D-dimers allow us to exclude PTE in a significant percentage of patients with low to intermediate clinical probability, avoiding the unnecessary use of computed tomographic (CT) angiography.

Objective: Evaluate the use of D-dimers in the emergency room (ER) on patients with suspected cases of PTE in CHUC-HG.
Methods: Retrospective study based in the review of clinical files of the patients attending the ER between November and December 2014, to whom D-dimers were measured, towards a suspicion of PTE. Clinical data, demographic data, ECG results and final diagnosis were taken into consideration.
Results: D-dimers were used in 231 patients in the ER, of which 55.4% were female and with an age average of 66.4 years. 83.1% of the patients presented at least one risk factor for PTE, while 10.8% presented a major risk factor. Of these major risk factors, the clinical history of previous PTE/DVT stands out (4.3%). The most commonly symptoms were dyspnea (35.5%), retrosternal pain (30.8%), cough (19.7%), pleuritic pain (16.7%) and syncope (12.6%). 11.7% of patients didn't present typical symptoms of PTE. 2.6% (six patients) didn't present neither risk factors nor typical symptomatology. 90.9% undertook an ECG (63% presented alterations, most common one being auricular fibrillation), 90.5% undertook a chest X-ray (70.3% presented alterations, the most frequent one being pulmonary consolidation non-typical of pulmonary ischemia), 48.9% undertook a ABG (69% presented alterations, the most common one being hypocapnia; 5.3% also presented a parallel hypoxemia). On Well's score, 98.7% of patients (228/231) showed a low to intermediate clinical probability of PTE; D-dimers excluded the disease in 56.1% (128/228). Of the remaining 41.7% patients (95/228) with elevated D-dimer values, only 23.2% (22/95) undertook a CT, which confirmed PTE in 40,9% (9/22). Patients with high values of D-dimer that didn't undertook a CT, had an alternative diagnosis based on other CDE, mostly pathologies of the cardiac (28.1%) and respiratory (27%) systems. Of the 1.3% of patients with high clinical probability, all showed positive D-dimer values and only one patient undertook a CT, which confirmed PTE.
Conclusions: D-dimers were used in the ER in patients with a possible PTE diagnosis, based on risk factors or suggestive symptoms. D-dimers were adequately used and requested for patients with low to intermediate clinical probability, excluding PTE in about half of the cases and eliminating the need for CT. In a significant percentage of patients with high levels of D-dimer, the CDE were important to eliminate other diseases, allowing an alternative diagnosis. Only a small percentage of the total patients under-took a CT and only in a small minority was the initial diagnosis hypothesis confirmed.

Keywords: *D-dimers. Pulmonary thromboembolism. Computed tomographic angiography.*

PO 092. CHARACTERIZATION OF PULMONARY INVOLVEMENT OF PATIENTS WITH NOONAN SYNDROME FOLLOWED AT SANTA MARTA HOSPITAL

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Introduction: Noonan syndrome is an autosomal dominant disorder, with an incidence between 1:1,000 and 1: 2,500 births. The diagnosis of this syndrome is clinical and is characterized by short stature, typical facial dys-morphology and congenital cardiac anomalies. Chest deformities and dysplasia of lymphatic vessels are also described as prevalent in the literature, which determine the formation of spontaneous chylothorax or secondary to cardiothoracic surgery.
Objective: Characterization of pulmonary involvement of patients with Noonan Syndrome followed in Pulmonology and Cardiology Consults on Santa Marta Hospital.
Methods: A retrospective analysis of medical records of patients, including assessment of demographics, radiological and lung function tests.
Results: 20 patients were enrolled with a diagnosis of Noonan syndrome,55% female and 45% male with an average age of 41.44 years. Of these, 85% had congenital heart disease, 40% chest deformaties (kyphoscoliosis/pectus excavatum and carinatum), and 10% history of chylothorax. Of the eight patients suffering from chest deformities, most developed respiratory clinic that led to performing lung function tests which revealed restrictive ventilatory compromise. It highlights the case of a patient who has severe kyphoscoliosis that determines global respiratory failure requiring nocturnal noninvasive ventilation. For both patients with a history of chylothorax, one case was spontaneous and the other was secondary to surgical correction of the cardiac anomaly.
Conclusions: In this sample, it was found that cardiac malformations are the most common abnormalities. However, a significant percentage of patients also presents a lung disease which can cause pulmonary complications, particularly restrictive syndrome. These findings increase the importance of pulmonology approach in patients with Noonan Syndrome.

Keywords: *Noonan syndrome. Pulmonary involvement.*

PO 093. STUDY OF MORTALITY IN A PNEUMOLOGY WARD

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Introduction: Portugal has witnessed a worrying increase in the number of hospitalizations and deaths from respiratory diseases. The Observatório Nacional das Doenças Respiratórias report refers, for example, that in the last 16 years, there was an increase in mortality from pneumonia and cancer of the respiratory tract of about 50 and 30%, respectively. Smoking habits and comorbidities play a leading role in this scenario, with the winter months being the ones with higher mortality.
Objective: Statistical analysis of deaths occurred in the ward (consisting of 21 beds) of the Pneumology of Hospital Prof. Doutor Fernando Fonseca, EPE (HFF) from January 2013 to March 2015, with particular focus on the period between January and March of 2013, 2014 and 2015.
Methods: Observational, retrospective and descriptive study of the deaths occurred in the in the ward of the Pneumology of HFF from January 2013 to March 2015. Statistical analysis was performed using Microsoft Excel 2013® program.
Results: The total number of deaths in the period from January 2013 to March 2015 was 114, of which 41 (36%) occurred in 2013, 54 (47%) in 2014 and 19 (17%) in the first three months of 2015. Mean length of hospital stay was 25 days (19 in 2013; 26 in 2014 and 37 in 2015). The average age of hospitalized patients was 73 years, with 77% (n = 88) of the deaths occurring in patients aged 65 or more (2013: 55%; 2014: 75%; 2015: 79%). Mortality was significantly higher in males (72%; n = 82). By analyzing, in detail, timeline from January to March of 2013, 2014 and 2015 we can see that in this period there were 42 deaths (2013: 11- 27% of the total of the year; 2014: 12- 22% of the total of the year, 2015: 19). 38% (n = 16) of the deaths occurred in patients with stage IV lung cancer and 10% (n = 4) with metastatic neoplasia to the lung. Pneumonia remained the leading cause of death, being one of the causes of death in 60% of cases (n = 25). Death from pneumonia, as a complication during hospitalization, occurred in 19% (n = 8) of the cases. 24% of patients (n = 10) had a history of COPD and 29% (n = 12) did domiciliary oxygen therapy previously. A total of 27 patients (64%) were smokers or former smokers (average pack-years: 63), and 88% (n = 14) of patients with cancer had smoking habits (average pack-years: 68).
Conclusions: This study reinforces the trend in recent years, with an increase in mortality from 2013 to 2015, occurring, mainly, in elderly patients and males. It also shows the burden of oncologic

pathology and pneumonia in total mortality and the importance of co-morbidities and smoking habits.

Keywords: *Mortality. Hospitalization. Pneumonia. Neoplasia. Co-morbidities. Smoking habits.*

PO 094. CHRONIC KIDNEY DISEASE IN PATIENTS SUBMITTED TO LUNG TRANSPLANT

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Introduction: Lung transplant (LTx) is a well-established therapeutic option for patients with end-stage lung disease. However, medical complications after transplantation, such as renal dysfunction, continue to cause significant morbidity and mortality. Studies have demonstrated a natural decline in renal function among lung transplant recipients over time. The 2011 United Network for Organ Sharing (UNOS) annual data report noted a 47.4% 5-year incidence of renal dysfunction after LTx. Calcineurin inhibitors, with known nephrotoxicity, are a major contributor to the establishment of chronic kidney disease, but there are other causes.
Objective: Evaluate the incidence and prevalence of chronic kidney disease (CKD) in a population of patients submitted to lung transplant at our Centre.
Methods: Retrospective study of 101 patients submitted to lung transplant between January/2008 and June/2015. We excluded the patients who were not discharged after lung transplant. CKD was defined, according to the guidelines of National Kidney Foundation, as glomerular filtration rate (GFR) < 60 ml/min/1.73 m^2 for more than 3 months, with or without renal damage. We compared demographic and clinical variables using the chi-square test or the Fisher's exact test for categorical variables and the Student's t-test for continuous variables.
Results: From 101 patients who underwent LTx, we included 89 patients in this study; 58.43% men (n = 52), with mean age (SD) 45.06 (13.94) years. The most common diagnosis were chronic obstructive pulmonary disease (n = 18), extrinsic allergic alveolitis (n = 17), cystic fibrosis (n = 16), and idiopathic pulmonary fibrosis (IPF) (n = 11). Among them 49% (n = 44) developed CKD. The mean age (SD) was significantly higher in the group of patients who developed CKD [48.30 (13.57) vs 41.89 (13.71)] (p < 0.05). The inci-dence rate of CKD after one year, 2 to 3 years and more than 3 years of LTx was 38.20%, 12.50% and 12.50%, respectively. The prevalence of CKD in the same periods was 38.20%, 40.28% and 40.00%, respectively. There was no relationship between CKD and mortality in this population.
Conclusions: CKD is an important complication after LTx. The incidence rate is higher in the first year after LTx. Older patients are more likely to develop CKD. In contrast with other studies, there was no relationship between CKD and mortality in our population.

Keywords: *Lung transplant. Chronic kidney disease.*

PO 095. VALUE OF ADENOSINE DEAMINASE (ADA) IN THE DIAGNOSIS PLEURAL EFFUSION TUBERCULOSIS VS NON TUBERCULOSIS

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Introduction: The pleural tuberculosis is one of the most common causes of pleural effusion. The differential diagnosis of tuberculosis pleural effusion of non-tuberculosis is difficult. Conventional methods do not always make the diagnosis. The ADA is used as an auxiliary method in the diagnosis of pleural tuberculosis.
Objective: To assessing the value of ADA in tuberculosis pleural effusion and itscorrelation with other biochemical parameters of pleural effusion.
Methods: A retrospective descriptive study, where 85 patients with pleural effusion were followed at the Hospital Day Care of Pneumology in the period between the year 2005-2014. Data collection was performed through the records of consultation of medical records. Patients were divided into four groups: tuberculosis pleural effusion (DTP), pleural effusion not tuberculosis (DNTP), malignant pleural effusion (DPN) and pleural effusion of unknown etiology. Statistical analysis was per-formed using the correlation method of Pearson and nonparametric-test.
Results: Of the 85 patients studied, 30 were female and 55 were male, with an average of age group between 61-70 years. According to Light criteria, 59 patients were classified as having exudative pleural effusion, these 8.4% had tuberculous pleural effusion, 40.6% patients had malignant pleural effusion and 38.9% had uncertain etiology. It was found that 80% of the patient (DTP) had higher value of ADA 50 U/L when compared with malignant pleural effusion. There was a positive correlation (p > 0.05) between the values of the ADA with other biochemical parameters of pleural fluid although these were not statistically significant.
Conclusions: Although the number of cases of TPD was not statistically significant, there was a significant increase in the ADA value in patients with tuberculosis pleural effusion, which data are in agreement with the results obtained in the literature.

Keywords: *Pleural effusion. Pleural tuberculosis. Adenosin deaminase.*

PO 096. PLEURAL EFFUSION, PNEUMOTHORAX AND PNEUMOMEDIASTINUM AS INITIAL SYMPTOMS OF ABDOMINAL PATHOLOGY – 2 CLINICAL CASES

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Introduction: Pleural disease is a common manifestation of multiple thoracic and/or extra-thoracic diseases. Early diagnosis is often vital for the correct therapeutic approach.
Case reports: The authors present two clinical cases. The first of a 60-year-old man, ex-smoker 15 pack/years, furniture restorer, hiatus hernioplasty 15 years before. He presented with left pleuritic chest pain of increasing intensity and 2 episodes of vomiting. He was taquypneic, sudoretic, SpO2 98%, lung auscultation with decreased breath sounds in the left base. Blood gas analysis with hypoxemia and hypocapnia. He performed a chest CT angiography due to the initial lung tromboembolism suspicion which showed left hydropneumothorax with pneumomediastinum and esophageal peri esophageal collection in the transition to the abdomen. General surgery evaluated the patient and performed an esophageal transit radiograph that was normal. We performed thoracic drainage with observation of a thick pleural liquid with food content. He underwent emergency laparoscopy that showed a gastric perforation at the site of a previous hernia repair. After the surgery he recovered well. The second case refers to a 91 year old man with a 2 days complaint of dyspnea and productive cough. He had hypotension and decreased breath sounds in the left hemithorax. Blood analysis with leukocytosis and elevated CRP. Blood gas analysis showed hypocapnia. Chest radiography with total left lung hypotransparency suggesting pleural effusion.

Thoracentesis was performed with fetid purulent pleural liquid. Chest drainage and empirical antibiotic therapy was initiated. During hospitalization he developed epigastric pain, dysphagia and vomiting with subcutaneous emphysema. Thoracoabdominal CT couldn't exclude the hypothesis of tracheal perforation and showed a gastric thickening with contiguous abscess. The brochoscopy excluded tracheal perforation. He was evaluated by general surgery and performed esophageal transit – normal. He repeated CT that concluded probable gastric cancer with gastric periloculated abscess and diaphragmatic involvement, pericardial and pleural fistula. Without surgical indication. The patient died during hospitalization despite the established medical measures.
Discussion: These cases illustrate the importance of early detection of extrathoracic disease, such as GI, as a cause of pleural abnormalities that may be the first manifestation of the disease. Failure to recognize the origin of these manifestations may delay and worsen the prognosis.

Keywords: *Pleural effusion. Pneumothorax. Pneumomediastinum. Abdominal pathology.*

PO 097. MORE THAN A PLEURAL EFFUSION – CASE REPORT

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Introduction: Pleural effusion is one the most common and investigated clinical findings with several possible aetiologies. The Boerhaave's syndrome is the spontaneous rupture of the oesophageal wall and usually occurs due to vomiting. This syndrome is a rare cause of pleural effusion and, in order to have a good outcome, early diagnosis and treatment are necessary, as the mortality of untreated Boerhaave's syndrome is very high.
Case report: Female patient, 75 years old, with clinical history of dyslipidaemia, went to the emergency department with complains of sudden chest pain on the left hemithorax, with no irradiation, relief or worsening factors, associated with dyspnoea and generalized discomfort, after a long course flight. The patient didn't have other symptoms or complains, such as cough, sputum, fever, genitourinary or gastro-internal symptoms, such as vomiting. She denied any history of thoracic trauma. During the first clinical evaluation, the patient was pale, not sweaty, with tachypnea but with no other signs of respiratory discomfort. She presented with stable vital signs, with a peripheral oxygen saturation of 85% and tachycardia (120 bpm). Chest auscultation revealed decreased breath sounds on the inferior 1/3 on the left side. No peripheral oedema was present. Blood gas analysis showed a type 1 respiratory failure (PaO_2 55 mmHg). As pulmonary embolism was suspected, a D-dimer analysis was requested (1.89). Plain thorax X-ray showed an obscure costophrenic left angle. The patient underwent a thoracic CT scan that identified the presence of left hydropneumothorax. Thoracic drainage was performed using a chest-tube, and a very dark pleural fluid with what seemed alimentary residues started to exit from the pleural space. Samples were sent to cytology, pathology, biochemistry and search for dietary fibres. Before the suspicion of rupture of oesophageal wall, a thoracic CT scan with oral contrast was performed, which confirmed the presence of an inferior rup-ture of oesophageal wall, left pneumothorax and atelectasis of left lower lobe. The patient underwent emergency surgical repair of the perforation and started antibiotic therapy with piperacillin/tazobactam and anidulafungin to prevent mediastinitis and sepsis. She was admitted in an intensive care unit during 7 days, with good evolution of her clinical status. She then was transferred to the surgical ward to continue treatment. The pathology analysis of the pleural effusion confirmed the presence of dietary contents and no malignant cells were identified. She was discharged 20 days after hospital admission and maintains regular follow up in the outpatient clinic, with good evolution.
Discussion: With this clinical report, the authors pretend to demonstrate the importance of the preparation of a differential diagnosis list and their sequentially exclusion, the importance of the different aetiologies of pleural effusion, even the uncommon ones, and the importance of a rapid clinical approach, diagnosis and treatment in the Boerhaave's syndrome.

Keywords: *Pleural effusion. Rare causes.*

PO 098. SECONDARY BILATERAL PNEUMOTHORAX – THERAPEUTIC APPROACH CHALLENGES

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Introduction: Secondary spontaneous pneumothorax (SSP), due to the coexistent pulmonary disease, can be worse tolerated by patients and spontaneous resolution is less likely. Thoracic drainage may be insufficient in many patients with persistent air leak and thoracic surgery intervention may be needed. We present a case of a bilateral SSP, which was the initial presentation of pulmonary disease and all the interventions were unsuccessful and resolution was achieved with conservative measures.
Case report: Twenty-five year-old man, smoker, with bird exposure, was admitted as an inpatient with hypoxemic respiratory insufficiency and dyspnea for the last 3 months. The chest radiograph and the thoracic CT scan showed diffuse broncovascular interstitial thickening, mainly in the lung upper two thirds, and bilateral apical pneumothorax. Initially, conservative measures were taken, however, after beginning of ambulation, worsening of left pneumothorax, becoming total, and chest tube insertion was performed. Due to the maintenance of the pneumothorax, he was submitted to videothorascopy, in order to perform pleural abrasion, and biopsies were taken. In spite of surgical treatment, patient kept the pneumothorax, which was persistent after drainage and continuous suction. Chest tube accidentally exit the thorax in two different moments. In the second time, conservative measures were chosen, despite the total left pneumothorax, since the patient was clinically stable. There wasn't any clinical, radiographic or gas exchange worsening with the absence of chest drainage, neither with ambulation or the initiation of pulmonary rehabilitation program, therefore he was discharged from the hospital. From the etiological investigation of pulmonary interstitial diseases, the histological conclusion was a fibrosing non specific interstitial pneumonia, probably in the context of hypersensivity pneumonitis. Triple therapy with steroids, N-acetilcysteine and azathioprine was initiated. Owing to therapeutic refractory changes with extensive fibrosis and severe restrictive ventilatory syndrome with 18% desaturation in 6 minute walk test, the patient was referenced to pulmonary transplantation. The bilateral pneumothorax was still present in the first month revaluation after discharge. In the second month, resolution was achieved. Currently, he is doing a pulmonary rehabilitation program and is in the transplant waiting list.
Discussion: This clinical case shows the unpredictable clinical tolerance to bilateral pneumothorax. In the absence of air leak, it could be weighted the conservative treatment and the onset physical activity, without losing a favorable clinical evolution.

Keywords: *Pneumothorax. Secondary spontaneous pneumothorax.*

PO 099. TUNNELED PLEURAL CATHETERS FOR RECURRENT PLEURAL EFFUSION APPROACH – DESCRIPTION OF A CASE SERIES

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Introduction: Tunneled pleural catheter placing is a technique with increasing applicability, mainly useful in recurrent malignant pleural effusion. Malignant pleural effusion is a common complication of malignancy, usually symptomatic and poor prognostic marker, with a median survival of about 3 to 12 months. Therefore, its approach is essentially focused in symptoms palliation.
Objective: Clinical characterization of patients with recurrent pleural effusion undergoing placement of tunneled pleural catheter. Analysis of efficacy and safety profile of this technique.
Methods: We included all patients admitted at Centro Hospitalar de São João within a period of 1 year (July 2014 to July 2015), who underwent tunneled pleural catheter placement in the management of recurrent pleural effusion. A retrospective analysis was performed for clinical characterization of patients, as well as to evaluate the efficacy and complications associated with tunneled pleural catheters.
Results: We included 10 patients with a mean (± SD) age of 66 (± 10) years and 9 (90%) were male. Regarding the underlying neoplasms 5 cases corresponded to lung adenocarcinoma, 2 to renal cell carcinoma, 1 breast neoplasm, 1 colon neoplasm, and 1 hepatocellular carcinoma. Except the patient with hepatocellular carcinoma, all other cases were considered malignant pleural effusions. In terms of performance status assessed by the Eastern Cooperative Oncology Group scale, 50% of Patients punctuated 1, 30% punctuated 3, 20% punctuated 2. 70% of patients were concomitantly followed or initiated follow-up by Palliative Care. Placing tunneled pleural catheter was motivated by symptomatic recurrent pleural effusion with evidence of lung entrapment. In 30% of patients it has been performed a prior attempt to pleurodesis with talc, unsuccessfully. In this cases, the placement of these tunneled catheter was performed on average 37 (± 10) days after the attempted pleurodesis. According to clinical records, a symptomatic improvement occurred in all cases. There were no immediate complications associated with this technique. Regarding late complications, in half of the patients there were no complications, and in the other cases occurred catheter obstruction (n = 1), empyema (n = 1), catheter obstruction with associated empyema (n = 1), accidental displacement of the catheter exteriorization (n = 1), and fluid leakage through the catheter inlet orifice (n = 1). One case of obstruction achieved resolution through mechanical cleaning techniques, with no need of another intrapleural therapy. In the case that, in parallel to the development of obstruction, was also empyema, it was decided later to remove the pleural catheter. During follow-up, 80% patients died, with a median survival after tunneled pleural catheter placement of about 80 days (minimum 22, maximum 253 days).
Conclusions: In this series of cases, the placement of pleural catheters revealed to be a safe, well tolerated and effective technique, providing symptomatic improvement in all patients, without immediate complications and with a reduced number of late complications.

Keywords: *Tunneled pleural catheter. Malignant pleural effusion. Recurrent pleural effusion. Palliation of symptoms.*

PO 100. IDIOPATHIC CHYLOTHORAX? A CASE REPORT

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Introduction: Chylothorax is an unusual diagnosis defined as a pleural effusion, with high triglyceride content, with origin in the leakage of chyle and lymph to the pleural space. It can be traumatic, non-traumatic or idiopathic. A non-re-solving chylothorax leads to the permanent loss of water, electrolyts, proteins (namely immunoglobulins), lymphocyts, lipids and essential vitamins, which can result in malnutrition, hypovolemia and immunossupression.
Case report: The authors describe the case of a 24 years old female, working at a textile factory and a bakery, being followed by an Internal Medicine physician for about a year, for a possible Behçet's disease diagnosis (she had oral and genital ulcers). The patient had family history of Behçet's disease and a brother that had a non-specified reumathologic disease. She was referenced with symptoms of dyspnea and thoracic pain, in the previous 3 months. Initially the patient was observed in an Internal Medicine appointment. After a chest X-ray, pleural effusion was verified, which after analyses was labelled as a chylothorax. There was no history of trauma or B symptoms. In an outpatient regimen, the patient went through a chest-abdominal-pelvis CT, breast, endovaginal and thyroid ultrasounds, peripheral blood immunophenotyping, autoimmune screening and bronchofibroscopy, which all came back negative for underlying diseases. She also went through a lymphoscintigraphy that showed no abnormality in lymph drainage system. The absence of aetiology, after 2 months of investigating, motivated a thoracoscopy with pleural biopsy. The patient was then hospitalized with a chest tube. She initiated diet restriction supplemented with medium chain triglycerides and, posteriorly, total parenteral nutrition (TPN), maintaining a daily drainage of 200-300 ml. After one month, the patient developed fever and the possibility of a complicated pleural effusion was raised, which motivated her transference to a central hospital. Although under TPN, she continued draining 500 ml on a daily basis. Septic screening, evaluation of neck arteries and veins through doppler ultrasound and echocardiogram were done with no abnormalities found. We repeated lymphoscintigraphy, this time around with a chest tube, which came back positive for a lymph leakage posteriorly, superiorly and to the left of the sternum. Considering the lack of resolution with conservative treatment, the patient was then referenced to surgical treatment (thoracic duct ligation), being discharged after 2 weeks, without pleural effusion.
Discussion: The authors chose this case because of the challenge that chylothorax can be, be it in terms of finding the underlying aetiology, or in terms of treatment approach. The very long hospitalization time was the result of the difficult pursuit for the underlying cause, which delayed the surgical treatment in a case of chylothorax refractory to conservative treatment.

Keywords: *Chylothorax. Diagnosis. Management. Surgical treatment. Behçet's disease.*

PO 101. SPONTANEOUS PNEUMOMEDIASTINUM – THE PURPOSE OF TWO CLINICAL CASES-

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Introduction: Pneumomediastinum is defined as the presence of free air in the mediastinum and can be classified into two subtypes: spontaneous pneumomediastinum with no identified cause and secondary pneumomediastinum that has precipitating factor. Spontaneous pneumomediastinum is a rare disease in adults and

most often affects young adults males in a relation to females of 8:1. Spontaneous pneumomediastinum is usually benign, self-limited but recurred in rare cases.
Case reports: The authors describe a case of two young men with spontaneous pneumomediastinum. Case 1: youth male, 16 years old, student, no personal relief background, no-smoking history, Kick-Boxing practitioner who appealed to the emergency department with chest pain of retrosternal location with pleuritic characteristics of sudden appearance at rest. The objective examination found himself eupneic at rest with peripheral oxygen saturation at 98% at air environment without other changes in physical examination. The patient held radiography and computed tomography (CT) of the chest that showed small pneumomediastinum around the trachea and esophagus, extending only to infrastructure carinal region. He was discharged after clinical exclusion of secondary causes, indicated for rest and maintain analgesia getting surveillance in Pulmonary consultation. Case 2: young male, 19 years old, crew ambulances, occasional smoker, with no relevant medical history that appealed to the emergency department with central chest pain with pleuritic characteristics associated with dyspnea. The objective examination showed cervical subcutaneous emphysema without any other changes. Held radiography and chest CT which showed the presence of pneumomediastinum and emphysema that dissected the lower cervical plans. The patient was admitted to the Pulmonary Department for 4 days where he had rest, oxygen therapy and symptomatic relief.
Discussion: Spontaneous pneumomediastinum is a differential diagnosis of chest pain considering especially in young males, often introducing himself only with chest pain without changes in physical examination. The diagnosis on chest radiography can be difficult.

Keywords: *Spontaneous pneumomediastinum. Chest pain. Subcutaneous emphysema.*

PO 102. CYSTIC FIBROSIS IN AN AFRODESCENDANT PATIENT - CLINICAL CASE

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Hospital Garcia de Orta.

Introduction: Cystic fibrosis (CF) is rare in African people and the diagnosis is unusual in adults. We present the case of an individual diagnosed with CF with 26 years old. The correct diagnosis and adequate treatment were crucial and led to a great improvement in the patient ‘s quality of life.
Case report: Our patient was Afrodescendent, non-smoking and was referred to the Pneumology consultation in the setting of fatigue with progressive deterioration and recurrent respiratory infections. He complained of fatigue and bronchorrhea with severe dry cough since the age of 18. He also had diarrhea since childhood without blood, mucus or pus. There was no other relevant previous personal or familiar medical history. Chest X-ray showed diffuse reticular pattern with multiple rounded images suggestive of bilateral bronchiectasis with worsening relative to prior known radiography. Thoracic CT revealed diffuse emphysema and scattered bronchiectasis. Spirometry showed severe obstructive ventilatory changes, including both bronchial and bronchiolar patterns, with partial response in the bronchodilator test. In the walking test he presented significant dessaturation (inicial peripheral saturation of O2 of 96% and final saturation of 89%) over a distance of 470 meters and fatigue, dyspnea and leg pain corresponding to 1-2 in Borg scale. The sweat test was positive (Cl 116 mEq/L) and confirmed the definitive diagnosis. At the time of writing this summary, genetic testing was still in phase 3. He underwent physiotherapy and therapy including aerosol, inhaled bronchodilators and antibiotics (tobramycin and aztreonam on alterning cycles). He was addressed to a reference center in cystic fibrosis, where he has been followed. Under the implemented therapy there was significant clinical improvement, with less dyspnea and increased functional capacity. One year after the diagnosis, he presents fatigue mMRC 1. He now runs a distance of 2 Km weekly, with good tolerance. It should be noticed the difficulty in performing genetic testing in the Africans due to the scarcity of data in that population.

Keywords: *Cystic fibrosis. Afrodescendent. Genetic test. Adult. Symptoms.*

PO 103. A CLINICAL HEALTH ISSUE

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Introduction: The Middle East Respiratory Syndrome is a viral respiratory illness caused by a coronavirus (MERS-CoV), having first been notified in Saudi Arabia in 2012. Since April this year there were more than 400 deaths. In May this year, there was a case imported to the Republic of Korea that originated about 150 secondary cases, all associated with hospital transmission. The disease can be manifested by asymptomatic infection, pneumonia and Acute Respiratory Distress Syndrome, septic shock or death. The initial condition is characterized by fever, cough, chills, myalgias, arthralgias, dyspnea, and occasionally gastrointestinal symptoms. The incubation period can last up to two weeks. There is a low risk of imported cases of infection MERS-CoV at European level, however, the units and health professionals should be prepared for this eventuality.
Case report: Male patient, aged 55, transferred from the Emergency Department of the University Hospitals of Coimbra to the Emergency Department of the General Hospital in the context of possible respiratory infection. It is a smoker of 30 units pack year without other relevant back-ground and without usual medication. At the beginning of May while working on a cruise ship Asian sea starts clinical condition characterized by fever, chills and difficulty breathing. As presented no improvement despite the prescribed antibiotic therapy, the patient was admitted to a hospital in South Korea. Diagnosed infection by influenza B and pneumonia, having started with therapeutic piperacillin/tazobactam and levofloxacin. After a month of hospitalization and persistence of the clinical picture, it was repatriated to Portugal and admitted to the General Hospital Department of Pulmonology for continuity of care and study. After evaluation of the case, put up the diagnosis of coronavirus infection. Proceeded to contact and case discussion with Health Delegate/General Direction of Health and in accordance with the recommendations for this situation, the patient was placed in isolation. Held swab of oropharynx and nasopharynx, RNA research coronavirus in blood and sputum, which was sent to the National Institute of Health Dr. Ricardo Jorge (INSA). Levofloxacin was associated as a nominee of General Direction of Health to Meropenem which had already been instituted. It was made bronchoscopy with bronchoalveolar lavage, but could not exe-cute transbronchial lung biopsies. In addition to the above tests, it was also performed autoimmune study and serological study.
Discussion: The study for coronavirus research proved negative and it was confirmed infection by Legionella pneumophila, having been made notifiable disease. The patient fulfilled antibiotic therapy with levofloxacin (18 days) and meropenem (12 days). Isolation measures were suspended after confirmation of the absence of coronavirus infection. Health care workers in contact with patients with suspected infection by coronavirus must adopt strict protection measures and remain vigilant for symptoms warranting medical evaluation. The immediate implementation, systematic and rigorous measures of pre-vention and infection control in hospitals is essential to break the chain of transmission and prevent clusters associated with nosocomial infection.

Keywords: *Coronavirus. General Direction of Health.*

PO 104. LYMPHOMATOID GRANULOMATOSIS – A RARE PULMONARY LYMPHOPROLIFERATIVE DISEASE

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Introduction: Lymphomatoid granulomatosis (LYG) is a rare Epstein-Barr virus-driven lymphoproliferative disorder. It affects middle-aged adult males more often than females (M: F ratio ≥ 2:1) and patients with underlying immunodeficiency are at increased risk. Pulmonary involvement occurs in over 90% of the patients. Typical radiographic features are multiple bilateral lung nodules (80%), with predominant basal and peribronchovascular distribution, that can progress rapidly, coalesce and commonly cavitate. Additionally, LYG may present as pulmonary cystic lesion, pleural-based mass or prominent interstitial process. LYG histological evaluation is characterized by an angiocentrically and angiodestructive infiltrating process, comprising of a mixture of small and large lymphocytes with variable cytologic atypia, histiocytes, and occa-sional plasma cells, lacking true granulomatous architecture. The infiltrate shows a predilection for vascular involvement and necrosis may be present. Demonstration of EBV RNA genome or protein is a crucial point for correct diagnosis, and LYG is graded from 1 to 3, based on the number and distribution pattern of EBV-positive large atypical B-cells.
Case report: We report a case of a 68 year-old male, former smoker with a medical history of cardiac heart failure, coronary heart disease, atrial fibrillation, type 2 diabetes, primary arterial hypertension and dyslipidemia. He was admitted to the emergency department with recurrent syncopal events. Cranial computed tomography scan (CT scan) was unremarkable and pulmonary angiography CT revealed a pulmonary mass and he was referred to our Thoracic Oncology Unit. Chest and abdominal CT scan showed a mass of 4.3 × 3.7 cm in the lingular segment, and three satellite nodules. Several enlarged lymph nodes were identified (pre-vascular, paratracheal, subcarinal and left hilar). Whole-body PET scan revealed high FDG uptake in the pulmonary mass, as well as, in two satellites nodules, in left bronchohilar, mediastinal and right paratracheal lymph nodes and in the spleen. CT-guided transthoracic core needle biopsy was performed and the histopathological examination revealed an interstitial polymorphic infiltrate of small T lymphocytes and large atypical B cells, lymphocytes, with vascular wall permeation. The expression of EBV protein was identified in some of the large lymphocytes with imunnohistochemical staining (5-20 cells per high-power field), also present in vascular walls. A diagnosis of lymphomatoid granulomatosis (grade2) was established and the patient was referred to the Hematology department.
Discussion: The clinical course of LYG is variable. Some patients experiencespontaneous remissions without therapy. However, the majority of patients have progressive disease, with a median survival of two years. Treatment depends on histologic findings, as well as, the extent and location of the disease. This entity represents a rarity and still remains relatively poorly recognized by clinicians and pathologists. Controversy still exists concerning diagnostic criteria, precise taxonomy, treatment and relationship to other lymphoproliferative diseases.

Keywords: *Lymphomatoid granulomatosis.*

PO 105. TO SURVIVE WITH A PULMONARY ARTERIOVENOUS MAL-FORMATION

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Case report: Male, 48-years-old, smoker (30 pack year), with dyslipidaemia and hyperuricemia, with regular physical activity (cycling and diving). He was admitted to the emergency room for hemoptysis of recent onset. In the previous months he had been complaining of exertional dyspnoea (mMRC1), with no fever or constitutional symptoms. He had a plethoric facial appearance, cyanosis and digital clubbing. There was a respiratory alkalemia and severe hypoxemia (paO2 48.6 mmHg), which would not correct with supplemental oxygen. Blood tests showed polyglobulia (Hb 19 g/dL, hemotocrit 56%); D-dimers, platelets and C-reactive protein were nor-mal. Thoracic radiography showed a hypotransparency with lobulated well defined margins in the inferior third of the left lung. Computerized axial tomography of the chest with contrast enhancement showed a pulmonary arteriovenous malformation (PAVM) in the inferior left lobe. It was per-formed an embolization of the PAVM, with immediate improvement in the symptoms and oxygenation (paO2 84.5 mmHg). With further questioning, we learnt about recurrent spontaneous epistaxis since childhood. There were no telangiectasias and there was no family history of hereditary hemorrhagic telangiectasia (HHT).
Discussion: PAVMs are a rare clinical entity, whose incidence is 2-3/100,000 per year. They are abnormal direct communications between the pulmonary artery and vein, creating a direct shunt between a pulmonary and systemic circulations. They usually present themselves with 1-5 cm, occasionally being larger than 10 cm. In 70% of the cases, PAVMs occur in HHT patients. HHT (or Osler-Weber-Rendy syndrome) is an autosomal dominant disorder. Most patients present symptoms before the age of 20-years-old. Complaints related to PAVMs begin later in life (4th and 6th decades). The diagnosis is made clinically, based on the Curaçao criteria (epistaxis, telangiectasisas, visceral lesions and family history). Even in the absence of family history, the diagnosis is still a possibility, if a typical clinical picture is present, since the patient may have a new mutation.
Conclusions: In this case, the presence of PAVM and recurrent epistaxis, make the HHT diagnosis probable. The presence of severe respiratory insufficiency well tolerated by the development of efficient coping mechanisms, is in favour of a congenital situation, whose presentation was rather uncommon.

Keywords: *Pulmonary arteriovenous malformation. Hereditary hemorrhagic telangiectasia.*

PO 106. 3 WAYS

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AAT deficiency is an underdiagnosed pathology responsible for lung disease and, more seldom, hepatic and skin disease. It is an autosomic co-dominant genetic disorder of chromosome 7, of which 120 allels have been identified responsible for the secretion of the protein. The relation of this entity as a cause for COPD is still unclear, being estimated that there are 80,000 to 100,000 individuals in the USA and 3 million worldwide with a severe form of the disease. Due to the number of alleles mutations are common and 320 mutations have been identified so far. This mutations are responsible for different forms of the disease due to secretion of different seric levels of the enzyme, and therefore with different severities and time-lines. Moreover, mutations differ from country to country with identifications of clusters, namely, the Ourém mutation that is responsible for a severe form of the disease. Herein are represented 3 cases that illustrate this disease. The first is a patient of young age with a rare mutation and severe lung disease. The second case represents the common mutation Pi*ZZ, and therefore presented itself in a more indolent course and at a later age. The third case is a descendent of the second here mentioned, which illustrates mendelian genetics. It is a patient with low seric levels of the enzyme but without evident lung disease so far. In this paper we pretend to underline the importance of this disease, and

to alert to the possibility of mutations and clusters, as well as to the need for a timely diagnosis.

Keywords: *Deficit alfa 1 antitrypsin. COPD.*

PO 107. ORAL APPLIANCE FOR OBSTRUCTIVE SLEEP APNEA TREATMENT

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Introduction: Obstructive sleep apnea (OSA) is characterized by repeated interruption of breathing during sleep due to episodic collapse of the pharyngeal airway. These episodes may cause oxygen desaturation and are terminated by micro-arousals from sleep, leading to excessive daytime sleepiness, life-quality impairment, increase in cardiovascular disease and road traffic accident risks. Nasal continuous positive airway pressure (CPAP) is the current treatment of choice, but its cumbersome nature makes tolerance and compliance less than optimal. This gives rise to the need for other alternatives that are equally effective, but more tolerable. There is growing interest in the use of oral appliances as mandibular advancement device (MAD) to treat snoring and OSA. The authors present 3 CPAP-intolerant patients, compliance to oral appliance showed surprising.
Case reports: Case 1: 60-year-old male with mild OSA. Apnea-hypopnea-index (AHI) decreased from 9,7/h to 2,5/h with 8h daily compliance. Snoring decrease (30% to 15,7%). Case 2: 61-year-old female with moderate OSA. AHI decrease from 15,4/hto 2/h with 7h daily compliance. Case 3: 59-year-old female with moderate OSA. AHI decrease (14,9/h to 6,6/h) and snoring decrease (24% to 0,2%) with 7-7,5h daily compliance.
Discussion: Guidelines from the American Association of Sleep Medicine addressing OSA therapy suggests that MAD should primarily be used in patients with mild to moderate OSA. MAD are worn during sleep, protruding the mandible, to maintain the patency of the upper airway by increasing its dimensions and reducing its collapsibility. There are many types of appliances, and they have potential advantages over CPAP in that they are unobtrusive, make no noise, do not need a power source, and are potentially less costly, increasing compliance as shown in presented cases. Recent study in adults with predominately moderate to severe OSA, the short term (one month) use of an adjustable MAD was not inferior to CPAP in its impact on 24 hour mean ambulatory blood pressure, daytime sleepiness, disease specific and general quality of life. Although less efficacious than CPAP for improving the polysomnographic indexes of OSA, MAD are generally preferred by patients. This has the potential to translate to better patient adherence. Thus, even for a severe OSA patient struggling with CPAP therapy, in selected cases MAD is probably the best second line therapy available.

Keywords: *Obstructive sleep apnea. Oral appliance. Compliance. Therapeutical options.*

PO 108. IMPORTANCE OF THE NUTRITIONAL MOTIVATION IN THE ACT OF ADAPTATION AND EDUCATION OF NON-INVASIVE VENTILATION – BASED IN A CLINICAL CASE.

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PRAXAIR Portugal Gases.

Introduction: OSAS (Obstructive Sleep Apnea Syndrom) is characterized by recurrent respiratory events of total or partial obstruction of the upper respiratory airways during the sleep with reduction or complete cessation of the airway flow, desaturation, and arousals. One of the most important risk factors is obesity, with statistical evidence of the relation between OSAS prevalence and the BMI (Body Mass Index). CPAP (Continuous Positive Airway Pressure), Auto-CPAP (Automatic Continuous Positive Airway Pressure) and Bilevel (Spontaneous or Auto) are the gold standard in the treatment of moderate and severe clinical situations. At the beginning of the treatment with Non Invasive Ventilation (NIV) the leptin production is decreased which promotes the weight loss and the appetite control. These treatments are attended in homecare environment by health care professionals in the aim of homecare respiratory care.
Case report: Male, 68 years old, seek medical respiratory advice based in nocturnal respiratory events reported by his wife. BMI = 30.6 Kg/m^2 (level 1 obesity), 1.79 m height and 98 Kg weight; Clinical history: HBP (high blood pressure); recurrent depressive syndrome. Performs level 3 polysomnographic study (March 2015) with moderate OSAS confirmation, Apnea-Hypopnea Index (AHI) = 21.9 events/h, starting the treatment in April 2015 with Auto-CPAP (4/12 cmH_2O pressures) and nasal mask. Educational and adaptation protocol was complemented with motivation in dietary and life style habits. After 1 month, the patient was recognizing the benefits of the treatment, presenting the results: percentage of sessions over 4h = 94.8%, average usage/night = 7h; P(90) = 10.7 cmH_2O; without significative leak (12 lpm); $AHI_{residual}$: 3.2 events/h, weight: 95 Kg; BMI = 29.65 Kg/m^2 (overweight) and corrected dietary and life style habits. In the monitoring home visit 3 months later the beginning of the treatment the results obtained were: percentage of sessions over 4h = 94.1%, average usage/night = 7h; P(90) = 9.3 cmH_2O; without significative non intentional leak (11 lpm); $AHI_{residual}$: 1.6 events/h, weight: 88 Kg; BMI = 27.46 Kg/m^2 (overweight). Performs level 3 polysomnographic study which confirms mild OSAS (AIH = 7 events/h). Attends level 1 polysomnographic study.
Discussion: The BMI decrease from 30.6 to 27.46 was complemented with the decrease to lower gravity level of the pathology, namely, the change from moderate OSA (21.9 events/h) to mild OSA (7 events/h). The patient acquired a restful sleep with significative improvement of his activity of daily living (ADL). The education and monitoring of homecare treatments in patients with OSA and obesity by healthcare professionals should include the motivation to weight loss, reforcing the benefits of physical exercise and adoption of life healthy habits mainly in the beginning of the treatment.

Keywords: *OSAS. BMI. AHI. Residual AHI.*

PO 109. INCREASED RESIDUAL APNEA/HYPOPNEA INDEX: IMPORTANCE OF HOMECARE MONITORING PROTOCOLS IN NON INVASIVE VENTILATION – BASED IN A CLINICAL CASE

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PRAXAIR Portugal Gases.

Introduction: Based in publication "*Orientação número 022/2014 da Direcção Geral da Saúde"*, still in public discussion, the patients with Obstructive Sleep Apnea Syndrome (OSAS) under Non Invasive ventilation (NIV) with Continuous Positive Airway Pressure (CPAP, Auto-CPAP) clinical following should be done by the primer healthcare, however the patient is stable. This referentiation should only happen when there is evidence of adherence and therapeutic efficacy. Is considered adherence to the NIV since is verified a utilization over 4h/day in 70% of the sessions. Therapeutic efficacy is evidenced if the clinical improvement is associated with residual Apnea/Hypopnea Index ($AIH_{residual}$) < 5 events/h. It's also important that the non-intentional leak is less than 25 L/min in most cases. These limits are identified and reported to the primer healthcare doctors by the health professionals that follow patients with homecare respiratory monitoring protocols.

Case report: Male, 52 years old, smoker, 4.5 PY (Pack-Years), Body Mass Index (BMI) of 26.3 Kg/m^2 (over weight). In 2012 is diagnosed with severe OSAS, starting treatment with Auto-CPAP (4/12 cmH_2O pressures) and nasal mask. The patient was asymptomatic, adherent, with non-intentional leak (17 L/min) and AIH$_{residual}$ (0.9 events/h) and recognizing the benefits of the therapy. The patient was medicated with omeprazole, sublingual vaccine to allergenic grass and strontium ranelate. 15 days ago started pharmacotherapy with: tapentadol, oxycodone hydrochloride and naloxone hydro-chloride by recent orthopedic surgery for replacement of astragalus for osteosynthesis material. In monitoring homecare visit the patient reported suffocation sensation with some nocturnal awakenings (sleep fragmentation) and excessive daytime sleepiness, with significant increase in AHI$_{residual}$ (by increasing central apneas): IAH$_{residual\ total}$ = 11.8 events/h IAH$_{residual\ apnea\ central}$ = 10.9 events/h. It was referenced by the Respiratory Homecare (RH) technician to the primer healthcare doctor in order to clinical and pharmacotherapy reevaluation who decided to stop the opioid. In homecare visit after 30 days the patient reported a restful sleep, with consequent improvement in quality of life (IAH$_{residual}$ = 0.8 events/h).
Discussion: Appropriate articulation between the patient, the RH health professional and assistant doctors is the most important factor to promoting adherence to NIV and therapeutic efficacy. Thus, the existence of monitoring homecare protocols to identify the parameters evaluated by the algorithms equipment (IAH$_{residual}$ and hours of use), as well as clinical history in home environment allow the elaboration of a comprehensive report aimed at effective monitoring OSAS patients.

Keywords: *RH. Monitoring Homecare Protocols. OSAS. CPAP. IAH residual.*

PO 110. OBSTRUCTIVE SLEEP APNEA AND CLIMATIC SEASONALITY. DOES EXIST THE GEOGRAPHICAL DIFFERENCE IN EUROPE? TWO EXAMPLES NORTH AND SOUTH. A RESEARCH OF THE EUROPEAN SLEEP APNEA - ESADA

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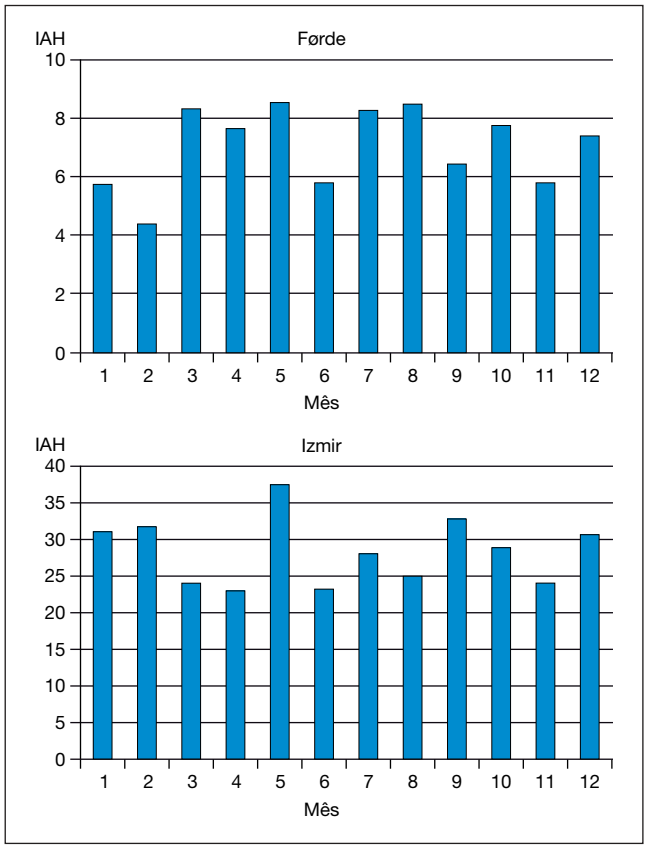
Introduction: Obstructive sleep apnea (OSA) is an increasingly present disease in our daily lives, as a respiratory disease it is susceptible to the influence of the surrounding atmospheric conditions, including atmospheric pressure, humidity and temperature. Since 2007 the "European Sleep Apnea Database (ESADA)" has gathered data and currently has more than 18,000 patients with obstructive sleep apnea encompassed in 29 diagnostic centers throughout Europe.
Methods: To understand that influence it has been developed a pilot research project, which analyzed the variability of monthly respiratory events in a year in two centers located in the geographical extremes of Europe, including Norway (Forde) and Turkey (Izmir). Proceeded to the analysis of the results with SPSS software, version 21 and presented as medians.
Results: The number of patients included in Førde was 1,289, making an average of 107 patients/month and Izmir was 745, amounting to an average of 62 patients/month. There was a high variability of the seasonal pat-tern between centers. The north end of the sleep laboratory: Forde, Norway, has shown an increasing trend of respiratory events during the summer (except June), verifying a minimum in February with AHI of 4.65/h maximum on August 8 75/h. In the far south sleep laboratory, Izmir, Turkey, there was a higher monthly variability without a clear trend (figs.).



Discussion: In this preliminary study we observed in the two geographically opposite European cities a different monthly standard severity of obstructive sleep apnea. One possible justification to only the north center present seasonal trend of the AHI, may be due to be rare to these countries the use of air conditioning in summer, so the effect of increased temperature may become more evident.

Keywords: *Sleep apnea. Climate Seasonality. ESADA-European Database on Sleep Apnea.*

PO 111. IMPACT OF THE SLEEP OUTPATIENT CLINIC PROTOCOL IN POSITIVE AIRWAY PRESSURE TREATMENT ADHERENCE

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Introduction: Obstructive sleep apnea syndrome (OSAS) is a highly prevalent sleep disorder, and the most commonly used treatment is ventilation with positive airway pressure (PAP). The efficacy of this therapeutic option is often decreased due to poor adherence.
Objective: To assess the efficacy of a protocol currently used in the sleep outpatient clinic in Hospital Vila Franca de Xira, with respect to the adherence of patients diagnosed with OSAS to treatment with PAP.
Methods: Longitudinal retrospective study of a cohort of patients who started PAP therapy between the 1st of April 2013 and 31st of March 2014. Variables evaluated at the first visit were: epidemiological data, symptoms, Epworth Sleepiness Scale (EPW) score, comorbidities and OSAS severity. Variables evaluated at 3, 6 and 12 months (M) were: weight, adherence (defined as the patient using PAP ≥ 4h per night, at least 70% of the nights), level of adherence (percentage of nights in which the PAP was used ≥ 4 hours), EPW score, residual apnea/hypopnea index (AHI) and

side effects. A multivariable analysis was conducted, in order to determine the independent factors related to non-adherence.
Results: Of the 412 patients evaluated in the outpatient clinic during this period, 109 were included. Mean age was 62 years, 66% were men, 14% were drivers, mean Body Mass Index (BMI) was 33 and the mean EPW score was 11. Mean AHI was 36/h, with 46% of patients having mild or moderate OSAS and 54% severe OSAS. Only 6% patients had no prior history of comorbidities. Evaluation after treatment onset: mean BMI was 33 at 3M and 32 at 6 and 12M, with a statistically significant decrease in those followed in the Nutrition outpatient clinic; 70% were adherent at 3M and 81% at 6 and 12M; mean level of adherence was 77% at 3M, 81% at 6M and 84% at 12M; mean EPW score was 6 at 3M and 4 at 6M and 12M; mean residual AHI of 4/h at 3M and 3/h at 6M and 12M. Treatment side effects occurred in 67% of patients. A sub-analysis of the group of patients found to be non-adherent at 3M, revealed a mean level of adherence of 46% at 3M, 69% at 6M and 76% at 12M. The independent factors related to non-adherence were increased leak, lower age, lower BMI and lower AHI.
Conclusions: Adherence in this group of patients was higher than that described in the literature. An increase in the number of adherent patients and in the level of adherence was confirmed in a 12M follow-up. An increasing trend in the level of adherence was noticed in the initially non-adherent patients, but this increase was not statistically significant. BMI values remained stable in patients undergoing PAP treatment. The period during which patients adapted to PAP seems to be the first 6M. We concluded that the protocol used in the sleep outpatient clinic is adequate for the follow-up of patients with OSAS.

***Keywords**: Obstructive sleep apnea. Patient adherence. Positive airway pressure.*

PO 112. EVALUATION OF PATIENTS WITH SLEEP APNEA CENTRAL UNDER ADAPTATIVE SERVOVENTILATION – PRELIMINARY RESULTS

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Introduction: Central sleep apnea (CSA) is a sleep breathing disorder wherein the respiratory effort is reduced or absent, intermittently or cyclically, due to heart failure or central nervous system. It has six subtypes: primary CSA; CSA due to the breathing pattern of Cheyne-Stokes; CSA due to periodic breathing high altitude; CSA due to medical condition not Cheyne-Stokes; CSA due to drugs or substances; and primary CSA for Children. Respiratory disorders during sleep are common in congestive heart failure. Data reveal that approximately one third of patients with heart failure have obstructive sleep apnea, a third has central apnea, and another third have normal breathing. Cheyne-Stokes, has been the target of recent attention because of the findings of the SERVE-HF study, in which there was no improvement in all-cause mortality, having been found on the contrary, an unexpected increase in cardiovascular mortality in patients treated with adaptive servo ventilation (ASV) compared with the control groups.
Objective: Re-evaluation of all patients undergoing adaptive servo ventilation, based on the recommendation of DGS to discontinue treatment of patients with central sleep apnea and heart failure with ejection fraction ≤ 45%, based on preliminary results of international clinical study, SERVE-HF, which show an increase in cardiovascular mortality in this patient group.
Methods: Retrospective study of 34 patients with central sleep apnea inadaptative servo ventilation in order to characterize as age and gender, predominantly cardiac pathology, relevant background such as cerebrovascular disease, endocrine diseases, obesity/dyslipidemia, prior OSA and its gravity function of AHI and Epworth Sleepiness Scale. Prospectively intended to compare clinical and echocardiographic a two months interval cardiac function of patients including ejection fraction of the left ventricle (LVEF).
Results: Of the 34 patients only four were women (11%); the average age was 71 years (50-91); In 24 patients (70.6%), central sleep apnea was due to Cheyne-Stokes; the predominant cardiac pathology was congestive heart failure with 15 cases (42%), followed by coronary disease with 9 cases (26%). As pathological history relevant to diabetes mellitus was the most frequent with 15 cases (42%); we find three cases of cerebro-vascular disease and 1 chronic renal failure on hemodialysis. All patients had a previous diagnosis of OSA, 58% severe. To date 22 patients were re-evaluated by echocardiography; of these, only six showed an LVEF < 45%, which implied changing the ventilation mode to CPAP; 9 patients showed a decreased LVEF, but > 45% and the remaining 7 patients with preserved systolic function, so keeping the servo-ventilation.

***Keywords**: Central apnea. Heart failure. Servo-ventilation.*

PO 113. CHURG-STRAUSS SYNDROME – A CASE REPORT

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Introduction: The association between pulmonary disease and eosinophilia can be found in a heterogeneous group of diseases including Churg-Strauss syndrome, characterized by the presence of asthma, eosinophilia and systemic involvement.
Case report: The authors describe a clinical case that illustrates this clinical picture. The authors report a case of a male patient, 40 years old, with history of asthma, which appealed to the emergency service for a productive cough with hemoptysis sputum, dyspnea and wheezing with approximately 2 months of evolution. He further referred bilateral and symmetrical paresthesias located to the dorsal region of the feet and outer surface of the legs. Patient observation showed skin lesions compatible with vasculitis of the lower limbs. Of the performed laboratory tests we highlight: hypoxemia, thorax computed tomography with multiple areas of densification in both lung fields, proteinuria (+) and marked eosinophilia (45.95%). The patient was admitted and initiated corticotherapy with progressive symptomatic improvement. Several diagnostic tests were performed which revealed ethmoidal and frontal sinusitis, multiple axonal mononeuropathy, eosinophil-rich alveolar infiltrate (bronchial biopsy) and elevated pANCA levels (239.9). It was admitted the diagnosis of Churg-Strauss syndrome and was initiated therapy with cyclophosphamide with subsequent clinical, analytic and imagiologic improvement. The patient was discharged with medication and indication to keep follow up in consultation.
Discussion: The presence of peripheral eosinophilia in an asthmatic patient should raise the suspicion of Churg-Strauss syndrome being mandatory the assessment of organ involvement besides the lung, namely the heart, kidneys, gastrointestinal tract and central nervous system, whose involvement is associated with a worse prognosis. The diagnosis of this condition is clinical and defined by known classification criteria.

***Keywords**: Churg-Strauss. Syndrome. Asthma.*

PO 114. SO YOU THINK YOU CAN RUN? – A CASE OF ASTHMA THAT USED TO BE SEVERE

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Case report: A 67-year-old non-smoking male patient was being followed in our consultation since the age of 50 because of non-allergic/late onset asthma. He was medicated with inhaled corticosteroid (ICS) and long-acting beta-adrenergic (LABA) with no improvement in symptoms, even after adding other controllers (leukotriene-receptor antagonists, xanthine and anticholinergic). At the age of 55, an oral corticosteroid was added but the disease remained uncontrolled. The thoracic computed tomography showed no abnormalities, alpha-1-antitrypsin was normal and antineutrophil cytoplasmic antibody was negative. His therapeutic compliance and inhaler technique were good. Besides obesity (BMI 31 Kg/m^2), he didn't have other comorbid conditions like rhinosinusitis, gastroesophageal reflux disease or obstructive sleep apnea. During follow-up, there was a progressive lung function decline, coincident with weight gain. Last year, he began running regularly (15 Km/day) and participates in marathons (42 Km). Since then, he lost 15% of his weight and it was possible to stop the oral corticosteroid. He is now medicated with ICS/LABA and an anticholinergic, with an improvement in symptoms. His last lung function tests showed a 20% increase of FEV1.
Discussion: According to ERS/ATS guidelines (2014), severe asthma is defined as asthma which requires treatment with high dose inhaled corticosteroids plus a second controller (and/or systemic corticosteroids) to pre-vent it from becoming uncontrolled or which remains uncontrolled despite this therapy. Asthma that worsens on tapering of corticosteroids also met the definition of severe asthma. The association of asthma and obesity is well recognized, mainly in severe asthma. Patients who are obese and have severe asthma may represent a distinct clinical phenotype. Increasing body mass index is associated with a greater severity and frequency of respiratory symptoms, more frequent exacerbations and poorer quality of life. The mechanisms responsible for this relationship remain unclear. Some studies showed that weight loss was associated with improvement in symptoms, some improvement in lung function and reduction in need for reliever medication. This is a paradigmatic case of severe asthma where the significant lost of weight was determinant for the improvement in symptoms, lung function and life quality.

***Keywords**: Obesity. Severe asthma.*

PO 115. SPONTANEOUS PNEUMOMEDIASTINUM CAUSED BY ASTHMA EXACERBATION

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Introduction: Pneumomediastinum, commonly a rare disease among adults, it is much frequent in newborns and younger age, with an 8:1 relationship between men and women. It constitutes a rare finding in asthma, representing 1% of the cases. The most frequent symptoms are chest pain and dyspnea, being the diagnosis made by image examinations, such radiography and chest computed tomography. Treatment of choice is conservative, non-operative, with a favourable prognosis in the majority of the cases.
Case report: A 19 years old male, Caucasian and non-smoker patient, with asthma history since his childhood, had been treated with SOS budesonide/formoterol 160/4,5 µg. Apparently stable, without exacerbations of his illness for the past 2 years, the patient developed a two days history of throat pain, dry cough, dyspnea, showing no improvements with his usual medication. Later on, he developed productive cough, without fever, chest pain or trauma history, resulting in his admission at Prof. Doutor Fernando Fonseca Hospital Emergency Department in April 2015. During examination the patient presented a normal blood pressure, pulse rate of 120 beats per minute, tympanic temperature of 37.8 ºC, SpO2 95% in room air. He had left supraclavicular subcutaneous emphysema. Pulmonary auscultation was rude, with globally decreased breath sounds. Complementary examination – Laboratory: 14,900 white blood cells, 89.9% neutrophils, without eosinhophilia (0.5%). RCP 5.14 mg/dl. Arterial blood gas analysis in room air, after broncodilation therapy: hypocapnia and hypoxemia for age (pH: 7.42; pCO_2: 33.8; pO_2: 77.1; HCO_3: 22.8; SpO_2: 95.6%). ECG: sinus tachycardia, with no other changes. Chest radiograph: thin radiolucent shadow along the cardiac borders, suggesting pneumomediastinum. Chest CT: "Extensive pneumomediastinum reaching all compartments, extended itself past the deep layers of chest wall as the supra-clavicular and lower cervical segments. There was no evidence of pneumothorax. Mediastinal structures were centered, with normal diameter of the trachea and main bronchi. No further changes". The patient was admitted into pneumology service with a diagnosis of acute tracheobronchitis and asthma complicated by pneumomediastinum, being treated with amoxicillin-clavulanic acid, clarithromycin, corticosteroids (prednisolone), bronchodilation (salbutamol and beclomethasone), oxygenotherapy. The patient made a remarkable clinical improvement overcoming the initial symptoms and the subcutaneous emphysema. The chest radiography revealed an improvement. A high resolution chest CT revealed: "Favourable evolution with complete regression of pneumomediastinum and subcutaneous emphysema, however small subcutaneous air bubbles remained at the bottom strand of the right lateral neck". Patient was discharged to a pneumology appointment after 6 days of his admission, remaining in a stable clinical condition.
Discussion: Extra-pulmonary extravasations of air manifested as subcutaneous emphysema and pneumomediastinum, constitute a rare but very important complication of acute exacerbation of asthma. Therefore diagnosis is based on a high index of suspicion. Treatment is conservative in most of the cases, with expected resolution between 2 and 7 days, and relapse is rare. Nevertheless complications may occur, like hypertensive pneumomediastinum or pneumothorax, being of great importance monitoring the patient for a short period of time.

***Keywords**: Asthma. Pneumomdiastinum.*

PO 116. ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS – A CLINICAL CASE

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Introduction: Allergic Bronchopulmonary aspergillosis (ABPA) is an idiopathic pulmonary disease, characterized by complex hypersensitivity response, that occurs after bronchi colonization by *Aspergillus* or other fungi. Usually, appears between the third and fifth decades of life, and may represent 7-14% of cases of chronic steroid-dependent asthma.
Case report: A 67-year-old women, restaurant waitress, non-smoking, with personal history of degenerative pathology of the spine, pansinusopathy, without prior pulmonary pathology, was presented to the Pneumology consult after a crisis of dyspnea and wheezing, that motivated emergency room attendance. Was discharged from the hospital, medicated with Budesonide/Formoterol 4,5 µg/160 mg 2id, and Deflazacort withdrawal scheme. In the consult of Pneumology (Jun/2014), she reported persistent cough with 6 months duration, associated with mucous sputum, wheezing and fatigue. Denied other relevant complaints. Physical examination without relevant changes in pulmonary auscultation. Additional diagnostic examinations: pulmonary function tests (PFT's) with obstruction of small air-ways; echocardiogram with no changes; Mantoux 15 mm; CT Thorax with ground glass areas and mild bronchiectasis, nodular fibrotic area in RLL, disc atelectasis of small pleural and pulmonary synechae in LUL.

Flexible bronchoscopy was performed without relevant changes, having the cytological examination revealed inflammation, bronchoalveolar lavage (BAL) with BK and bacteriological culture negative. Suspended Deflazacort, keeping Budesonide/Formoterol. Presented to the emergency department (Aug/2014) with worsening of respiratory symptoms, getting hospitalized for 1 week for acute exacerbation of asthma, due to respiratory infection. Antibiotic therapy was performed with Levofloxacin and corticosteroids. PTF's performed were similar to the previous. Following in consult (Oct/2014), recurrence of the episodes were observed, characterized by prolonged expiratory time and mild bilateral crackles, whenever Deflazacort was suspended. The clinical study revealed: eosinophilia 660 cell/µL (10.8%), total IgE 1,322 IU/mL, with remainder study of immunosuppression, autoimmune disease and viral serologies negative. Skin test reactivity (STR) responsive to *Aspergillus*. Parasitological examination stool was negative. Repeated CT thorax, similar to previous study, and bronchofibroscopy (Dec/2014), with 53% eosinophils in BAL, negative cytology to malignant cells, Ag galactomannan positive and isolation of *Aspergillus* in cultura. Serum precipitins, IgG and IgE for *A. fumigatus* were performed, assuming diagnostic compatible with ABPA. To treat ABPA, corticotherapy with deflazadort 60 mg was restarted for 1 month, reducing 7.5 mg/Kh every 2 weeks. Due to clinical worsening, could not be reduced below 37.5 mg/Kg. Imagiological exams (Mar/2015) demonstrated reduction of opacity in ground glass areas, keeping the remaining imaging changes. At the same time improvement in PTF's were showed comparably to prior studies.
Discussion: The ABPA can manifest itself with episodes of bronchial obstruction, inflammation and mucoid impaction, and can cause formation of bronchiectasis and fibrosis. The diagnosis of ABPA is accomplished by symptoms of asthma, STR to *Aspergillus*, total IgE > 1,000 ng/mL, eosinophilia > 500 mm^3, serum precipitins and elevation of IgE and IgG antibodies specific to *A. fumigatus*, central bronchiectasis and/or lung infiltrates. The treatment of choice is based on corticotherapy, with Prednisolone 0.5-1 mg/Kg/day, followed by slow taper (3-6 months). In cases of steroids-dependence, use of Itraconazole or Voriconazole during 16 weeks may allow dose reduction.

Keywords: *Allergic bronchopulmonary aspergillosis. Asthma. Corticosteroid-dependence.*

PO 117. UNCONTROLLED ASTHMA. ARE YOU SURE?

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Case report: Woman, 51 years old, non-smoking, referred to the Pulmonology consult for dyspnea and wheezing. Without respiratory symptoms up to 28 years, when she began dyspnea crisis and paroxysmal wheezing, especially during exercise. She has previously been followed in Pulmonology consult which she abandoned as well as the therapy. She had been diagnosed with asthma and had positive skin sensitivity test for mites. In our consult the physical examination reveal no alterations. Respiratory function tests showed a slight obstructive ventilatory pattern without significant response to bronchodilator therapy and with flow-volume curve suggesting the presence of upper airway obstruction. She was treated with inhaled corticosteroid/beta2 agonist association and long-acting anti-leukotriene. In clinical reassessment, in addition to maintaining complaints of wheezing, she also presented dysphonia and stridor. In this context she was submitted to a faringolaringoscopy that showed vocal cord paralysis in abduction that motivated the execution of neck and chest Computed Tomography scans that did not document significant changes. Head Computed Tomography scan showed cerebellar tonsils downward to the foramen magnum level and syringomelia extending to the middle third of C2, confirmed by head Magnetic Resonance Imaging (MRI) and suggestive of Chiari type I malformation. The patient underwent decompressive surgery of the foramen magnum, without complications on postoperatory. On the evaluation carried out after surgery, she kept paramedian vocal cord paralysis and narrowed glottic gap in faringolaringoscopy; a head MRI documented discrete drop in cerebellar tonsils, which are at the level of the foramen magnum. In clinical reassessment performed at Pulmonology Consult, the patient complained of exertional dyspnea and stridor. Given the persistence of symptoms and clinical exacerbations in the context of upper respiratory infections' episodes, it was necessary the use of systemic corticosteroid therapy for periods.
Discussion: The Chiari malformations are a heterogeneous group of diseases whose pathogenesis is not well understood. They are defined by anatomical changes in the cerebellum, brainstem and/or craniocervical junction associated with downward displacement of the cerebellum into the spinal canal. It is called Chiari type I malformation when there is a drop of, at least, 5 mm of cerebellar tonsils below the foramen magnum level. Its prevalence varies between 0.5 and 1%. These patients may be asymptomatic until adulthood and the onset of symptoms is usually insidious. In the case above, the clinical presentation of this syndrome was due to vocal cord paralysis by compression of the IX and X cranial nerves. The treatment is surgical and it is indicated when symptoms occur. The prognosis varies, with most studies showing clinical improvement or stability after surgery. The relevance of this case relies in the fact that the symptoms presented by the patient imposed not only a differential diagnosis of uncontrolled asthma but also investigation of situations that can mimic or exacerbate asthma.

Keywords: *Asthma. Chiari malformation type 1. Stridor.*

PO 118. ACOS: A NOT FULLY UNDERSTANDABLE DISEASE!

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Introduction: The distinction between asthma and COPD is not always clear. According to the latest update of joint project of GINA and GOLD, the Asthma COPD Overlap Syndrome (ACOS) is characterized by a persistent airflow limitation with several features usually associated with asthma and others associated with COPD. It has various and different clinical presentations, as the example of asthmatic patients with a smoking history who develop a non-fully reversible airway obstruction. A systematic and stepwise approach is recommended for the diagnosis.
Objective: Confirmation of the diagnosis of ACOS using the GINA and GOLD criteria in a clinically suspected group of patients.
Methods: Retrospective analysis of a population of patients followed in a Respiratory Allergology outpatient clinic during six months. We selected patients with clinical and functional study compatible with ACOS. The questionnaire suggested by the joint project GINA and GOLD was used for diagnosis. Demographic and anthropometric data; smoking habits; clinical, analytical and functional parameters were evaluated, as well as inhaled medication used by the patients and the number of exacerbations in the previous year.
Results: Fourteen patients were selected, 8 female and 6 male, mean age of 63 ± 13 years and BMI 27.5 ± 7.1 kg/m^2. Six patients were current smokers (32 ± 9 pack-years), 4 ex-smokers with 69 pack-years (minimum 15 and maximum 120) and 4 were non-smokers. It was found that 2 female patients had prior exposure to the combustion of biomasses. 10 patients had a previous diagnosis of asthma, of which five had symptoms before age 20 years. Four patients had a family history of atopy and 7 patients had positive allergy tests. In the spirometric evaluation, 5 patients

had FEV1 ≥ 80% and only one patient had FEV1 < 50%. Six patients had positive bronchodilator test, and the increase in FEV1 was 400 ml from baseline in 2 patients. Regarding inhaled medication, 7 patients were treated with the combination ICS/LABA/LAMA. Only 4 patients had an exacerbation in the previous year. After applying the questionnaire presented in the project GINA and GOLD, 5 patients had asthmatic profile, while 3 patients had suggestive questionnaire of COPD. Six patients had evocative score of ACOS. These were older than 40 years, had risk exposure history and mean FEV1 of 80%, with total or partially reversible obstruction.
Conclusions: The assessment of this small group of patients revealed the difficulty in distinguishing between asthma and COPD, especially in patients over 40 years, asthmatics and with strong exposure to risk factors (tobacco or biomass combustion). The application of GINA and GOLD criteria allows better identification and orientation in suspected cases. In this sample, the prevalence of ACOS was lower than initially expected.

***Keywords**: ACOS. Asthma and COPD overlap syndrome. Smoking history.*

PO 119. IMPACT OF THE TYPE OF VENTILATORY SUPPORT IN THE INCIDENCE OF NOSOCOMIAL INFECTION IN PATIENTS ADMITTED TO A RESPIRATORY INTENSIVE CARE UNIT

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Introduction: The use of invasive procedures in critical patients is a well-known risk factor for nosocomial infection.
Objective: To evaluate the impact of the type of ventilatory support (invasive mechanical ventilation, IMV, versus noninvasive ventilation, NIV) in the incidence of nosocomial infection among patients admitted to a Respiratory Intensive Care Unit (RICU).
Methods: Retrospective study of patients admitted to our RICU from 2012, January 1st until 2015, April 30th who were submitted to any kind of ventilatory support. Patients who did not need to be ventilated or patients submitted to both types of ventilation were excluded from the analysis. We analysed demographics, length of stay (LOS), average IMV and NIV duration, APACHE II, gas exchange parameters, unadjusted mortality and Standardized Mortality Ratio (SMR). Patients were grouped based on the type of ventilatory support performed. The afore mentioned variables as well as the nosocomial infection rate (%) and incidence (per 1,000 inpatient days) were compared between groups. Odds-ratio for the effect of mechanical ventilation (IMV versus NIV) on the risk of nosocomial infection and mortality was estimated with logistic regression.
Results: n = 554. IMV: n = 127, 22.9%. NIV: n = 427, 77.1%. Age (IMV/NIV):62 ± 17/72 ± 15 years, p < 0.0005. APACHE II (IMV/NIV): 26 ± 10/21 ± 6, p < 0.0005. PaO2/FiO2 (IMV/NIV): 201 ± 137/219 ± 89, p = ns. Average IMV duration (days): 16.7 ± 63.9. Average NIV duration (days): 9.8 ± 8.2. LOS (IMV/NIV): 18.9 ± 64/11.1 ± 8.3, p = 0.015. Nosocomial infection rate (%, IMV/NIV): 33.9/17.8, p < 0.0005. Nosocomial infection incidence (1,000 days, IMV/NIV): 30.9/20.2, p = 0.007. *Odds-ratio* for nosocomial infection risk, IMV vs NIV: 2.4, p < 0.0005 (CI 95%: 1.5-3.7). Mortality (IMV/NIV): 57.5%/34.4%, p < 0.0005. Odds-ratio for mortality, IMV vs NIV: 2.6, p < 0.0005 (CI 95%: 1.7-3.8). (SMR (IMV/NIV): 101.0%/88.4%.
Conclusions: In comparison with IMV, NIV was associated with a significant reduction in the incidence of nosocomial infection and mortality.

***Keywords**: ICU. Infection. Noninvasive ventilation. Invasive mechanical ventilation.*

PO 120. NON-INVASIVE VENTILATORY SUPPORT IN CAP: EXPERIENCE OF A RESPIRATORY INTENSIVE CARE UNIT

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Introduction: Community-acquired pneumonia (CAP) is a common infectious disease often associated with acute respiratory failure (ARF) that may imply ventilatory support.
Objective: To compare CAP patients admitted to a Respiratory Intensive Care Unit(RICU) on the basis of the type of ventilatory support judged appropriate.
Methods: Twenty-seven-month retrospective study of CAP patients admitted to our RICU who required ventilatory support. Patients in whom non-invasive ventilation (NIV) was a maximal intervention strategy and those whose length of stay (LOS) was less than 24 hours were excluded. We analysed demographic characteristics, APACHE II, LOS, type of ventilatory support, number of affected quadrants on chest X-ray and septic shock on day of admission, gas exchange parameters, mortality and standardised mortality ratio (SMR). Patients were divided in two groups based on the first type of ventilatory support: NIV and invasive mechanical ventilation (IMV). NIV group was further stratified based on NIV failure (died or required IMV) or success. The aforementioned variables were compared between groups. In failure NIV group, the time until IMV was recorded and compared between survivors and non-survivors.
Results: Out of 107 patients with CAP, we included 96 who required ventilatory support. Age: 69.1 ± 13.8 years; males: 62.5%; APACHE II: 23.1 ± 8.7; LOS: 17.4 ± 13.3 days; ≥ 3 quadrants affected: 39.6%; septic shock: 37.5%; rate of mortality: 26.0%; SMR: 56.7%. IMV/NIV comparisons: n = 41/55. Age: 67 ± 17/71 ± 11, p = ns; APACHE II: 27 ± 10/20 ± 6, p < 0.0005; LOS: 21.2 ± 15.6/14.6 ± 9.6 days, p = 0.021; $PaCO_2$: 54 ± 24/45 ± 12 mmHg, p = 0.014; admission PaO_2/FiO_2: 172 ± 141/166 ± 86, p = ns; affected quadrants: 4 quadrants 67%/1 quadrant in 75%, p = 0.037; septic shock: 69.4%/30.6%, p < 0.0005; rate of mortality: 39.0%/16.4%, p = 0.018; SMR: 64.5%/46.2%. Success rate of NIV: 69.1% (n = 38). NIV group comparisons (success/failure): APACHE II: 18 ± 5/24 ± 6, p = 0.001; LOS: 12.5 ± 7.1/19.3 ± 12.7 days, p = 0.049; median PaO_2/FiO_2 after 1 hour of NIV: 172/91, p < 0.001; septic shock: 10.5%/41.2%, p = 0.024. In NIV failure patients, time to IMV initiation was 59.5 ± 43.7 hours (median non-survivors/survivors 37/62 hours, p = ns), mortality 49.7% and SMR 106%.
Conclusions: In PAC patients, NIV is a strategy with high success rate. Compared to IMV, it is associated a lower LOS, rate of mortality and adjusted mortality. Nonetheless, NIV failure group associates with lower PaO_2/FiO_2 after 1hour of NIV and with the presence of septic shock. It has highest mortality that we can exclude to be related with delayed switch to IMV. These dates suggest needed of early tracheal intubation in PAC patients who have more severe hypoxemia after 1 hour of NIV and/or septic shock.

***Keywords**: Community-acquired pneumonia. Intensive care unit. Non-invasive ventilation.*

PO 121. LEGIONNAIRES' DISEASE OUTBREAK IN PORTUGAL: AN INTENSIVE THERAPY UNIT REPORT

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Introduction: A large community outbreak of Legionnaires' disease occurred in Vila Franca de Xira (Lisbon, Portugal), in November

2014. A total of 375 cases were confirmed, which made this one of the world's biggest outbreak reported. The case fatality was 3.2%. An industrial wet cooling system was the source of the outbreak. Most patients required hospital admission and a significant percentage required intensive therapy unit (ITU) facilities.
Objective: To identify the clinical features of severe community-acquired *Legionella* pneumonia patients admitted to ITU during the outbreak.
Methods: We retrospectively reviewed the patients' demographics, comorbidities, diagnosis, treatment and clinical outcome.
Results: Six patients with the diagnosis of community-acquired *Legionella* pneumonia were admitted to our ITU during the outbreak. All patients lived and/or worked in Vila Franca de Xira. They were male, with a mean age of 52 years (range 39-67). Their risk factors were smoking, alcohol intake, immunosuppression and diabetes. Two patients had new neurological dysfunction. Consolidation on chest X-ray was bilateral in 50%. Laboratorial changes included hyponatraemia (67%), acute kidney injury (50%), rhabdomyolysis (50%) and new liver derangement (100%). Legionella urinary antigen (LUA) confirmed the diagnosis. Levofloxacin was started at the emergency room. At admission one patient was in shock and the remaining had severe sepsis; all of them had respiratory failure. Five patients needed mechanical ventilation. Prone ventilation was used in two patients and one of these required extracorporeal membrane oxygenation. The mean length of stay was eight days at ITU. All patients were discharged without relevant sequelae.
Conclusions: The early diagnosis of LP and the early recognition of its severity were crucial for the prompt treatment and contributed for the good outcome in these high risk patients.

Keywords: *Intensive therapy unit. Legionnaire's disease.*

PO 122. RADIOLOGIC MANIFESTATION OF LEGIONELLA PNEUMONIAE AND IT CLINICAL CORRELATION IN AN INTENSIVE CARE UNIT

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Introduction: Legionella species are implicated in 2-15% of community-acquired pneumonia (CAP) cases. These organisms usually cause patchy infiltrates that frequently progress despite initiation of appropriate antibiotic therapy and clinical improvement. Resolution of infiltrates may be slow, and the tendency for delayed clearing should be considered before progressing in therapeutic or initiating further invasive diagnostic investigation.
Objective: Study the radiographic manifestations of *Legionella pneumophila* CAP and identify the relationship between clinical/analytical improvement and imaging evolution, under appropriate antibiotic therapy.
Methods: Retrospective and observational analysis of the patients hospitalized in polyvalent intensive care unit (PICU) of Prof. Doutor Fernando Fonseca Hospital, who were > 18 years old with a diagnosis of *Legionella pneumophila* CAP, from January 2012 to July 2015 (42 months), based on medical records. The diagnosis was established by the isolation of the microorganism in cultures, serology or positive antigenuria.
Results: Among the 40 patients diagnosed with *Legionella pneumophila* CAP, 11 were transferred to the PICU, 73% men, 27% women, between 24 and 80 years old, with an average age of 54.5 years. Of the 11 patients enrolled in the study, 5 of them had an unilobar infiltrates on chest radiography, 2 a multilobar unilateral infiltrates and 4 bilateral infiltrates. Among the 6 patients with multilobar involvement, 5 (83.3%) had a PaO2/FiO2 reason < 150; and among the 5 patients with unilobar involvement, 4 (80%) had a PaO2/FiO2 > 150. Three of the 11 patients were admitted at PICU for septic shock requiring hemodynamic support and mechanical ventilation, all of them with multilobar involvement. The radiological evolution was characterized by a worsening of the infiltrates in 9 patients (81.8%): 8 of them on the third day and 1 on the fourth day of their admission. Furthermore there had been a decline of CRP after 24 hours of appropriate antibiotic in 9 patients (82.8%) and after 48 hours in 2 patients (18.2%). Radiological improvement was documented in 72.7% of the cases only on the 5th day of hospitalization. The average of PICU stay was 8.2 days and total hospital stay 15.8 days.
Conclusions: There was a greater clinical severity (hypoxemia and hemodynamic instability) among patients with multilobar infiltrates. Although there was an analytical improvement with appropriate antibiotic therapy, there was an initial imaging deterioration that should not justify by itself a change in antibiotic therapy neither the performance of further invasive complementary tests.

Keywords: *Community acquired pneumonia. CAP. Legionella. Radiography.*

PO 123. HOSPITAL MORTALITY PREDICTORS IN CRITICALLY ILL PATIENTS WITH LUNG CANCER

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Introduction: The in-hospital mortality rate of lung cancer patients admitted to the Intensive Care Unit (ICU) has been decreasing in recent years; current estimates point to a mortality rate of 22-47%. This decrease in mortality is attributed to the improvement of care in intensive care environment and increased overall survival of patients with lung cancer. However, hospital mortality predictors in critically ill patients with lung cancer are still to be identified.
Objective and methods: The authors present a descriptive analysis of ICU admissions in patients with lung cancer over a 5-year period. Study variables included demographic and clinical parameters namely age and gender; histological type; TNM stage; Performance status (PS); admission diagnosis, APACHE II and SAPS II scores; Charlson comorbidity score, and in-hospital mortality rate. We performed a comparative analysis of the subgroup of patients who died during hospitalization in order to identify predictors of in-hospital mortality.
Results: The population included 29 lung cancer patients (mean age 64 ± 12 years; 86.2% male) admitted to the ICU over a 5-year period. The histological types of lung cancer in this population included adenocarcinoma (65.5%), squamous cell carcinoma (13.7%), small cell carcinoma (17.2%) and carcinoid tumor (3.4%). 69% had advanced disease (stage IIIb or IV), 48.2% had PS ≥ 2; and 82.8% were treatment-naive. 58.6% were admitted due to an acute event including community-acquired pneumonia (34.6%), health care associated pneumonia (6.9%), nosocomial pneumonia (6.9%), acute pulmonary edema (3.4%), iatrogenic hemoptysis (3.4%) and iatrogenic gallbladder perforation (3.4%). The elective admissions (41.4%) occurred in the context of post-operative surveillance after brain metastasectomy. Upon admission, mean Charlson, APACHE II and SAPS II scores were 3 ± 2.6; 17 ± 7 e 34 ± 14 respectively. The in-hospital mortality rate was 20.7%; the patients who died during ICU admission course were older (70 ± 12 vs 62 ± 11; p = 0.01), were admitted for an acute event (35.3% vs 0%; OR 1.6; p = 0.02), and had higher APACHE (23 ± 9 vs 15 ± 6; p = 0.04) and SAPS (48 ± 12 vs 30 ± 12; p = 0.03) scores. Gender, Charlson score, advanced stage (IIIb or IV), previous treatment for cancer and PS were not significantly different in patients who died compared to the remaining population. In multivariate analysis, the only

independent predictor of in-hospital mortality was the SAPS II score (r2 = 0.28 Exp (B) 1.8; p = 0.03).
Conclusions: The severity of organ dysfunction on admission to the ICU expressed by the SAPS II score was the only independent predictor of in-hospital mortality. The presence of advanced stage lung cancer, PS, and the presence of comorbidities (Charlson score) did not predict a fatal outcome during hospitalization. These findings suggest that the prognosis of lung cancer patients admitted to ICU is determined by the severity of organ dysfunction on admission, and not by the stage of the tumor, performance status, or the presence of other comorbidities.

Keywords: *In-hospital mortality. Intensive Care. Lung cancer.*

PO 124. *LEGIONELLA* PNEUMONIA (OUTBREAK) - QUALITY OF LIFE AND MORTALITY AFTER DISCHARGE FROM ICU

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Introduction: During the outbreak of pneumonia, caused by *Legionella pneumophila,* in November 2014 in Vila Franca de Xira (n = 345), multiple patients required admission in the intensive care. The Quality of life (QoL) and mortality 6 months after discharge have been identified as promising indicators of the long-term impact of the critical illness.
Objective: QoL and mortality assessment six months after discharge from ICU in patients admitted for pneumonia caused by *Legionella pneumophila*, in the context of an epidemic outbreak.
Methods: Six patients, admitted to our respiratory ICU with confirmed diagnosis of *Legionella* pneumonia connected to the outbreak, were studied. One was excluded for intra-unit mortality. For the assessment of baseline and 6 months after discharge QoL, the Portuguese EQ-5D validated questionnaire was used, allowing the calculation of the EQ-5D Index. Questionnaires and informed consent were made via telephone and a retrospective evaluation of medical records was performed. The obtained EQ-5D index was compared with that of the general Portuguese population. Correlation methods were used in order to identify predictors of QoL and long-term mortality.
Results: Five patients, with a median age of 55 years [44-63] and of which 3 were women, were included. All presented a confirmed diagnosis of antigenuria, and culture in bronchial secretions 4/5. At admission, all patients presented: partial respiratory failure (median PaO_2/FiO_2 201 [65-388] and $PaCO_2$ 30.6 [28-32] mmHg); APACHE II median 17 [16-19]; CRP elevation (median 37 [33-45] mg/dL); and hypoalbuminemia (median 2.9 [1.7-3.7] mg/dL. Three patients were supported with NIV, two required support with IMV and one was transferred to another ICU to be submitted to ECMO. The mean EQ-5D index six months after discharge was 0.75360 (± 0.24) showing no difference when compared with the expected value for the Portuguese population. Most of the patients presented moderate problems in the "Mobility" and "Usual Activities" dimensions. The difference of the EQ-5D index, prior to admission and 6 months after discharge, did not show to be statistically significant (p = 0.603). None of the laboratory variables or severity scores at admission showed a relationship with the EQ-5D Index. However it was possible to establish a correlation between prior QoL index and at 6 months (p < 0.05). There was no mortality after hospital discharge.
Conclusions: In this study, no significant differences between the QoL 6 months after discharge of UCI and to the QoL of general population were observed, contradicting previous studies. On the other hand, we observed that QoL 6 months after discharge from the ICU seems to better correlate with the prior level QoL than laboratorial values or severity scores on admission, in accordance with previous studies. It is important to mention that the small sample size made unfeasible to reach statistical significance in some of the evaluated relations and the implementation of the EQ-5D questionnaire by telephone made impossible the application of an analog scale.

Keywords: *Quality of life. Mortality. Legionella. Outbreak.*

PO 125. RISK FACTORS FOR PNEUMOCOCCAL PNEUMONIA: RETROSPECTIVE ANALYSIS IN AN INTENSIVE CARE UNIT

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Introduction: Pneumococcal pneumonia is the most common cause of community-acquired pneumonia. However, the agent is isolated only in 5-18% of cases. Several risk factors are associated with their development, including heart failure, COPD, immunosuppression, dependence on alcohol or tobacco and bronchiectasis. These factors associated with the type of ventilation implemented during therapy might influence the outcome.
Objective: To evaluate the main risk factors associated with pneumonia Streptococcus pneumoniae in patients admitted in the Intensive Care Unit, relating demographic characteristics, duration of hospitalization and outcome.
Methods: Retrospective analysis through the medical records of patients consulting with the diagnosis of pneumonia by streptococcus pneumoniae intake in the period June 2003 to June 2015.
Results: During the period described were admitted 43 patients with a diagnosis of pneumonia admission by Pneumococcus, the vast majority of patients were male (60.5%), with an age group are in excess of 80 years (32.6%). The average length of stay was 13.6 days and most patients were admitted from the emergency department and Internal Medicine, corresponding to 39.6% of admitted in both groups. The group analyzed 12 patients died (27.9%) and within this group, a large percentage required mechanical ventilation (6.7%). The second risk factor associated with worse prognosis was arterial hypertension (50%), followed by heart failure (41.6%). The age group associated with higher mortality was the patient over the age of 70 years (41.4%).
Conclusions: In this study, the authors intend to identify risk factors that most associate with poor prognosis in pneumonia by pneumococci. The identification of potentially modifiable risk factors can determine the success of therapeutic measures.

Keywords: *Pneumococcal pneumonia. Risk factors. Intensive care. Ventilation. Heart faillure. COPD.*

PO 126. FROM CARDIAC TAMPONADE TO PULMONARY TUBERCULOSIS

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Introduction: Mycobacterium tuberculosis can spread and install in any organ. The pericardial involvement occurs mainly with pericardial effusion of gradual evolution, being a rare form of tuberculosis. In this case, dyspnea is an early symptom. Chest pain can occur in anterior position and it has pleuritic characteristics. The fever is frequent, and a can be associated with tachycardia, paradoxical pulse, asthenia, anorexia, weight loss and night sweats. A chest X-ray shows increased cardiac silhouette The echocardiogram is currently the best test for diagnosis of pericardial effusion. The diagnosis is made by presence of bacilli in

direct examination and pericardial fluid culture or in a pericardial biopsy sample.
Case report: Patient 83 years, male, a retired miner. Personal history to mention pulmonary silicosis, hypertensive heart disease and benign prostatic hyperplasia. He appealed to the Emergency Service (ES) of our hospital with dyspnea, chest pain of pleuritic features and paroxysmal nocturnal dyspnea, with about 5 days of evolution, and after flu-*like* illness. Analytically with elevated infection parameters and radiologically with increased cardiothoracic ratio without pleural-parenchymal changes. It was interpreted as respiratory infection with decompensated heart failure. He was discharged medicated with amoxicillin/clavulanic acid. About 6 days later returns to the ES for worsening of symptoms and previous onset of fever. Presented worsening of inflammatory parameters and erasing right costophrenic angle on chest radiograph, and was hospitalized for treatment and surveillance. It held up study, including transthoracic echocardiography, which showed moderate to severe pericardial effusion (maximum thickness 21 mm), circumferential, with partial collapse of the free wall of the right atrium, with hemodynamic compromise. He did pericardiocentesis therapeutic and diagnostic, with output of about 40 ml of serohematic liquid, the result cytochemical was compatible with tuberculosis, with subsequent laboratory confirmation. After it was made microbiological sputum study that showed positive BAAR (result later confirmed by culture). He initiated directed therapy, with rifampin, isoniazid, pyrazinamide and ethambutol, with clinical and analytical improvement.
Discussion: Tuberculosis is a disease with a variety of presentations, which-makes diagnosis difficult. A high index of suspicion is essential. The diagnosis of extrapulmonary forms becomes even more difficult because most of the time are hard to reach places and with fewer bacilli. This case reports an unusual situation where the diagnosis of pulmonary tuberculosis was later the diagnosis of extrapulmonary tuberculosis, in this case, pericardial.

Keywords: *Tuberculosis. Cardiac tamponade. Silicosis. Pericardial effusion.*

PO 127. THE PROSPECT OF A SERVICE: PNEUMONIA CAUSED BY *STAPHYLOCOCCUS AUREUS* AND IDENTIFICATION OF RISK FACTORS

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Introduction: *Staphylococcus aureus* is a commensal bacteria but able to invade and cause disease in previously healthy tissue in any organ. It is currently one of the major causes of community acquired infections and that one associated with health care.
Methods: Retrospective study. Analysis of clinical process of patients admitted to the Intensive Care Unit (ICU) with a diagnosis of pneumonia by *Staphylococcus aureus* between April 4, 2002 and March 25, 2015.
Results: In the defined period were identified 89 cases of *Staphylococcus aureus* pneumonia. Of these, 82 were resistant to methicillin (MRSA). Most patients were male (69%), with an average age of 72 years (minimum 29 years and maximum 91 years). Age groups with greater representation were the groups between 70 and 80 years and 80 to 90 years, with about 35% of patients each. This condition represented a total of 2,289 days of hospitalization in the ICU, with an average of 26 days of hospitalization (maximum 177 days and minimum 2 days). Approximately one third of patients were admitted from the inpatient medicine. Twenty-six patients died in the unit; of those who improved the most returned to inpatient medicine. The number of cases per year was variable; with a relative peak in the years 2004, 2006, 2007 and 2013, years in which there have been 10 or more cases of pneumonia caused by Staphylococcus aureus. Until March this year, there were already 5 cases, the same number as the total months of the previous year. Of the studied variables (chronic obstructive pulmonary disease, bronchiectasis, invasive ventilation or non-invasive, high blood pressure, heart failure, alcoholic or smoking) it was found that most patients had prior cardiovascular disease (approximately 87%) and only 16% had an established diagnosis of pulmonary pathology. As for habits were identified six smokers and two patients with marked alcoholic habits. Approximately 74% of patients underwent mechanical ventilation, most of these prior MRSA infection.
Discussion: The severity of this infection is reflected not only in high mortality (about 29%) but also the high number of days of hospitalization. The invasive ventilation is the main risk factor for MRSA pneumonia, and prior cardiopulmonar conditions influence the clinical pathology and prognosis.

Keywords: *Staphylococcus aureus. MRSA. Pneumonia. Risk factors.*

PO 128. A DIFFERENT CAUSE FOR CHEST PAIN

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Introduction: Acute Chest Syndrome (ACS) is a frequent acute complication of sickle cell disease (SCD). It presents with chest pain and other respiratory symptoms, fever and new infiltrates on chest X-ray (CXR). ACS has a multifactorial aetiology and can be triggered by respiratory infections, microvascular pulmonary infarction, fat embolism and alveolar hypoventilation. Hypoxia is a useful predictor of severity and the patient can evolve rapidly to respiratory failure. Treatment should be aggressive with pain medication and antibiotics. Also both simple and exange blood transfusion (EBT) can be indicated.
Case report: Male patient, with 28 years old, born in São Tomé e Príncipe and working in a grocery store. Past medical history of SCD (SS genotype) diagnosed during childhood and post transfusion C Hepatitis, followed by a hematology specialist. Medicated regularly with hydroxyureia and folic acid. He was admitted to the emergency department with sudden bilateral chest pain that failed to improve with ibuprofen and paracetamol. He also complained of stuffed nose and dry cough for 5 days. Admission blood tests showed Hb 10.4 g/dl, VGM 83.5 fL, HGM 26.7 pg, leucocytosis (16,260), CRP 1.8 mg/dl, raised bilirrubin (3.2 mg/dl) and LDH (1,063) levels and negative troponin. CXR and electrocardiogram were normal. Patient was admitted in Hospital Pulido Valente (HPV) in an Internal Medicine ward with sickle cell crisis. During his stay at the ward he had worsening chest pain, fever, sputum and type 1 respiratory failure (arterial blood gas analysis on FiO2 24% with pH 7.42, pCO2 43 mmHg, pO2 48 mmHg; HCO3 27.2 mmol/L, SaO_2 84%, PaO_2/FiO_2 = 200). CXR revealed new infiltrates on both lungs, aggravated anemia (Hb 7.6 g/dl HbS 74%) and raised inflammatory markers. He started on amoxicillin/clavulanate and azithromycin and was admitted in the Intensive Care Unit of HPV with ACS caused by respiratory infection and severe type 1 respiratory failure. Two EBT were made with the removal of 450 ml of blood followed by simple blood transfusion with reduction of HbS to 54.9%. Pain was controlled with a morphine perfusion and he completed 7 days of piperaciline/tazobactam and 5 days of azythromicin. At the time of discharge the patient was clinically and radiologically improved. Inflammatory markers decreased, Hb value raised to 8,8 g/dl and bilirrubin was normal.
Discussion: ACS is a serious and potentially lethal complication of SCD. It should always be suspected when patient presents with chest pain and new infiltrates on CXR. Exange blood transfusion

can reduce the number of circulating sickle cells and haemolysis, improving oxygenation and preventing vaso-occlusive events. This was essential in this case for fast clinical improvement, preventing the need of mechanical ventilation.

Keywords: *Acute chest syndrome. Sickle cell disease.*

PO 129. RESPIRATORY SUPPORT TO NEUROMUSCULAR PATIENTS: OUR EXPERIENCE

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Introduction: Neuromuscular diseases (NMD) are a heterogeneous group of conditions that may involve the respiratory muscles, compromising the effectiveness of alveolar ventilation and the ability to cough. Monitoring of such patients is very important, particularly in the early detection of hypoventilation and treatment of chronic respiratory insufficiency with ventilatory support.
Objective: Characterize the group of patients with NMD followed in an outpatient clinic during the year of 2014. Present the experience in follow up these patients in our center.
Methods: Retrospective analysis including all patients followed in our Respiratory Support to Neuromuscular Outpatient Clinic during the year 2014. Socio-demographic data, diagnosis and time of disease progression, treatment and duration of NIV were evaluated.
Results: 104 patients were included (70 men) with a mean age of 42 ± 19.8 years. Motor neuron diseases/Amyotrophic lateral sclerosis (MND/ALS) were diagnosed in 29 patients and several types of muscular dystrophies (MD) were diagnosed in 25 patients. 77 patients were under NIV. 38 patients had in-exsufflator (I-E). Patients with MND had an average time of disease progression and average duration of NIV of 6.4 ± 5.9 and 2.7 ± 3.6 and years, respectively. 14 patients with ALS had bulbar impairment and 10 patients had PEG. Only one patient died from respiratory infection during the year. Patients with MD had an average time of disease progression and average duration of NIV and of 22.8 ± 10.4 and 8.2 ± 6.2 years, respectively.
Discussion: The experience of our center is reflected in the high number of ventilated patients with significant time of disease progression and duration of NIV. We think that these results are related to a well-organized structure in the outpatient clinic, as well as emergency room and hospitalization.

Keywords: *Neuromuscular diseases. NIV. experience.*

PO 130. TRAUMATIC PNEUMOTHORAX BY ESOPHAGEAL PERFORATION

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Introduction: Esophageal perforation is a serious clinical condition. Iatrogenic perforation accounts for 70% of the causes of esophageal perforation, the other causes are more rare as spontaneous perforation, traumatic or foreign objects. Most iatrogenic cases are related to endoscopic interventions (removal of foreign body, dilation of stenosis, sclerosis of varicose veins, excision of polyps and mucosectomy). The pneumothorax is defined as the presence of air between the visceral and parietal pleurae, and is classified as tension pneumothorax when there is accumulation of air under pressure in the pleural space. Can be traumatic or spontaneous. The most frequent causes of iatrogenic pneumothorax are pleural biopsy, thoracentesis, central venous catheter placement and mechanical ventilation.
Case report: A 69-year-old man without relevant personal history, came to emergency room with a sudden chest pain stab type. Cardiopulmonary auscultation without alterations. The abdomen was distended and painful in epigastrium. The ECG and the cardiac enzymes showed no change. Abdominal CT scan showed a foreign body 3 cm in the distal esophagus. By endoscopy was removed the foreign body (rabbit bone). After that started with a sudden dyspnea, worsening chest pain associated with hypotension, tachycardia and desaturation. The lung auscultation showed reduced breath sounds more evident at the right hemithorax, so immediately performed a thoracic CT that revealed a esophageal perforation complicated with bilateral pneumothorax, pneumomediastinum and subcutaneous emphysema. The patient was transferred to intensive care where was with bilateral thoracic drainage, under mechanical ventilation for 3 weeks, and triple antibiotic therapy.
Discussion: Pneumothorax presents symptoms as chest pain, dyspnea, tachycardia and anxiety that put the differential diagnosis with common diseases as acute myocardial infarction, pulmonary embolism, pericarditis, pleural effusion and aortic dissection. Despite the esophageal perforation by endoscopic examinations to be rare, the fact that symptoms arise following the removal of the foreign body did us to think on iatrogenic esophageal perforation. The tension pneumothorax can quickly progress to respiratory failure, cardiovascular collapse and death, so early detection and drainage were vital for this patient.

Keywords: *Pneumothorax. Esophageal perforation.*

PO 131. A DISGUISED NEOPLASIA OR A MIX OF BOTH DISEASES?

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Introduction: Adenocarcinoma is the most common type of lung cancer (50% cases), usually having a peripheral location. Histologically is divided into several subtypes based on the pattern of growth and invasion, including adenocarcinoma lepidic predominant (formerly bronchioloalveolar carcinoma pattern). Their frequency is low, with a predominance of females and higher incidence between the 5th and 6th decades, with reference however to younger individuals. Radiologically can present localized or diffuse and may have a lobar pneumonia pattern and even mimic interstitial lung disease (ILD). The association between neoplasia and ILD, although rare, is described in the literature. Although there is no agreement regarding the most common histological type in this association, peripheral tumors appear to be more frequent. The pathogenic mechanisms proposed to explain the increase in lung cancer risk in ILD remain unclear.
Case report: Female, 39 years, non-smoking, previously healthy, sent to Pneumology consultation in 2013 for recurrent respiratory infections. Computerized tomography (CT) chest showed significant thickening of dif-fuse interlobular septa and several foci of consolidation with bilateral air bronchogram and another area of condensation with multiple calcic focuses on the right lower lobe (LID) with chronic appearance that excludes hypothesis of infectious etiology. The most probable hypotheses suggested were diffuse interstitial disorder, or vasculitis. In both flexible bronchoscopies there were no endobronchial changes and both cytology of bronchial lavage and histology of the bronchial and transbronchial biopsies were negative, either to DPI or cancer. The patient was proposed for surgical biopsy, but abandoned the follow-up at this stage. It is admitted in the emergency room 16 months later with a typical picture of respiratory infection. A chest CT scan showed frank worsening of parenchymal and interstitial changes known and multiple bilateral mediastinal and hilar adenopathies.

During hospitalization it was performed a transthoracic aspiration biopsy whose anatomical and pathological findings were consistent with adenocarcinoma with areas of mucinous lepidic growth, which marked for TTF-1 and whose mutation in the EGFR gene research was negative.
Discussion: Adenocarcinoma of lepidic growth has a slow and insidious development and radiographically may mimic different lung diseases. The clinical case presented here was clinically challenging first as the clinical context (young patient with a disease with several years of evolution) led to consider the possibility of DPI as the most likely. Although history does not allow us to completely rule out the possibility of an overlapping DPI (being, however, rare this association) with this case we pretend to aim the ability to mimic capacity of this subtype of adenocarcinoma and highlight the impor-tance of suspect lung cancer even in young non-smokers patients.

Keywords: *Adenocarcinoma lepidic predominant. Interstitial lung disease. Transthoracic aspiration biopsy.*

PO 132. AN UNCOMMON ETIOLOGY OF ACUTE HEPATITIS

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Hospital Garcia de Orta.

Case report: Male, 58 years old, naval operator. Smoker since 16 years old (24 pack-years). Without drinking habits and no outpatient therapy, including herbal medicines. Observed due to malaise, asthenia, anorexia and loss of 5 kG in the last three months. In the week preceding observation in the emergency room, progressive fatigue, with nausea and burning sensation in the right upper abdominal quadrant. Laboratory evaluation showing 15.8 × 10^9 leukocytes/L with 87% neutrophils, CRP 11.2 mg/dL, prothrombin time 33%, AST 3,273 IU/L, ALT 4,213 IU/L, total bilirubin 0.5 mg/dL, LDH 5,031 IU/L, albumin 2.49 g/dL, acetaminophen 1.3 ug/nL, with negative serology for HIV, HBV and HCV. Arterial blood gas showing partial respiratory failure and microbiological examination of blood cultures and sputum sterile. Chest X-ray showed bilateral interstitial infiltrates, most prominent in the area adjacent to the right hilum, with deletion of the left costodiaphragmatic recess. Subsequently, the patient was submitted to thoracic-abdominal-pelvic TC scan that revealed infiltrative pulmonary lesion (77 × 55 mm) involving the right upper lobe at the level of the posterior segment, from hilum to pleura; mediastinal lymphadenopathy suggestive of neoplasm secondary involvement and important bilateral pleural and pericardial effusions; massive lobulated hepatomegaly with heterogeneous contrast uptake probably due to perfusion abnormalities related with congestion. Pericardial effusion was confirmed by echocardiography with subsequent pericardiocentesis. The effusion turned out to be an exudate, with negative microbiological examination and cytology negative for neoplastic cells. The patient was submitted to bronchofibroscopy with evidence of enlarged carina likely due to extrinsic compression, enlargement of the spur dividing the right main bronchus ant the upper lobe bronchus related to extrinsic compression, with hyperemic and friable mucosa. Transbronchial pulmonary biopsy was suggestive of undifferentiated non-small cell lung carcinoma. Brain CT and bone scan didn't show any evidence of metastases and among tumor markers, there was an increased in CEA (13.8 ng/mL), Ca 125 (1,113 U/mL) and cyfra 21-1 (13 ng/mL). The patient was diagnosed with undifferentiated non-small cell lung carcinoma associated with pericardial effusion (stage IV), with clinical presentation as acute hepatitis due to cardiac tamponade. Taking into account his performance status (score 0), he was proposed for chemotherapy with paclitaxel.
Discussion: The tobacco and exposure to other smoking and inhaled substances, including asbestos, are considered the main risk factors for the development of bronchopulmonary and pleural neoplasms. The lung cancer can evolve over several months or years without any signs or symptoms, and in many patients the first clinical manifestations frequently arise from secondary involvement of other organs. In this patient, he wouldn´t have been observed in the emergence room if it was not for the ischemic hepatitis caused by secondary pericardial effusion, since he had no respiratory symptoms.

Keywords: *Lung cancer. Undifferentiated non-small cell lung carcinoma. Metastases. Pericardial effusion. Acute hepatitis.*

PO 133. THE OTHER SIDE OF PNEUMONIA

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Hospital Garcia de Orta.

Case report: Female, 42 years old, designer. Healthy without smoking or drinking habits and no outpatient therapy. Observed due to cough with mucous sputum and chest tightness located at the sternum for two weeks, associated with progressive dyspnea and fatigue. During this period, loss of 12 kg. Without fever. She had already completed two antibiotic treatment cycles associated with bronchodilator therapy, without any improvement. At admission, tachycardia and diminished breath sounds in the lower half of the left hemithorax, with subcrepitant rales on the right basis. Laboratory evaluation show-ing 14.2 × 10^9 leukocytes/L with 91.8% neutrophils, LDH 595 IU/L, CRP 7.5 mg/dL, D-dimer 0.57 ug/ml with negative serology for HIV, Legionella pneumophila, Mycoplasma pneumoniae and Chlamydia pneumoniae, negative assay of antinuclear antibodies and ANCAs. Arterial blood gas showing severe partial respiratory failure and microbiological examination of blood cultures and sputum sterile. Chest X-ray showed heterogeneous hypotransparency in the middle third of the right lung field and in the lower third of the left field and chest CT scan displaying extensive parenchymal consolidation with air bronchogram involving the entire left lower lobe, suggesting inflammatory/infectious lung disease, with other confluent parenchymal opacities in several lobes on the right with the same etiology; without signs of pulmonary thromboembolism. In this context, the patient was diagnosed with bilateral community-acquired pneumonia and initiated therapy with ceftriaxone and clarithromycin. By the end of antibiotic therapy there was only analytical improvement, without leukocytosis or neutrophilia and negative CRP. However, clinical symptoms and radiological images remained the same. The patient was submitted to bronchofibroscopy, with evidence of nonspecific bronchial inflammatory changes and secretions revealed no microorganisms. Cytological examination suggested breast/lung adenocarcinoma. She performed breast ultrasound showing multiple cystic formations without malignancy characteristics, and cutting transthoracic biopsy with histology revealing pulmonary adenocarcinoma, with papillary, micropapillary and lepidic patterns. Brain CT scan and bone scan didn't show any evidence of metastases and among tumor markers, there was only an increase in Ca 15.3 (42.8 UI/mL). In the setting of pulmonary adenocarcinoma stage IV, with 0 performance status, the patient began treatment with carboplatin plus paclitaxel and was assessed for the presence of EGFR and ALK mutations.
Discussion: Adenocarcinoma is the most common lung cancer, with papillary, micropapillary and lepidic patterns associated with invasive disease. Despite tobacco being the major risk factor, a third of patients is non-smoking. Clinical presentation ranges from often asymptomatic solitary pulmonary nodule to diffuse parenchymal infiltrates, similar to bacterial pneumonia, with cough, dyspnea, hemoptysis and systemic symptoms such as fever or weight loss. Hypoxemia and bronchorrhea may also be present and are potentially life-threatening. The most common metastatic sites include the contralateral lung, bone, adrenal gland and brain. Treatment

depends on the stage and includes surgery, radiation therapy and cytotoxic chemotherapy or targeted therapy, the latter in patients with mutations in the EGFR and/or presence of ALK fusion oncogene.

***Keywords**: Lung cancer. Pulmonary adenocarcinoma. Pneumonia. Severe respiratory failure. Bronchorrhea.*

PO 134. NEOPLASTIC PLEURAL EFFUSION – A PARTICULAR CASE-

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Introduction: The breast cancer is rare in male, representing approximately 1% of all cases of breast cancer and less than 1% of all malignancies occurred in male. It is rarely diagnosed in asymptomatic phase due to the absence of screening as occurs in women. Generally appears in men with advanced age and in most cases it manifests initially through a clear mass at breast level and other form of presentation is rare.
Case report: The authors describe a case of a 81-year-old healthy men which was to the emergency department with complaints of cough with little mucus sputum associated with chest pain on the right with pleuritic characteristics, asthenia, anorexia and weight loss unquantified with one month of evolution. Later referred onset of right breast swelling that linked to probable insect bite. The objective examination in emergency department showed auscultation with decreased breath sounds in the lower third of the right lung field associated with decreased vocal vibrations, compatible with pleural effusion; also not painful breast swelling on right and skin eritematose coloring. The patient underwent thoracentesis and pleural biopsies. The cytology of pleural fluid was consistent with infiltration carcinoma that was confirmed by biopsy pleural a breast carcinoma origin. The patient held breast ultrasound and mammography with evidence of massive nodular lesion on the right with high density and strong necrotic component (BIRADS 5) which is guided biopsy showed treat a well differentiated invasive ductal carcinoma with 100% positive estrogen receptor, 90% positivity receptor progesterone and Her 2 negative. The patient was referred to Senology consultation having been proposed for hormonoterapy.
Discussion: The authors describe this case by the rarity of the breast cancer in male and the rare form of presentation through initial complaints of pleural effusion.

***Keywords**: Pleural effusion neoplastic. Breast cancer. Male breast.*

PO 135. GASTROINTESTINAL METASTASIS IN LUNG CANCER – REPORT OF TWO CLINICAL CASES

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Introduction: The lung cancer is the leading cause of cancer death worldwide, wherein more than 50% of cases develop metastatic lesions at the time of diagnosis. Gastrointestinal metastasis in lung cancer is rare, few cases being reported in the literature, with an estimated prevalence of approximately 0.2 to 0.5% of cases. The most frequently observed location is at the level of the small intestine, and any location confers a worse prognosis when compared to the natural course of the disease. The authors describe two clinical cases of lung cancer with extrapulmonary metastasis at the time of diagnosis that developed comproved gastrointestinal metastasis in the course of the disease.
Case reports: The first case is a male patient, smoking 39 units pack/year, which was diagnosed with non-small cell lung carcinoma. At the time of diagnosis the patient showed stage IV metastatic lesion by the level of the left adrenal gland. The patient held 1st line chemotherapy with Cisplatin Gemcitabine and wherein after completion showed disease progression that occurred by increase of primary lung injury. Later the patient presented with severe abdominal pain with objectified mass in terms of the physical examination. For this reason held colonoscopy that showed injury at the level of the transverse colon whose histology was compatible with pulmonary adenocarcinoma origin. The second case is owned by an individual male, non-smoker, with no relevant medical history which was diagnosed non-small cell lung carcinoma in the context of dry cough with right omalgia. At the diagnosis time had exuberant liver and bone metastasis. Started 1st-line chemotherapy with carboplatin and paclitaxel and in the course of therapy showed severe abdominal pain with intestinal obstruction complicated with perforation and generalized peritonitis. The patient underwent urgent surgery with small bowel resection segment whose histology showed infiltration by poorly differentiated carcinoma of probable pulmonary origin.
Discussion: These two cases describe a location of uncommon lung cancer metastasis and bring to discussion if gastrointestinal metastasis is really rare or, as several studies say, may be underdiagnosed by gastrointestinal symptoms be considered as part of widespread disease or as a side effect of treatment used.

***Keywords**: Lung cancer. Gastrointestinal metastasis. Abdominal pain.*

PO 136. NEGATIVE RESULT? ALWAYS CHECK

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Introduction: Smoking is the major risk factor for lung cancer. Lung cancers are divided into two main groups: small cell lung cancer and non-small cell lung cancer. The non-small cell lung cancer is the most frequent, being the most common adenocarcinoma followed by squamous cell. The diagnosis is made according to clinical history, physical examination and diagnostic tests. The five-year survivorship is about 16%.
Case report: Female patient, 78 years old, leucodermic, retired (former secretary), smoker (55 pack per year), with previous diagnoses of chronic obstructive pulmonary disease, type 1 respiratory failure, hypertension, type 2 diabetes mellitus and dyslipidaemia. In February 2014, a chest computed tomography (CT) was performed and showed: "In the posterior basal segment of the left lower lobe (LLB), an unfilled cavitated nodule with a thin and thick wall, with major axis of 31 mm is visualized. Peripheral densification that give rise to suspicion of current exudative processes are not defined. Diffuse centrilobular emphysema pattern in small areas, most clearly in the upper lobes." Subsequently, in the bronchoscopy (BFC) that was realized it was not possible to observe an endobronchial mass and the results of the biopsies were negative. In October 2014, the patient presented a clinical condition with one month of evolution of dyspnea, fatigue and cough with serous sputum. The physical examination showed diminished breath sounds globally, without other audible sounds. The analysis were normal and the arterial blood gas (FiO2: 21%) performed showed type 2 respiratory failure decompensated (pH: 7.31; pCO2: 67.4 mmHg; pO2: 55.6 mmHg; SO2: 84.1%). The chest X-ray did not present any hypotransparencies suggestive of pneumonia. The patient was admitted in the General Department of Pulmonology of Hospital de Santa Maria due to type 2 respiratory failure decompensated and noninvasive ventilation with bi-level was started, to which responded favorably. During hospitalization, a chest CT scan was performed: "Basal linear densification of atelectasic/fibrotic nature. Cavitated lesion of the LLB with 3 cm practically filled by hypodense content. Centrilobular emphysema pattern of apical dominance". After discussion in clinical meeting, it was decided to carry out Transthoracic Needle Aspiration

(TTNA) of the nodular lesion in the LLB, which anatomo-pathological result was cytologic and phenotypic standard (p63+), suggestive of squamous cell cancer.
Discussion: Tobacco use is responsible for 80% to 90% of the cases of lung cancer. The diagnostic yield of BFC in peripheral carcinomas, not visible endoscopically, is estimated between 30% and 70%, while the TTNA presents an overall diagnostic sensitivity exceeding 90% even in small lesions. The complementary diagnostic tests, complement each other, so the negative result of BFC should be confirmed, if necessary, by TTNA.

Keywords: *Lung. Squamous cell cancer. Transthoracic needle aspiration.*

PO 137. PLEOMORPHIC CARCINOMA OF THE LUNG IN A PATIENT WITH A INTRACARDIAC MASS

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Introduction: Pleomorphic carcinoma of the lung (PLC) is an extremely rare type of lung malignancy, with a poor clinical outcome. It is currently classified as a non-small cell lung carcinoma poorly differentiated that contains sarcoma or sarcoma-like components (spindle cells/giant cells).
Case report: The authors report a case of PLC in a 72 year-old patient, former smoker, with dysphonia and progressive weight loss with approximately two weeks of evolution and two episodes of syncope. Physical examination showed an anterior cervical tumoral mass. The computerized tomography scan evaluation revealed the presence of several cervical and mediastinal lymphadenopathies, a subglottic vegetative formation on the right side of the trachea and an expansive process with the involvement of upper and lower left pulmonary lobes. The imaging study showed additionally multiple bilateral pulmonary nodules, liver and spleen nodules. Bronchoscopy confirmed the presence of a tracheal mass, that occupied about 80% of the tracheal lumen. The patient was then submitted to rigid bronchoscopy for the removal of the subglottic mass by photocoagulation with Nd: YAG laser with a complete removal of the mass. The histological study revealed aspects consistent with pleomorphic carcinoma of the lung. Echocardiography showed an intracardiac mass in the right ventricle. Cardiac magnetic resonance imaging was suggestive of tumor metastasis. It was scheduled heart surgery that did not take place, because of the unfavorable evolution.
Discussion: The pleomorphic carcinoma of the lung (CPP) remains a diagnostic and therapeutic challenge with many questions still unanswered. The prevalence of pleomorphic carcinoma of the lung (CPP) is of approximately 0.1-0.4% of all lung cancers, mainly occurs in males, with an average age of onset at 59 years. In 60-70% of cases, it appears initially as a peripheral mass without endobronchial involvement, often invading adjacent structures and showing a rapid evolution. It relates with a poor outcome: surgery, radiotherapy and chemotherapy are generally ineffective. Because of its rarity and diagnostic difficulties, the authors describe the clinical aspects of this clinical case.

Keywords: *Pleomorphic carcinoma of the lung. Intracardiac mass.*

PO 138. TRACHEAL MALT LYMPHOMA SUCCEDING ORBITAL MALT LYMPHOMA – CASE REPORT

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Introduction: MALT lymphomas are B-cell non-Hodgkin lymphomas that appear in extranodal sites, which usually don't have organized lymphoid tissue. The most frequently involved organ is the stomach but there are reports of MALT lymphomas appearing in another locations of the digestive tube, lung, skin, thyroid gland, orbit, thymus, breast and others. Non-gastric MALT lymphomas have an indolent course, usually localized to the primary organ at diagnosis. Prognosis is favorable, with prolonged survival. Tracheal MALT lymphoma is exceedingly rare, regardless of primary or secondary involvement[3], representing less than 0.5% of tracheal tumors, probably because of the paucity of lymphoid tissue in this location in comparison, for instance, with the lung. It has similar features to the other non-gastric MALT lymphomas concerning staging at diagnosis, response to treatment and prognosis, making it an important differential diagnosis in tracheal lesions. This case describes tracheal involvement in a patient with history of orbital MALT lymphoma. There are some case reports of tracheal MALT lymphoma but this will be the first one in Portugal.
Case report: Male, 86 years old. Non-smoker. History of temporal arteritis, arterial hypertension, with chronic antiaggregation therapy, and non-Hodgkin MALT lymphoma of the right orbit diagnosed in July of 2013, Ann Harbor IEA stage. He underwent chemotherapy with 8 cycles of chlorambucil and prednisolone and radiotherapy, total dosing of 40 Gy, finishing treatment in May 2014 with residual mass. He was sent to the CHTMAD ER from the external consultation of hematology in 6/7/2015 for moderate hemoptysis for one week, and non-quantifiable weight loss for a month. He was previously medicated with azithromycin for 5 days, 500 mg/day, with no results. On admission, he had bibasal crackles in pulmonary auscultation, with no other alterations in the remaining physical exam. Laboratory data showed normal levels of hemoglobin and platelets and nor-mal coagulation tests. Chest X-ray revealed loss of volume on the right lung, already known before, without other alterations. Chest CT angiography was performed and showed doubtful alterations considering the possibility of PTE and retrotracheal lesion, with invasion of the tracheal lumen. The patient was admitted to our hospital for symptom control and further study. He also underwent ventilation/perfusion scintigraphy which indicated intermediate probability of pulmonary thromboembolism. ORL examination excluded superior airway lesions and local invasion of the orbital lymphoma. Finally, the patient underwent fiberoptic bronchoscopy that revealed a hypervascularized neoformative lesion of the posterior wall of the trachea, causing decrease of the tracheal caliber in about 50%, without airway obstruction. Biopsy and bronchial brush were performed. Histological analysis indicated involvement of the tracheal mucosa by non-Hodgkin lymphoma of the marginal zone (MALT lymphoma), of low grade.

Keywords: *Orbital MALT lymphoma. Tracheal MALT lymphoma. Hemoptysis.*

PO 139. PRIMARY ENDOBRONCHIAL LEIOMYOSARCOMA: A RARE AND DIFFICULT TO DIAGNOSE CASE

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Case report: A 85 year old female patient, non-smoker, former farmer, was presented with persistent non-productive cough and progressive exertional dyspnea for several months and in the week before coming to the emergency department of our hospital, initiated left pleuritic chest pain and wheezing dyspnea. No fever or hemoptysis was reported neither complaints in other systems. As medical history, she had a medically controlled systemic hypertension, obesity and type 2 diabetes. The physical examination showed decreased vesicular murmur in the lower 2/3

of the left hemithorax, without adventitious sounds. Laboratory tests showed leukocytosis with neutrophilia, LDH: 464 U/L and CRP: 2.88 mg/dL. Gasometry showed type 1 respiratory failure. The imaging evaluation showed total left atelectasis with apparent fulfillment of the bronchial tree by soft tissue, which was confirmed by flexible bronchoscopy. As bronchial biopsies were inconclusive, the patient was submitted to rigid bronchoscopy. YAG laser therapy was performed and solved the obstruction of the main left bronchus. The biopsies of the lesion identified a leiomyosarcoma. The patient is being followed in the pulmonary oncology outpatient department.
Discussion: Primary pulmonary sarcomas are rare tumors that account only 0.2% to 0.5% of all lung tumors, being the leiomyosarcoma the most common. The diagnosis is difficult because the patients usually present with nonspecific symptoms, bronchoscopy is not the best method for the collection of histological samples as these tumors show no tendency to exfoliate, unlike epithelial tumors. In this case the diagnosis was possible after the excision of the tumor. Tumors to consider in the differential diagnosis are: carcinoid tumor, undifferentiated carcinoma, carcinosarcoma, intrapulmonary thymoma or lymphoma. First line treatment is surgical resection. Unresectable or poorly differentiated tumors can perform palliative chemotherapy or radiotherapy treatment. The median survival is 48 months and the 5-year survival ranges from 38% to 48%.

***Keywords**: Leiomyosarcoma. Endobronchial tumor. Laser therapy.*

PO 140. SMALL-CELL LUNG CARCINOMA: AN UNEXPECTED DIAGNOSIS AT AGE 20

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Introduction: The small-cell lung carcinoma (SCLC) is a neuroendocrine tumor of rapid growth, representing 13% of all malignant lung tumors. It is more frequent among 60-80 years-old and rare under 40 years-old.
Case report: The authors report the case of a 20 years-old male, gypsy, basket maker, occasional smoker, with no other toxic habits, without relevant pathological history or parental consanguinity. Refers to the emergency department with moderate hemoptysis, right chest pain, excessive sweating and constitutional symptoms with 15 days of evolution. The patient was feverish, hemodynamically stable and at the pulmonary auscultation had decreased breath sounds in the lower half of the right hemithorax. Laboratory tests showed microcytic/hypochromic anemia (hemoglobin 12.17 g/dl), elevated LDH (656 U/L) and CRP (11.2 mg/dl). Radiologically was visible an hypotransparency of ill-defined limits in the 2/3 lower right hemithorax associated with mediastinal enlargement. Thoraco-abdominal CT scan performed showed a right hilar mass with involvement of different mediastinal compartments with compressive effect on air and vascular structures, causing it to shift to the left, associated with small right pleural effusion and hepatosplenomegaly without focal lesions. It was admitted to the pulmonology department for study. In bronchoscopy it was visible an enlargement of the carina and the presence of whitish lesions in the right B3, intermediate trunk and initial portion of the middle lobar bronchus with marked stenosis of the entry of the right lower lobar bronchus, not allowing the observation of its segments. Histological examination of the bronchial biopsies were consistent with poorly differentiated neuroendocrine tumor (small-cell carcinoma). Tumor markers were normal except for a slight elevation of alpha-fetoprotein (12.6 IU/ml). It was discussed at a meeting oncology group and decided to carry out transthoracic biopsy to confirm the diagnosis, given the small sample obtained by bronchoscopy. The transthoracic biopsy was also compatible with small-cell carcinoma. Clinical staging determined a T4N3Mx. The patient started chemotherapy with carboplatin and etoposide and was referred for oncologic pulmonology consultation for further monitoring and treatment.
Discussion: Although the clinical and radiological presentation is characteristic of an SCLC, the authors present this case by the rarity of cases reported this histological type of lung tumor under 40 years-old, in a patient with low smoking history.

***Keywords**: Young. Small-cell carcinoma.*

PO 141. TRACHEAL TUMOR IN A YOUNG PATIENT

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Introduction: Primary tracheal tumours are rare (less than 2% of tumours in the bronchial tree), 40% of which are due to adenoid cystic carcinoma. Being slow growing with little initial symptoms, adenoid cystic carcinoma can go unnoticed or be confused with other obstructive pathologies (namely asthma) for months/years.
Case report: A 31-year old woman, non-smoker, referred a beginning of productive cough, dyspnea on exertion and wheezing during third trimester of pregnancy. After examination, respiratory infection was excluded and symptoms were considered to be related to pregnancy. Due to maintenance of the clinical presentation in post-partum, she had a pulmonology consultation where bronchial asthma was considered. She was medicated with bronchodilator, received instruction to pass complementary exams and to come back 2 weeks later. In the reassessment, she denied a significant improvement with established treatment, referring inspiratory stridor and keeping of wheezing and dyspnea on exertion. Analytically with no relevant change. Chest radiography with reduction of tracheal diameter in its median portion. It was decided to do bronchoscopy which revealed an extensive mammillated mass on the anterior and left lateral walls of the thoracic trachea, reducing lumen in 80% and infiltrating the carina and left main bronchus (LMB). A rigid bronchoscopy with laser therapy and mass resection were done, leading to tracheal permeability recovery. After the procedure, a relief of symptoms was noticed. Anatomic pathology compatible with adenoid cystic carcinoma. Neck, chest and abdominal computed tomography with tracheal thickening from thoracic operculum to its bifurcation with extension to LMB, contacting with adjacent mediastinal structures, with no clear signs of invasion. Patient was sent to radiotherapy.
Discussion: Due to tumoral extension at diagnosis, adenoid cystic carcinoma is frequently unresectable, being radiotherapy and/or chemotherapy indicated and endoscopic laser resection for tracheal permeability recovery in cases of severe obstruction.

***Keywords**: Adenoid cystic carcinoma. Rigid bronchoscopy.*

PO 142. ANAPLASTIC LARGE CELL LYMPHOMA, A RARE PRIMARY LUNG NEOPLASM

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Introduction: Non-Hodgkin's lymphoma arising in the lung is rare, accounting for only 0.3% of primary lung neoplasms. The majority of lymphomas are low-grade B-cell type, asymptomatic at presentation, having an indolent clinical course. Up to 20% are high-grade neoplasms, typically presenting with respiratory/constitutional symptoms and have a poorer prognosis. The presentation of an intraluminal large airway mass is unusual for hematologic lesions of the lung. Anaplastic Large Cell Lymphoma (ALCL) is a high-grade neoplasm. There are very few cases of

Primary pulmonary ALCL reported in literature (to our knowledge less than 50). The mean age of these case reports is 44.6 years. Extranodal disease is common, with skin being the most frequently reported extranodal site. Lung involvement may occur as a result of dissemination in up to 12% of cases.
Case report: 85-year-old male, former smoker (10 pack-years). His past medical history included hypertension, hyperlipidemia and allergic rhinitis, under medical treatment. He presented to our emergency department complaining of a several-month history of progressive weakness, asthenia, anorexia, weight loss, productive cough with mucoid sputum and left pleuritic chest pain. In a chest X-ray performed 10 days earlier there were small linear basal opacities predominantly on the left-side, suggesting mild discoid atelectasis. At physical examination, performed at rest without supplemental oxygen, he was cyanosed but had a normal respiratory rate without other signs of respiratory distress; SaO2 89-93%; vital signs were stable. Breath sounds were absent on left hemithorax, remaining unchanged on the right. Arterial blood gas analysis revealed hypoxemia, hypocapnia and hyperlactacidemia; Other significant blood tests results included increased inflammatory markers, positive D-dimer and impaired renal function. A new Chest X-ray revealed opacification of the left hemithorax suggesting atelectasis, with left shift of the trachea. Pulmonary CT angiogram showed a 4.5 cm mass occluding the distal left main bronchus, causing a subtotal atelectasis with liquid bronchogram (subocclusive bronchial stenosis). The mass also invaded the left lower lobe pulmonary artery causing a non-acute Pulmonary Embolism (PE). The patient was admitted to the Pulmonology department for treatment and etiologic investigation of the left main bronchus mass. Pertinent findings on the following studies included: Negative microbiologic examinations. Bronchofibroscopy revealing a well-circumscribed and vascularized round-shaped mass occluding left main bronchus. Cytology of the bronchial secretions (BS) was suspicious. Rigid bronchoscopy with repermeabilization of apical lobe and two sub-segmental lobes of lower left lobe. The upper left lobe was destroyed. Purulent BS were removed. BS citology was suggestive of non-small cell carcinoma. Histologic examination of endobronchial mass revealed large cell anaplastic lymphoma (ALK-positive). Elevated levels of serum CA 19.9. No evidence of metastasis in staging exams. Post-obstructive pneumonia was treated with antibiotics and the patient was discharged under oxygen and anticoagulant therapy. He was referred to Haematology outpatients and began chemotherapy.
Discussion: This is a case of a rare primary lung neoplasm, occurring in an older-than-usual patient and with a singular presentation as a rapidly-growing endobronchial mass causing atelectasis.

Keywords: *Anaplastic large cell lymphoma. Pulmonary neoplasm. Primary lung lymphoma.*

PO 143. SPONTANEOUS REGRESSION OF COMBINED SMALL CELL LUNG CANCER

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Introduction: Spontaneous regression is the complete or partial disappearance of a malignant tumor without anticancer therapy. There are cases described in several types of cancers but it is a rare phenomenon in lung cancer, particularly, in small cell lung cancer (SCLC). The combined SCLC, accounts for one third of the SCLC cases, and is defined as the presence of a further component of non-small cell lung cancer (NSCLC).
Case report: A 80-year-old man, ex-smoker (40 pack-years), was referred to our hospital for investigation of a pulmonary nodule. He had a medical history of cardiovascular comorbidities, ischemic stroke, right carotid occlusion and left carotid stenting. The physical examination was normal. Chest computed tomography (CT) scan revealed a peripheral nodule in the right upper lobe with 27 × 22 mm and centrilobular emphysema. The patient underwent a transthoracic aspiration biopsy, whose pathological findings were positive for SCLC. The positron emission tomography (PET-CT) scan had showed increased uptake in the nodule (SUVmax 7-10) without other suspected lesions and the brain magnetic resonance was normal. The case was discuted with a multidisciplinary team, and because of the age of the patient and the significant cardiovascular comorbidities, it was decided to initiate chemotherapy. For personal reasons the patient missed the appointments, not doing any anticancer therapy for about eight months. After repeated contact attempts by the team, he is reassessed in an appointment. Being asymptomatic and with a good performance status (ECOG 0), the new staging showed a decrease in the nodule (18 × 12 mm) without systemic metastasis again con-firmed by PET-CT (reduction of the lesion in about 50%). Reavaliated in the Lung Multidisciplinary Meeting, after review of the results and corroborating of the diagnosis by Pathology, it was proposed surgery. During surgery, for evidence of multiple lung adhesions, it was performed only atypical pulmonary resection without complications. Histology of the piece was consistent with SCLC combined with areas of adenocarcinoma. At the moment, the patient is expecting reassessment in Oncology for adjuvant chemotherapy decision.
Discussion: Spontaneous tumor regression is rare in SCLC, with only seven cases described in the literature. Although several hypotheses have been proposed - immunological and hormonal factors - the mechanism of spontaneous regression remains unknown. The combined SCLC is a histological variant of pure SCLC, included in the WHO classification, usually with poor response to conventional chemotherapy, and whose incidence has been increasing with the optimization of diagnostic techniques. Our clinical case highlights the importance of a multidisciplinary team and depicts a rare occurrence in tumor biological behavior, the spontaneous partial regression. The uniqueness of the case further relates to the fact that it is found in a combined SCLC with adenocarcinoma.

Keywords: *Lung cancer. Spontaneous regression. Combined small cell lung cancer.*

PO 144. UN UNEXPECTED LUNG MASS

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Introduction: An insidious onset of respiratory symptoms associated with pulmonary mass and subsequent development of neurological symptoms is highly suggestive of lung cancer. The authors report a case in which the histological diagnosis was unexpected.
Case report: Female, 35 years old, non-smoker, sent to Pneumology consultation for cough in the last two months, initially with mucous expectoration, than purulent, than with hemoptysis in the last two weeks. She also mentioned weight loss, 15 to 20 Kg in the last 20 months, associated with asthenia and anorexia. On the physical examination, decreased breath sounds in the upper half of the right lung field were observed. Blood test showed microcytic hypochromic anemia, thrombocytosis and elevated PCR. Chest radiograph revealed a bulky homogeneous hypotransparency on the right lung field that was further characterized with computed tomography as a large solid mass in the right lung – 140 × 88 × 149 mm – with well defined contours, necrotic core, absence of air bronchogram, occupying the entire middle lobe and the anterior and posterior segments of the right upper lobe, with collapse of the respective segmental bronchi. Flexible video bronchoscopy detected a mass occluding the posterior subsegment of the RULB and another on the lateral subsegment of MLB. Remaining bronchial

tree unchanged. Bronchial lavage was collected for pathological, bacteriological and mycobacteriological study, all were negative, and the endobronchial lesions were biopsied for histopathological examination. In the next consultation, the patient complained of headache and dizziness. Neurological examination revealed left nistagmus and apparent reduction of the left visual field. An urgent cranial MRI was requested, which revealed a space-occupying lesion in the right internal occipitoparietal area, with regular borders, about 37 × 27 mm, most likely a metastatic lesion. The pathological results showed lymphocytic infiltration of the bronchial mucosa, with CD20+, BCL2+, MUM1+, CD23+ focal, CD10-, BCL6-, MYC-, CD5- e CD3-, ki67 ≈ 70% cells, consistent with diffuse large B-cell lymphoma. The patient underwent chemotherapy with high dose Cytarabine and Etoposide, with initial good response.
Discussion: Lymphomas can appear in virtually any tissue in which lymphocytes are present, however, primary pulmonary presentation is rare. The central nervous system can be secondarily affected, most of the cases in the context of recurrent disease and in relation to more aggressive histological subtypes and patients with low performance status. In the reported case, the absence of risk factors for central nervous spread makes a rare presentation itself an even more atypical one.

Keywords: *Non-Hodgkin lymphoma. Diffuse large B-cell lymphoma. Lung cancer. CNS metastasis.*

PO 145. A CASE OF A LUNG MASS FROM AN INFREQUENT SOURCE

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Introduction: Unicentric Castleman's disease is a localized lymphoproliferative disease, rare, that most often appears in young adults. Occurs in the thoracic region in 24% of cases, the surgical resection is the main treatment and is curative in most cases. In the few cases where complete resection is not possible, supplementary treatments should be considered, but this is still a matter of discussion.
Case report: The authors present this clinical case for its rarity, and because of its location and high vascularized tissue has proven unresectable. It's a male patient of 33-year-old, lecturer, smoker of 10 pack units/year, without other relevant personal history, which went to the Emergency Department (ED) with a clinical course of three weeks, consisting of fever (38 ºC) in the first week and then cough with mucopurulent expectoration, which became bloody-tinged three days before going to the ED (07/12/2014). On physical exam, the patient was cooperating, eupneic, apyretic and hemodynamically stable. In cardiopulmonary auscultation stood out rude breath sounds with crackles at the right lung base. The blood analysis didn't show leukocytosis, neutrophilia, increased CRP or procalcitonin, or alteration of other parameters. The ABG was also normal. BK sputum analysis was also negative. Radiologically presented an image of heterogeneous hypotransparency located in the middle 1/3 of right lung. He was released from the ED with the diagnosis of community-acquired pneumonia, treated with amoxicillin/clavulanic acid and clarithromycin. The reassessment, 12 days later, showed significant clinical improvement. However the X-ray had a homogeneous hypotransparency well defined on middle 1/3 of internal half of right lung field with about 4 cm in diameter. For further investigation a chest CT was made, which revealed a mass of 44 × 32 × 24 mm located on the lower half of oblique fissure. Fiberoptic bronchoscopy revealed no macroscopic changes and bronchial lavage showed no cancer cells and microbiology were negative. The evaluation by PET-CT demonstrated increased FDG uptake only at the level of the chest injury with maximum SUV of 5.1. The patient underwent thoracotomy in April 2015, revealing a capsulated nodular mass at the confluence of the great and the small fissures, firmly adherent to the emergence of the middle lobar bronchus, making it impossible to remove all of the lesion. The histology showed follicular hyperplasia with lymphoid follicles with small germinal centers, lymphocyte edge of the expanded mantle, sometimes with concentric arrangement. There was vascular proliferation with numerous hyalinized wall vessels, some in the edge of the mantle, others in the germinal centers. These histological aspects were consistent with Castleman's disease, hyaline-vascular form. The patient is under medical supervision in IPOFGL, having made a new PET-CT in July 2015 which showed increased FDG uptake in a right hilar mass with 44 mm in diameter and SUV 3.09.

Keywords: *Castleman's disease. Unicentric. Hyaline-vascular. thoracotomy. Lymphoproliferative disease.*

PO 146. A RARE CAUSE OF SOLITARY PULMONARY NODULE

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Hospital Garcia de Orta.

Introduction: Inflammatory myofibroblastic tumor (IMT) is a rare disease, accounting for 0.7% of all lung tumors. The etiology of IMT is unknown, although some theories suggest an inflammatory reaction to a pulmonary infection. Pathologically, IMT is composed of a variable inflammatory and mesenchymal cellular mixture including plasma cells, histiocytes, lymphocytes, and spindle cells. Patients with IMT are usually asymptomatic, with a solitary nodule or mass detected by routine chest roentgenograms. Surgical resection is recommended as the diagnostic method and treatment of choice.
Case report: We report the case of a non-smoking 59-year-old woman, native of Mozambique, with a past of pulmonary consultations due to sporadic episodes of hemoptoic sputum and small-volume hemoptysis of unknown etiology, without radiographic or bronchoscopic lesions. In 2013 she presented an episode of moderate-volume hemoptysis related with effort, and in this context a chest computed tomography (CT) was performed, which detected a new small pulmonary nodule, irregular, not calcified, with dimensions 8 × 6 mm, located in the apical segment of the left lower lobe. A positron emission tomography with computed tomography (PET-CT) was requested and displayed an increase in fluorodeoxyglucose (FDG) uptake in the nodule described (maximum SUV 3.8). The patient was led to Thoracic Surgery and underwent left lower lobectomy and mediastinal lymph node dissection. Histology of the surgical specimen revealed proliferation of spindle and inflammatory cells with predominance of eosinophils and plasma cells - morphologic characteristics and immunohistochemical profile suggestive of TIM. The excised lymph nodes were negative for tumor cells. The patient was reassessed 3 months later, and a new nodular opacity, with 7 mm and low density, was detected in the middle lobe. The PET-CT showed pre-aortic, pre-carinal and left hilar lymph nodes metabolically active with increased FDG uptake. There was no increased avidity at other locations, including the described opacity. Transbronchial aspiration endobronchial guided by ultrasound (EBUS-TBNA) was performed in a lymph node of 4R station with 6.9 mm, and the cytology sample was negative for tumor cells, showing reactive changes only. Currently, the patient is followed in our consultation. She is asymptomatic without new episodes of hemoptysis, with performance status of 0, and presents *radiological stability* without evidence of locoregional recurrence.
Discussion: IMT is a rare tumor but should be kept in mind when ruling out a diagnosis of a solitary pulmonary nodule. Although the outcome after resection is usually excellent, long-term follow-up is necessary because of reported cases of recurrences many years after resection.

Keywords: *Inflammatory myofibroblastic tumor. Rare lung cancer. Solitary pulmonary nodule. Hemoptysis.*

PO 147. A CASE OF NONRESOLVING PNEUMONIA

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Hospital Garcia de Orta.

Introduction: Primary pulmonary lymphoma is rare, representing only 0.5 to 1% of all primary pulmonary malignancies. MALT lymphoma (extranodal marginal zone B-cell lymphoma of MALT - *mucosa-associated lymphoid tissue*) is the most frequent subset of primary pulmonary lymphoma (70%). Its development has been reported to be associated with chronic inflammation due to auto-immune or infectious diseases, or tobacco. Most patients are asymptomatic at the time of diagnosis, but if symptoms are present they are usually non-specific. This entity exhibits diverse patterns of lung abnormality on CT scan, but the commonest are single or multiple bilateral nodules or areas of consolidation. The optimal therapy for this rare disease remains under debate.
Case report: We report the case of a 78-year-old male patient, ex-smoker with 80 pack-year smoking history, presenting with asthenia and dyspnea on exertion with a month of evolution, associated with productive cough and purulent expectoration. The patient received empirical antibiotic therapy without improvement, and under these circumstances he went to the emergency room. In the initial evaluation, he was sub-febrile with crackles in the lower 2/3 of the right hemithorax, without leukocytosis but with slightly increased CRP (5.2 mg/dl), and had mild acute hypoxemic *respiratory failure*. The *chest radiograph* showed a heterogeneous consolidation with air bronchogram in the middle 1/3 of the right lung field. The patient was hospitalized and diagnosed with pneumonia acquired in the community. He received empirical antibiotic therapy and blood cultures and sputum tests were performed, the results of which were negative. Due to the absence of clinical improvement and aiming at clarifying the roentgenographic signs, the patient underwent thoracic-abdominal-pelvic CT scan. It showed a pulmonary parenchymal consolidation associated with air bronchogram in the middle lobe and superior part of the lower lobe; a small peripheral nodule in the lingula; and an unspecific and slight wall thickening in the sigma-rectum transition and stomach. In this context, a videobronchoscopy was performed and non specific inflammatory changes were observed in the right bronchial tree. The cytological, histological and immunohistochemical studies of bronchial secretions, brushing and biopsies were consistent with B-cell lymphoma of MALT. The patient refused gastrointestinal endoscopy to examine the lesions described above. Currently, the patient is followed in Hemato-Oncology consultation. He is receiving chemotherapy, with partial response to therapy.
Discussion: The authors intend to highlight the low incidence of this entity and its nonspecific symptoms and roentgenographic findings. Furthermore, it should be emphasized that the non-infectious diseases masquerading as infectious pneumonia must be considered in all patients with non-resolving pneumonia who have been adequately treated.

Keywords: *MALT lymphoma. Lung. Pulmonary consolidation. Pneumonia.*

PO 148. RARE CAUSE OF ATELECTASIS IN PEDIATRICS

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Case report: The authors describe the case of a 13-years-old Caucasian girl. She was previously healthy and had no relevant medical record. She went to the Emergency Department complaining of pleuritic chest pain in the right hemithorax associated with dry cough with 3 days of evolution that had started during basketball practice. On admission she was feverish, hemodynamically stable and with SpO2: 97% (FiO_2 21%). The chest's evaluation revealed semiology of atelectasis in the lower third of the right hemithorax. Blood analysis demonstrated leukocytosis (20.3×10^9/L) with neutrophilia (79%) and increased CRP (254 mg/dL). Chest X-ray revealed a right lower lobe condensation. Thoracic CT confirmed the right lower lobe atelectasis, together with a homogeneous endobronchial nodule with regular borders located in the intermediate bronchus causing partial obstruction, and lymphadenopathy at 4R and 7 mediastinal stations. She was admitted to the Pediatrics Department started antibiotics and improved both clini-cal and analytical. A flexible bronchoscopy confirmed the obstruction of the intermediate bronchus by a rounded and vascularized lesion with a smooth surface. She was submitted to a rigid bronchoscopy with resection of the endobronchial lesion. Pathological examination revealed a typical carcinoid tumor (CK 8/18 +, CD56 +, Chromogranin A and synaptophysin +, without necrosis and with < 2 mitosis/10 HPF). Then, she was referred to our institution for staging and treatment. The patient performed 68 Ga-DOTA-NOC PET/CT which revealed abnormal hyper fixation at the intermediate bronchus (SUV: 5.5) and hyper fixation at mediastinal adenopathy (10R, 4R and 7), cT2N2M0. A sparing curative surgery was proposed. For that purpose an endoscopic revaluation was performed which revealed a mucosal prolapse that stretched from the middle lobe bronchus up to the right lower lobe bronchus. Based on those findings, she underwent an inferior bilobectomy with mediastinal lymph node dissection without intraoperative complications. In the postoperatory period she developed dyspnea and desaturation associated with hemoglobin drop (13 g/dL to 6.8 g/dl) and right pleural effusion. A hemostasis revision was performed without evidence of an active bleeding focus. Pathological examination of the surgical specimen confirmed a typical carcinoid tumor with mediastinal lymph node involvement (10R, 4R and 7) - pT2N2Mx.
Discussion: Primary lung tumors in children are extremely rare but about 75% of these are malignant. Of these, 80% are typical carcinoid. The clinical presentation is nonspecific translating into a dry cough, chest pain and hemoptysis in most cases. Its rarity may delay diagnosis. This case report highlights the importance of bronchoscopy as a diagnostic procedure in atelectasis. The definitive treatment in these cases is the surgical resection, even with lymphatic involvement, having the bronchoscopy its major indication in the resolution of obstructive complications.

Keywords: *Atelectasis. Bronchial obstruction. Carcinoid tumor. Pediatrics.*

PO 149. IS THE MALIGNANT PLEURAL MESOTHELIOMA INCIDENCE INCREASING?

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Introduction: Malignant pleural mesothelioma (MPM) is a rare tumor, with an annually incidence of 0.9/100,000. It develops mostly in men (male-to-female ratio of 3:1), and in fifth to seventh decade of life. Exposure to asbestos is a well-established aetiological factor for the disease, with occupational exposure

being documented in 70-80% of those affected, 35-45 years before the onset of disease. It has a poor prognosis, and the median survival is 11 months.
Objective: Evaluate the incidence and evolutionary trend of MPM over the past 11 years, at Prof. Doutor Fernando Fonseca Hospital.
Methods: Clinical audit, retrospective, of the patients diagnosed with MPM, over the past 11 consecutive years, from July 2004 to July 2015, at the Prof. Doutor Fernando Fonseca Hospital, in Lisbon. It was analysed medical records and collected data regarding: epidemiology, diagnostic methods, histology, staging, chemotherapy and survival.
Results: There were 17 patients identified with MPM, between 47 and 84 years, with an average age of 68.3 years, 82.4% men. Between July 2004 and December 2009 (5.5 years) there were documented 4 MPM (23.5%), having the incidence risen to 13 MPM (76.5%) between January 2010 and July 2015 (5.5 years), which corresponds to a 225% increase in the last 5 years. Seven patients (41.2%) had had documented asbestos exposure. The diagnosis was made by pleural fluid cytology and/or pleural biopsy in 10 cases. However 5 of these patients needed a second exam and 2 a third exam to made the diagnosis. For the remaining 7 patients, a thorachoscopy was needed. Fourteen patients (82.4%) were diagnosed in a later stage of their disease (III and IV stage). The most frequent histological type was the epithelioid (n = 12; 70.6%). Eleven patients began chemotherapy with pemetrexed and cisplatin, 1 patient with paclitaxel and carboplatin, 2 patients didn't do any therapy and 3 patients lost follow-up. Among 17 patients, it was documented 13 deaths to date, with an average survival of 8.8 months.
Conclusions: An increase of MPM incidence has been identified over the past 5 years at our hospital. However, more national studies are needed to confirm this trend.

Keywords: *Mesothelioma. Incidence.*

PO 150. DIFFUSE IDIOPATHIC PULMONARY NEUROENDOCRINE CELL HYPERPLASIA

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Introduction: Diffuse idiopathic pulmonary neuroendocrine cell hyperplasia (DIPNECH) is a rare pulmonary disease with a female predominance. Clinical signs are restricted to dyspnea, cough, obstructive lung disease and the occurrence of nodules on HRCT. The spectrum of pulmonary neuroendocrine cell proliferation ranges from reactive hyperplasia to small cell carcinoma and includes DIPNECH. DIPNECH is recognized as a preneoplastic condition by World Health Organization. The diagnostic is delayed because respiratory symptoms are ascribed to other lung conditions. Current understanding of clinical course is poor and based predominantly on small case series.
Case report: We report a case of a non smoker 75 years old woman with history of multinodular goiter and hypertension. She presented with slowly progressive dyspnea and cough and had airflow obstruction. Hemogram and biochemical determination in serum and urine were normal. Thoracic TC demonstrated multiple bilateral lung nodules of varying sizes between 1 and 6 mm, and a subpleural emphysema bubble in the left lung. Lung function tests revealed an increased resistance and signs of an obstructive pulmonary disease. Flexible bronchoscopy did no demonstrate any endoluminal alteration. The microbiological and cytological analysis of the bronchialveolar lavage did not present any abnormality. Transbronchial biopsy of the larger nodule was inconclusive. Given the multifocal nature of the lesions, secondary tumors lesions were considered possible. However, no neoplasic disease was detected by extensive investigation. Finally a surgical lung biopsy was obtained. Histological pattern demonstrated multiple foci of neuroendocrine cell hyperplasia and 7 "tumorlets" (1 to 4 mm) with associated bronchiolectasis. These findings were interpreted as a diffuse idiopathic pulmonary hyperplasia.
Discussion: DIPNECH is a rare entity that is recently being reported with greater frequency. The diagnosis should be considered when multiple small pulmonary nodules are identified on CT without any identifiable primary tumor. Additional research is needed to understand the natural history of this disease and validate diagnostic criteria.

Keywords: *DIPNECH. Diagnosis. Preneoplastic. Tumorlet.*

PO 151. TRANSBRONCHIAL CRYOBIOPSY IN DIFFUSE PARENCHYMAL LUNG DISEASE – THE EXPERIENCE OF A BRONCHOLOGY DEPARTMENT

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Introduction: Histology is a key element for the multidisciplinary diagnosis of interstitial lung diseases (ILD) when the clinical-radiological findings are nondiagnostic. Specimens from classical transbronchial lung biopsy lack sufficient quality due to crush artifact and are generally too small for diagnosis. The advent of transbronchial lung cryobiopsy (TBLC) made it possible to obtain large and well-preserved specimens of lung parenchyma that overcome classical TBLB pitfalls, making extremely useful in the diagnosis of ILD. Nevertheless experience with TBLC in ILD in Portugal is limited.
Objective: To describe our clinical experience using TBLC for diagnosis of diffuse lung disease.
Methods: Prospective study of patients undergone TBLC from May 2014 to June 2015 in the clinical-radiological setting of ILD with nondiagnostic high resolution computed tomography features. The selection criteria of patients for this procedure: FVC > 50%, DLCO > 40%, paO2 > 55 mmHg (FIO2 = 21%), without suspicion of sarcoidosis, pulmonary hypertension or blood dyscrasias. The procedure was performed using a rigid bronchoscope, a video bronchoscope and a 2.2 mm diameter cryoprobe to acquire biopsies of lung parenchyma with image intensification. H&E stained biopsies were reviewed by an expert lung pathologist. Final diagnoses were established in multidisciplinary meeting (MDM) after review of histologic, clinical and radiologic features.
Results: Twenty-six eligible subjects were identified (58 ± 12 years old): 21 patients were from the outpatient pulmonology consultation and 5 patients came from other hospitals. Mean values of lung function were 88.1 ± 20.9% of FVC and 62.8 ± 18.1% of DLCO. Radiological changes most frequently found were ground glass opacities in 14 patients (54%) and reticulation in 8 patients (31%). In 23 individuals (88.5%) TBLC were conducted in right lung and in 3 patients in left lung. Between 2 to 5 lung fragments/patient (median = 4) were collected and the size of the specimens ranged between 2 to 6 mm larger diameter (median = 4 mm). In 24 cases (92.3%) the samples showed good representation of pulmonary structures: lung parenchyma with interlobular septa. Twenty patients (76.9%) had diagnosis after MDM. The most frequent diagnoses were hypersensitivity pneumonitis (n = 7), followed by cryptogenic organizing pneumonia (n = 2), desquamative interstitial pneumonia (n = 2) and ILD associated with connective tissue disorders (n = 2). Other diagnoses achieved were nonspecific interstitial pneumonia, diffuse alveolar hemorrhage, non-necrotizing granulomatous inflammation and early silicosis nodules. In 4 patients surgical lung biopsy (SLB) was required. In 3 patients iatrogenic pneumothorax occurred requiring chest tube and hospitalization. There were no life-threatening complications.

Conclusions: Although TBLC has not yet been formally validated it appears safe and feasible in the diagnostic assessment of patients with ILD. Despite the recent introduction of this technique in our department our diagnostic rate after MDM was high and may eventually increase with practice. TBLC is associated with lower morbidity and could have an important economic impact by saving patients undergoing SLB.

Keywords: *Transbronchial cryobiopsy. Interstitial lung disease.*

PO 152. ALPHA 1 ANTITRYPSINE DEFICIENCY: DOES IT MATTER TO TRACK?

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Antitrypsin Alpha 1 is an anti-inflammatory protein of acute condition/phase produced in the liver, whose activity consists of the inhibition of neutrophilic elastase. Being active it has the capacity to destroy the lung parenchyma through the hydrolysis of the elastin fibers. The phenotypes which bestow a serious increase in the risk of developing lung disease are the ones which have the combination of faulty or null alleles.(S and Z). The deficit of Antitrypsin alpha 1 is one of the important hereditary genetic changes which arise worldwide. However, despite its strong propensity to chronic obstructive pulmonary disease, it remains underdiagnosed. It is now consistently said that smoking is the main risk factor for the development of DPOC. Furthermore, there is the anti-protease effect of antitrypsin alpha 1, among other processes also connected with the development of the obstructive disease, like oxidative stress and apoptosis of alveolar epithelial cells. The emphysema is the most common clinical form, being TC the most accurate exam in its evaluation. To detect the protein we have 3 types of testing, all of them quick, easy and accurate: Antitrypsin Alpha 1 dosing, to determine the quantity of protein circulating in the blood, Genotyping of Antitrypsin Alpha 1, to identify the inherited genes (M, S or Z); Antitrypsin Alpha 1 Phenotyping which also determines more rare genes (I, Mmalton, P, QoOurém) Several researches have advocated the making of routine tests for early detection of an important risk factor of the development of a disease which brings about one of the highest rates of morbidity and mortality in the world resulting in increasing economic costs. The making of these exams, namely at the level of primary care, (considering their relevance in disease prevention) will have advantages and disadvantages which makes the issue seem non consensual. It is our purpose to sum up the conclusions at this level.

Keywords: *Alpha 1-Antitripsyn. Pulmonary disease chronic obstructive. Emphysema.*

PO 153. TRANSESOPHAGEAL ENDOBRONCHIAL ULTRASOUND IN THE DIAGNOSIS OF A LUNG LESION

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Introduction: Endobronchial ultrasound-fine needle aspiration (EBUS-FNA) is a minimally invasive technique, used in the diagnosis and staging of lung cancer. This equipment is approved for use in the digestive tract (EUS-B) providing a comprehensive mediastinal staging. It also allows the diagnosis of paraesophageal pulmonary lesions.
Case report: 75 years-old Caucasian non-smoking women with hypertension, heart failure and dyslipidemia was evaluated due to persistent isolated dry cough, during the previous 9 months. Blood samples were unremarkable except for a sedimentation rate of 49. Chest X-ray showed a mild accentuation of the bronchovascular reticulum, especially on the right paracardiac region. Chest CT scan identified a grossly nodular area, without well-defined borders (25 mm larger diameter) in the upper right apical segment, adjacent to the esophageal recess, with contact to the mediastinal pleura, adjacent bronchiectasis and small calcification, with no apparent mediastinal lymphadenopathies. Flexible bronchoscopy revealed a normal bronchial tree and cytology, bacteriology, mycobacteriology and transbronchial biopsies were negative. The chest CT was repeated 3 months later and showed the same lesion without any dimensional changes. PET-CT proved a high FDG uptake (SUV 8.39). EBUS-FNA was performed and a right upper paratracheal heterogeneous hypoechoic lesion with 18 mm was observed. In the first transtracheal puncture the echogenic image disappeared and transitory desaturation was noted (gas interposition was suspected). Normal resonance and breath sounds were maintained in the right hemithorax. Multiple attempts to observe the lesion were unsuccessful. The echoendoscope was introduced through the esophagus, the lesion was visualized and trans-esophageal aspiration was performed. After the procedure, control X-ray had no evidence of pneumothorax. Histopathology confirmed a poorly differentiated lung adenocarcinoma.
Discussion: In patients with a suspicious lesion, adjacent to the central airways or esophagus and not visualized by conventional bronchoscopy, EBUS-FNA or EUS-B-FNA are valid diagnostic alternatives. Chest physicians, responsible for the correct diagnosis of lung cancer, should implement EUS-B-FNA in reference centers.

Keywords: *Endobronchial ultrasound. Lung cancer. Diagnosis.*

PO 154. PULMONARY ARTERY SARCOMA: ENDOBRONCHIAL ULTRASOUND DIAGNOSIS OF RECURRENCE

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Introduction: Endobronchial ultrasound (EBUS) is a minimally invasive and high accuracy procedure that allows the evaluation of extra-luminal lesions adjacent to central airways. Its main indication refers to the diagnosis and mediastinal staging of malignancies with thoracic involvement.
Case report: A 42 year-old Caucasian man, former smoker (20 packs per year), was evaluated in 2008 due to a second episode of community-acquired pneumonia. Chest CT revealed a normal lung parenchyma but an intraluminal image in the left pulmonary artery (differential diagnosis between pulmonary thromboembolism versus intra-arterial tumor). Thoracic MRI was suggestive of malignancy. A left pneumonectomy with lymph node dissection and vascular resection was performed. Pathology was compatible with a pleomorphic sarcoma of the pulmonary artery. Adjuvant chemoradiotherapy was started. Clinical and imaging stability was maintained for 5 years. In 2013, it was detected a low-attenuation filling defect with minimal thickening of the main pulmonary artery (differential diagnosis between scar tissue caused by the previous surgical manipulation versus tumor recurrence). EBUS confirmed the existence of an hypoechoic heterogeneous formation of about 12 mm in close contact with the pulmonary artery. Transbronchial aspiration allowed the diagnosis of tumor recurrence. Chemotherapy was restarted. Control CT at 6 months showed the existence of minimum repletion defect. Positron

emission tomography revealed no abnormal fixation at this location. EBUS was repeated for reassessment after 10 months and biopsies were negative for malignant cells. Seven years after diagnosis, the patient is under clinical and imaging surveillance (stable disease).
Discussion: Pulmonary artery sarcoma is an extremely rare neoplasm with a high mortality. In the present case, a multidisciplinary approach and use of EBUS proved crucial in establishing a correct treatment, with impact on survival.

Keywords: *Endobronchial ultrasound. Pulmonary artery sarcoma. Diagnosis. Staging.*

PO 155. AIRWAY PAPILLOMATOSIS: 3 CLINICAL CASES

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Introduction: Recurrent respiratory papillomatosis (RRP) is typically a benign and self-limited disease, which results from airway infection by human papilloma virus (HPV), with the formation of papillomas. Its distribution is bimodal as in childhood (2-5 years old) and adulthood (20-40 years old). The involvement of the lower airway occurs between 2% and 5% of patients with laryngeal papillomas and the involvement of the small airways occurs in less than 1%. In adults it's usually localized, with a less aggressive behavior. Malignant transformation is rare (0.38% of lung cancers) and is associated with prior radiation exposure and smoking. The diagnosis of PRR is made through bronchoscopy (BC) with biopsy of the lesions. We describe three clinical cases with involvement of the airway by HPV, diagnosed between May and July 2015, with distinct endoscopic aspects. The third case is a rare and potentially malignant situation.
Case reports: Case 1: 80 years old woman with a history of sarcoidosis, withhoarseness with one year of evolution, in which we observed in BC "millimetric polyp in the anterior third of the left vocal cord" whose pathologic results revealed "fragments with malpighian epithelium with acanthosis, with some cells of the intermediate layer showing nuclear hipercromaticidade compatible with papillomavirus HPV". Case 2: 59 year old woman with hoarseness with 2 years of evolution, consulted six months before by the otorhinolaryngologist wich didn´t find a reason for the complain. So she was submitted to BC that identified "mucosal hypertrophy of the posterior surface of the epiglottis near the vocal cords and arytenoid ". Biopsy showed "epithelial hyperplasia and papillomatosis, with nuclear hipercromaticidade, which may correspond to HPV infection". Case 3: 68 year old woman with a history of breast cancer treated with surgery, chemotherapy and radiotherapy which went to the hospital for cough with hemoptoic sputum. The BC identified "multiple polypoid formations, millimetric, regular edges and hard consistency in the anterior wall of the trachea and main bronchi", the result of biopsy identified" squamous metaplasia of the respiratory epithelium, accompanied by acanthosis, where the cells have expression of CK5/6 and CK7, with focal apparent keratinization morphology compatible with squamous papilloma".
Discussion: RRP is a rare disease in adults after the 4th decade of life, the main clinical manifestation is hoarseness. The BC is a fundamental diagnostic tool in the evaluation of this disease, which generally involves the larynx, but in some cases may involve the tracheobronchial tree.

Keywords: *Bronchoscopy. Human papilloma virus. Papilloma. Recurrent respiratory papillomatosis.*

PO 156. CLINICAL UTILITY OF MICROBIOLOGICAL SAMPLES COLLECTED BY BRONCHOSCOPY

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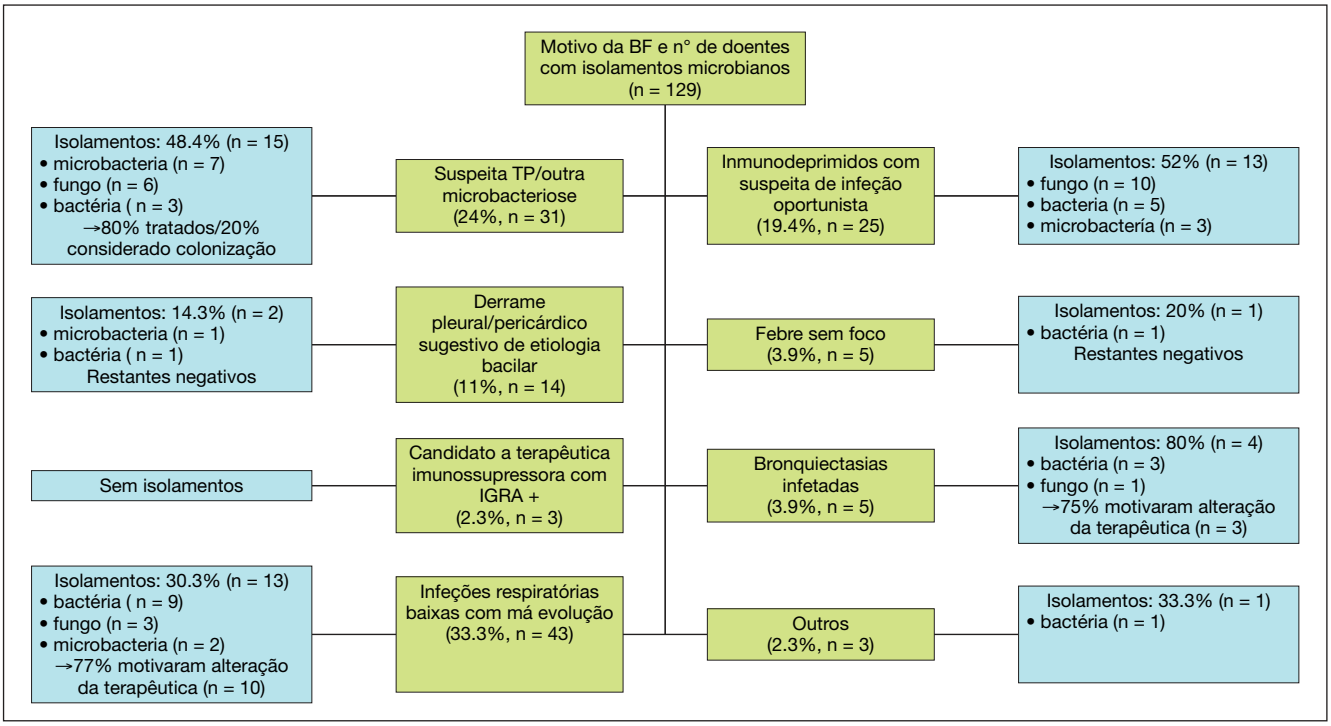
Introduction: Fiberoptic bronchoscopy (FB) is often required to collect bronchial aspirates (BA) and bronchoalveolar lavage fluid (BAL), especially in suspected pulmonary tuberculosis (PT), pneumocystis pneumonia, etiologic identification in refractory pulmonary infection to empirical antibiotic therapy and in immunocompromised patients.
Objective: Evaluation of the clinical utility of BA and BAL in patients undergoing FB for microbiological study.
Methods: Retrospective study of medical records of patients undergoing FB between January 2014 and June 2015.



Results: Met the inclusion criteria 129 patients (13.5% of exams), being mostly men (66.7%), non-smokers (54%), immunocompetents (76.7%), mean age 63 ± 17 years-old. In all patients BA was collected, in 13 cases (10%) it was also collected LBA. Mostly were referred from the internment (68% of which 66% of the internal medicine service), followed by outpatient (20.2%), urgency (11%, of which 93% of pulmonology) and pulmonology diagnostic center (0.8%). Most (65.1%) was under ≥ 1 antimicrobial, 12.4% were over ≥ 1 antimicrobial, 22.5% had not made any antimicrobial. In 40.3% was previously collected sputum (n = 52), of which 25% had microbial growths (n = 13), however the FB was performed by the maintenance of fever and/or radio-logical changes despite directed therapy (n = 4), by still no result of sputum (n = 2), for BAL collection for suspected *Pneumocystis carinii* pneumonia in immunocompromised patients (n = 2), suspected of mycobacterial infection (n = 2) and suspected aspergilloma (n = 1) despite the bacterial growth and detection of atypical mycobacterium in sputum for confirmation/diagnostic exclusion (n = 2). The reasons for the examination and respective microbial growths are described in the diagram (fig.). The most isolated microorganisms were *Aspergillus spp* (n = 13), *Mycobacterium tuberculosis* (n = 10) and methicillin-resistant *Staphylococcos aureus* (n = 9). In 32.6% of cases the result of BA/BAL led to the start of a specific therapy. The diagnostic yield of BA was 35.7% and the diagnostic yield of LBA was 46%. There was 1 case of cardiac arrest during FB, other complications were easily resolved in the patient's recovery room.
Conclusions: The collection of BA/BAL led to therapeutic change in less than a third of the patients, however, the absence of microbial growth can be as important as the microbiological identification, especially in suspected TP/other opportunistic infections. One of the most profitable group were immunocompromised, probably secondary to performing BAL in more cases. The number of microbial identification was slightly lower than that described in other series, which could be explained by the fact that the majority were under antibiotic for several days. Despite the low rate of complications, the FA is an invasive procedure and as such should be asked judiciously.

Keywords: *Fiberoptic bronchoscopy. Bronchial aspirate. Bronchoalveolar lavage. Microbiologies.*

PO 157. HEMOPTYSIS: A CALL FOR ENDOSCOPIC TRIP

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Introduction: The use of bronchoscopy to identify the sites and causes of bleeding in hemoptysis is well established. Bronchoscopy can localize the bleeding lobe in over 60% of cases, so it is recommended the use of bronchoscopy (BF) as the primary method for localizing the site of bleeding in hemoptysis. Hemoptysis remains a frequent symptom being most frequently associated with sequelae of infections and neoplasms.
Objective: Description and analyze the diagnostic yield of FB held in patients with hemoptysis in Respiratory Endoscopy Sector of Egas Moniz Hospital from June 2014 to May 2015 (12 months).
Methods: Retrospective review of reports and analytic results of patients undergoing FB. The authors analyzed: demographics, provenance of patients, anesthesia, endoscopic findings, diagnostic yield, microbiological results, complications.
Results: 42 FB were done; of which 26 (61.9%) were male patients. The average age was 64.1 (minimum age 18, maximum age 89). The FB were mostly requested by Pulmonology Department (34; 81%). Topical anesthesia with lidocaine was administered to all patients and 7 patients (16.7%) were sedated with midazolam because they did not tolerate the procedure. With regard to endoscopic findings: in 11 patients it was possible to identify the location of active bleeding, 6 patients had only ancient signs of bleeding, 6 patients had an endobronchial mass and 3 patients had signs due to bronchial extrinsic compression. 19 patients had no visible endoscopic changes. Pulmonary infection was identified in 21.4% patients and neoplastic etiology in 4.8% of patients. Bacteria, non-tuberculous mycobacteria, fungi and lung cancers were diagnosed in 16.7%, 2.4%, 2.4% and 4.8% of patients, respectively. Bacterial isolates were: *Haemophilus influenzae* two cases, *Staphylococcus aureus* 1 case, *Pseudomonas aeruginosa* 1 case, *Haemophilus parainfluenzae* 1 case, *Proteus mirabilis* 1 case, *Enterobacter cloacae complex* 1 case. The bronchoalveolar lavage did not bring any increase in profitability in microbiological identification. Nuclear inclusions of Herpes Simplex type 1 were identified in the microbiological examination of bronchial washings in 1 patient. The 2 cancers identified in bronchial biopsy and cytology of bronchial washings were: non-small cell carcinomas-adenocarcinomas. Only 2 procedures showed self-limited complications: 1 episode of bronchospasm with desaturation and 1 episode of bronchospasm. In the case of active bleeding was applied topical adrenaline.
Conclusions: Bronchoscopy is a major test in the approach of a patient with hemoptysis with hemodynamic stability. Given the range of lung diseases (bronchiectasis, pulmonary tuberculosis, lung cancer, bronchitis, lung abscess, aspergillosis) that can cause hemoptysis, is necessary to standardize the diagnosis to optimize therapy; so the authors suggest that every Pulmonology Department should have specific protocol of action when facing a hemoptysis.

Keywords: *Hemoptysis. Fiberoptic bronchoscopy. Diagnostic yield.*

PO 158. EVALUATION OF ANASTOMOTIC DIAMETER IN LUNG TRANSPLANT: COMPARING BRONCHOFIBROSCOPY WITH MULTIPLANAR RECONSTRUCTED THORACIC COMPUTED TOMOGRAPHY

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Introduction: Lung transplant (LT) is a well established therapeutic option for patients (pts) with end-stage lung disease. However it is still associated with many complications, namely airway complications (AC). Recently, Dutau and colleagues published a grading system for central AC after lung transplantation, known as the MDS classification – corresponding to macroscopic aspect (M), diameter (D) and appearance of the sutures (S) of the anastomosis.
Objective: Compare the anastomosis diameter according to MDS classification assessed with bronchofibroscopy (BF) and multiplanar

		CT class		Total
		D0	D2	
BF class	D0	96	16	112
	D1	1	0	1
	D2	12	0	12
	D3	2	3	5
Total		111	19	130

reconstructed thoracic computed tomography (CT) in a series of pts submit-ted to LT in our center between Jan/2012 and Dec/2014.
Methods: Retrospective analysis of BF reports and correspondent CT images (max 30 days difference). The anastomosis diameter was classified according to MDS classification as D0 – normal to fixed reduction up to 33%; D1 – malacia greater than 50%; D2 – stenosis from 33% to 66% and D3 – stenosis greater than 66%.
Results: One hundred and thirty exams (performed 15 days to 34 months after LT) were analyzed and the results were as in table. No significant correlation between BF and CT results was found. Moreover, when compared to BF (gold standard), the CT sensitivity in the assessment of significant stenosis (D1-D3) was 17% and specificity 86%.
Conclusions: BF remains an indispensable technique in the evaluation of airway complications in LT. However, due to his high specificity, CT can be useful in diagnosing significant stenosis.

Keywords: *Lung transplant. Bronchofibroscopy. Computed tomography.*

PO 159. MANAGEMENT OF EXTENSIVE SUBCUTANEOUS EMPHYSEMA WITH A SUBCUTANEOUS DRAIN – A CLINICAL CASE

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Introduction: Subcutaneous emphysema, air accumulation in the subcutaneous tissue, is a generally benign condition although extremely uncomfortable for the patient, whose approach is generally conservative. Rarely, and in severe cases, can cause compression of the upper airway and jugular vessels causing respiratory and cardiovascular compromise. In massive cases a small number of techniques for treatment are described, with variable and debatable effectiveness degree.
Case report: Male patient, 46 years-old, with a history of complicated pulmonary silicosis and chronic global respiratory failure under long-term oxygen therapy, in pre-transplant study, which referred to the emergency room for worsening of basal dyspnea, pleuritic chest pain, dysphonia and increased upper cervical and thoracic perimeter, of sudden onset and a few hours of evolution, associated with intense coughing. No previous episode of physical effort or trauma was referred. Tomographic was confirmed extensive subcutaneous emphysema, pneumomediastinum and pneumothorax thin blade right, associated with parenchymal abnormalities and bilateral fibrotic masses previously documented. Initially it was decided to placement of chest tube right under active aspiration without clinical improvement and progressive worsening of the degree of subcutaneous emphysema, with the development of dysphonia, dysphagia and eye opening impossibility. In addition there was still worsening respiratory failure with acidemia and need to start noninvasive ventilation. In this context it was placed Jackson-Pratt drain, under local anesthesia in the anterior wall of the left hemithorax, with initially slow but effective decompression subcutaneous emphysema. However there was need for replacement of drain obstruction with subsequent resolution the clinical picture.
Discussion: The authors present this case as an example of a bit this technique in cases of massive subcutaneous emphysema approach. If the patient described, placement of subcutaneous drain allowed effective and relatively rapid resolution of the clinical situation with reversal of respiratory insufficiency in the patient's baseline value.

Keywords: *Massive subcutaneous emphysema. Jackson-Pratt drain. Secondary pneumothorax.*

PO 160. PULMONARY EMBOLISM IN BUERGER'S DISEASE – A CLINICAL CASE

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Introduction: Thromboangitis obliterans, also known as Buerger's disease, is a condition characterized by inflammation and recurrent thrombosis in small vessels of the extremities, especially compromising hands and feet. It mainly affects adult males (4-9:1), in the fourth decade of life and is strongly associated with smoking. The underlying intermediate pathophysiological mechanisms are largely unknown but it was suggested that tobacco can trigger an immune reaction in susceptible individuals expose a previously existent procoagulant defect. Inflammatory changes occur which lead to ischemia and necrosis of distal limbs. Pulmonary thromboembolism in Buerger's disease have been described in rare cases.
Case report: We present the case of a 36 year-old male, diagnosed with Buerger's disease in the setting of clinical investigation of subacute pulmonary thromboembolism (PTE) in 2008. He had undergone bilateral lumbar sympathectomy in March 2013 in the setting of excruciating lower limb (feet) pain and as a complication of the disease he was submitted to several amputations: first of them amputation of the left fifth toe, followed by amputation of the left leg at the level of the thigh (above the knee) in June 2014 and finally amputation of the third lower of the right limb in February 2015. Before the amputation of the right leg he was also submitted to right iliac axis thrombectomy and subsequent stent placement in January 2015. At the age of 18 he was victim of a road accident, resulting in severe politraumatism and needed several surgeries in that context. He had a previous history of smoking (20 UMA), being an ex-smoker since December of 2014. The patient have been followed in Vascular Surgery consultation, with no specific pharmacological therapy being done recently. In the last visit (July 2015) he was referred to the emergency department for having dyspnea, right pleuritic chest pain and cough with hemoptoic sputum. In the laboratory analysis should be highlighted a D-dimer value of 2.68 ug/ml, CRP of 14.2 mg/dL and hipoxemic respiratory failure (PaO2 59.5 mmHg and SatO2 92.5% on room air). The chest CT revealed bilateral central pulmonary thromboembolism and signs of right ventricular overload. The ventilation/perfusion scan performed afterwards corroborated the diagnosis and didn't add any clinical information. He started on low molecular weight enoxaparin in therapeutic doses and it was verified complete resolution of dyspnea and improvement of chest pain and peripheral saturation (ambient air SpO2 of 98%, after treatment).
Discussion: It should be highlighted that the multiple surgeries constitute an additional risk factor for PTE. Although, being one more clinical case of pulmonary thromboembolism in a patient with thromboangiitis obliterans, it contributes to unravel a possibly underestimated prevalence of pulmonary vascular pathology as part of the syndrome. As suggested by several reports, thromboangiitis obliterans could be thought as a generalized vascular disease.

Keywords: *Thromboangiitis obliterans. Smoking. Pulmonary embolism. Necrosis. Ischemia.*

PO 161. PLEURAL EFFUSION – A RARE ETIOLOGY EXSUDATE CASE REPORT

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Introduction: Pleural effusion is a common clinical presentation in patients presenting with thoracalgia. Although in most cases

the diagnosis is related to pulmonary pathology (either infectious or tumoral) or related to cardiac or metabolic decompensation, there are others in which the diagnostic conclusion belongs to a group of rarer pathologies, posing a large and sometimes difficult differential diagnosis.
Case report: A 72 year old, Caucasian, active smoker of 80 pack-years, without occupational risk factors is admitted to the emergency room complaining of intense thoracic and dorsal pain, of sudden onset, and an episode of vomit of food remains. Without fever or other complaints, namely cough, sputum production or dyspnea. He had a known clinical history of COPD, essential arterial hypertension, ischemic cardiopathy and an aneurysm of the thoracic descending aorta. He was hemodynamically stable and with no mentionable findings on physical examination except for arterial hypertension (160/66 mmHg). Without significant alterations in laboratorial exams, without respiratory insufficiency, the EKG showed a previously know left bundle branch block. The chest radiogram revealed a small pleural effusion, non-existent in previous exams. A diagnostic thoracocentesis was preformed; the liquid was hematic and had chemical characteristics of an exsudate. The bacteriological exam was negative, pleural fluid was not sent to cytological examination. He was admitted to the ward for further investigation. The thoracic-CT showed an increase in the diameter of the thoracic aorta aneurysm (with 9 cm), but wasn't able to confirm or exclude it's rupture given the fact that the acquisition phase was not purely arterial. It also demonstrated an increase in the size of the pleural effusion and passive atelectasis of the adjacent segments. The case was presented to the Vascular Surgery that considered that, given the clinical features of intense thoracalgia and after review the CT images, the aneurysm might had suffered a micro-rupture contained into the pleural cavity. He was transferred to the Vascular Surgery ward to perform TEVAR (Thoracic Endovascular Aortic Repair) with placement of a prosthetic. After a well succeeded surgery there was resolution of the chest and back pain. He was submitted to thoracic ultrasound that showed a very small pleural effusion, not having been submitted to any other pulmonologic intervention.
Discussion: We present this case because it reports a rare etiology for left pleural effusion. Severe thoracalgy is a classic symptom of aneurysm rupture, and that is a medical and surgical emergency. This case is different when compared to the classic aneurysm rupture, which progresses with hemodynamic instability and requires immediate surgical intervention, because the rupture is contained, minimizing the hemorrhage. Considering the clinical stability of the patient it was possible to perform a radiologic evaluation and to treat it timely.

Keywords: *Pleural effusion. Exsudade. Aneurysm.*

PO 162. MASSIVE SUBCUTANEOUS EMPHYSEMA: A POSSIBLE COMPLICATION OF INVASIVE PROCEDURES

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Introduction: The several steps involved in any kind of wound healing are seriously influenced by numerous factors including oxygenation, infection, age, sex hormones, stress, diabetes, obesity, drugs, alcohol, smoking and nutrition.
Case report: The authors present the case of a 74-year-old female non-smoker, with previous diagnosis of controlled bronchial asthma, high blood pressure, dyslipidemia and chronic gastritis. She was admitted in the context of an extensive left pleural effusion, pleuritic left thoracic pain, epigastralgia, asthenia, non-selective anorexia, vomiting and 10% weight loss, with three months duration. After investigation, she was diagnosed with CD20+ diffuse non-Hodgkin's large B-cell lymphoma. She started chemotherapy with rituximab, pegilated doxorubicin, cyclophosphamide, vincristine and prednisone. She had bone marrow aplasia and needed broad-spectrum antibiotics for nosocomial pneumonia. For recurring pleural effusion the patient underwent two therapeutic thoracentesis and then she was proposed to medical thoracoscopic talc pleurodesis. The intervention went without complications and an intercostal chest tube was left. About 24h later the patient showed an important lateral and anterior left thoracic and cervical subcutaneous emphysema. Despite not having dehiscence signs the surgical wounds were reinforced, but the subcutaneous emphysema worsened. Because of the radiographic signs of total pulmonary re-expansion, the chest tube was withdrawn. However the subcutaneous emphysema continued worsening with cervical, facial (especially periorbital), all chest and both arms involvement. Because of a pneumomediastinum radiographic suspicion the patient had a chest computorized tomography (CT). It showed an exuberant pneumomediastinum, left moderate hydropneumothorax and an exuberant and extensive emphysema affecting all superficial muscles, including both breast areas. The CT also showed the open intercostal thoracoscopic surgical wounds (made four days earlier) and the chest tube trajectory remained fully open (withdrawned two days earlier). Only the skin remained closed by surgical sutures. New continuous pleural drainage was placed, again with total lung re-expansion and progressive reabsorption of pneumomediastinum and massive subcutaneous emphysema. There were no recurrences.
Discussion: Invasive procedures are often performed in patients with multiple comorbidities, in elderly polymedicated patients (sometimes under systemic corticosteroids) or in neoplastic patients, sometimes undergoing chemotherapy and often with some degree of malnutrition. All these factors influence the healing process and so these patients are prone to complications following invasive procedures. The authors consider that this case makes a good illustration of the above. The authors also highlight its clinical exuberance.

Keywords: *Subcutaneous emphysema. Pneumothorax. Pneumomediastinum. Medical thoracoscopy.*

PO 163. ENDOBRONCHIAL ULTRASOUND TRANSBRONCHIAL NEEDLE ASPIRATION IN THE DIAGNOSIS AND MANAGEMENT OF BRONCHOGENIC CYSTS – DESCRIPTION OF TWO CLINICAL CASES

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Introduction: Bronchogenic cysts (BC) are ventral foregut duplication cysts that arise from aberrant embryonic development, typically located near large airways, posterior to the carina. Frequently asymptomatic and incidentally discovered, may present as a mediastinal mass and complications as infection or malignant transformation have been reported. Mediastinal masses are difficult to diagnose, frequently requiring invasive diagnostic techniques. Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is a minimally invasive procedure that allows real-time biopsies of mediastinal disorders and may have a role in the diagnosis and treatment of BC. We reviewed two incidental cases of patients with mediastinal masses. In one, BC was diagnosed by EBUS-TBNA, and in other BC was ultimately confirmed by surgery.
Case reports: Case 1: A 55-year-old male presented with chest pain and an abnormal chest radiograph. He had a normal physical examination. CT scan revealed a mass occupying the posterior and superior mediastinum measuring 38 mm in short diameter. EBUS-TBNA was performed and ultrasound identified a round lesion with an echogenic centre and hyperechoic wall in the posterior lateral right wall of trachea. A purulent aspirate was drained.

Cytological examination identified an eosinophilic granular material, macrophages and ciliated epithelial cells. The patient underwent a right thoracotomy and a mass at the right upper lobe with a cystic cavity was found. Histopathological examination was consistent with the diagnosis of BC. Case 2: A 21-year-old female patient with end-stage renal disease and kidney transplant developed cough, fever and severe left chest pain. At admission, she was painfully distressed and had decreased breath sounds in the left lower lung. She had a normal chest radiograph. CT chest revealed a subcarinal lymphadenopathy measuring 56 × 38 mm. Bronchoscopy didn't reveal endobronchial lesions and conventional transbronchial needle aspiration biopsies were inconclusive. EBUS-TBNA identified a round lesion suggestive of BC and a whitish fluid was aspirated. The fluid sample contained no malignant cell and *Streptococcus parasanguinis* was isolated. Intravenous administration of ceftriaxone was initiated and the patient was subjected to thoracotomy. The final pathological diagnosis was BC.
Discussion: BC can be misdiagnosed as masses or lymphadenopathy on non-invasive exams due to the variable density in the cyst's content, as happened in these cases. In both cases, EBUS-TBNA has proven to be an useful diagnostic tool. In the 2nd case, we debated the aetiology of the BC infection, assuming a primary cyst infection because the patient was acutely ill before the EBUS, rather than a contamination from the oral cavity with the bronchoscope, but this cannot be ruled out. Care must be taken when cysts are punctured and prophylactic antibiotics may be advisable. The treatment of choice is complete surgical resection. For patients who are poor surgical candidates, EBUS remains a possible diagnostic and therapeutic measure.

Keywords: *Bronchogenic Cysts. EBUS-TBNA.*

PO 164. INFLUENCE OF THE ANAESTHETIC TECHNIQUE ON ENDO-BRONCHIAL ULTRASOUND RESULTS - A RANDOMIZED TRIAL

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Introduction: In our country, endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is usually performed under general anaesthesia but this technique can also be performed under various types of sedation. In this study we compared EBUS-TBNA results performed under two different anaesthesia techniques.
Methods: Patients were randomized to perform EBUS-TBNA under intra-venous general anaesthesia with neuromuscular blockage and ventilation (Group 1) or intravenous sedation with spontaneous breathing (Group 2). EBUS-TBNA accuracy, duration and complication rate were com-pared between groups. This study was conducted in two different centres. Anaesthetic procedures were done by anesthesiologists.
Results: One-hundred-fifteen five patients were included, 59 (51.3%) in group 1 and 56 (48.7%) in group 2. Groups were similar, regarding age (p = 0.645) and gender (p = 0.146). EBUS-TBNA was performed for diagnosis of hilar or mediastinal lesions in 77 (67%) patients and for cancer staging in 38 (33%). Two-hundred and three lymph-node stations were punctured, 108 in group 1, and 95 in the group 2. On average, more lymph-nodes stations were punctured in group 1 than in group 2 (1.83 ± 0.99 vs 1.7 ± 1.01; p = 0.472), and the number of punctures per exam was also higher in group 1 than in those in group 2 (6.9 ± 3.09 vs 5.98 ± 2.5; p = 0.083). Lymph node tissue was obtained in 109 (97.3%) samples. The aspirated material was inadequate in two cases of group 1 and one of group 2 (p = 0.742). In 3 patients (two in group 1 and one in group 2) no punctures were done. Final diagnoses obtained were: malignancy (48.6%), non-necrotizing granulomatous compatible with sarcoidosis/ other granulomatous disease (8.3%), lymphoproliferative disease (2.8%) and reactive lymph node (11%). There were no significant differences between groups regarding diagnosis. Diagnostic yield was similar in both groups, in group 1 - 93% (53/57) and in group 2 - 95% (52/55), p = 0.562. Procedure duration was inferior in group 2, (50.4 ± 14.96 vs 47.19 ± 13.41 minutes). Eleven (9.6%) minor complications (45.5% in group 1 and 54.5% in group 2) occurred during procedure, broncho/laryngospasm in 5 (45.4%) patients, desaturation in 3 (27.3%) and hypotension in 3 (27.3%). One serious EBUS-related event was reported fifteen days after the procedure (mediastinitis). No significant difference was identified between groups (p = 0.683).
Conclusions: There were no major differences between EBUS results with these two different anaesthesia techniques. EBUS-TBNA under general anaesthesia and ventilation allowed to puncture more lymph nodes and perform more punctures per exam, but this did not influence EBUS-TBNA efficacy. EBUS-TBNA under sedation with spontaneous breathing is feasible, without diminishing the yield of the exam and without more complications.

Keywords: *EBUS-TBNA. Anaesthetic technique. Sedation. General anaesthesia. Accuracy.*

PO 165. TRACHEOBRONCHIAL DIVERTICULOSIS: THE WAY OF A CASE

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Introduction: The cysts and tracheal and/or bronchial diverticulum are considered a rare benign clinical entity, there is little published literature on the subject. The incidence of tracheal and bronchial diverticula has been reported as being from 0.02 to 0.5% and approximately 0.3% respectively, of all cases of bronchoscopy. Are incidental findings on imaging tests or "postmortem", with the prevalence reported in approximately 1%, according to MacKinnon, who found 8 cases in 867 autopsies. The tracheal and/or bronchial diverticulum is characterized by one or several invaginations on the tracheal and bronchial wall, through weak points of the wall. In adults it may result from an increase in intraluminal pressure, as in, for example, chronic cough. Two types of tracheal diverticulum have been described: con-genital and acquired. Tracheal diverticula are generally asymptomatic, however, they can behave as a reservoir of secretions causing secondary infections of chronic bronchial tree. Therefore, tracheal diverticulosis may present clinically with chronic productive cough, dyspnea, stridor and repeated episodes of tracheobronchial infections. Treatment options include surgical resection in symptomatic patients with single diverticulum, in the case of multiple diverticula is recommended conservative treatment with antibiotics, mucolytics and physiotherapy mainly in the elderly.
Case report: The present case concerns a 48 years old man, smoker (72), locksmith, born in Rio Maior, residing in Angola for nearly four years. During their holiday in Portugal appealed to the emergency room of Santarém Hospital by cough with purulent sputum/hemoptysis, shortness of breath, chest pain and feeling feverish. As pathological antecedents mentioned high blood pressure, "chronic bronchitis" and repeat respiratory infections in the last year, requiring hospitalization in one episode, and was treated with several antibiotics without knowing need. The OE had reasonable general condition, afebrile, eupneic, SpO2: 96%,

blood pressure 152/91 mmHg, HR: 80 bpm. Pulmonary auscultation with fine inspiratory crackles more evident in the left lung field. A radiograph of the chest showed heterogeneous hypotransparency in the lower 1/3 of the left lung field with nodular outline. Chest CT revealed "countless multisepted peritracheal aerial images, especially posterolateral right, suggestive of multiple diverticular formations, all of which continue up the main and segmental bronchi, especially the left. Bronchiectasis in both bases, particularly on the left where there are lush cystic bronchiectasis. Signs of infectious complications with impaction of bronchiectasis bilaterally with partial filling forming air-fluid levels. Multiple nodular and centrilobular images predominating on the left lung in relation to bronchogenic dissemination. Bronchoscopy showed the right posterolateral wall of the level of emergency tracheal several millimeter holes to the upper third level. It was observed also distortion of the bronchial tree for countless emerging scattered holes in the wall of segmental bronchi and subsegmental, such as tracheal holes, some of them seem to communicate with diverticula viewed on chest CT; Aspects that are also confirmed in 3D reconstruction and virtual bronchoscopy.

Keywords: *Tracheobronchial diverticula. Bronchoscopy.*

PO 166. ENDOSCOPIC MANAGEMENT OF BRONCHOPLEURAL FISTULA WITH A MODIFIED TRACHEOBRONCHIAL STENT: CASE REPORT

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Introduction: Bronchopleural fistula (BPF) can be a post operative complication of pulmonary resection or secondary to necrotizing lung infection, chemotherapy, radiotherapy for lung cancer or persistent spontaneous pneumothorax. Incidence is variable, 0.5-20%. Without prompt treatment, infection persists, with negative impact on patient well being. Bronchoscopy is useful for diagnosis and treatment with sealants and endobronchial stents.
Case report: We report a case of a fifty-six year old man, active smoker (60 pack years), diagnosed with squamous cell carcinoma of the lung in September 2014- central mass with 8 × 5 cm with involvement of the right main bronchus (RMB) and obliteration of the upper lobe bronchus (ULB) on the same side. He completed 3 cycles of chemotherapy, with disease progression, followed by palliative radiotherapy on the thoracic mass (30 Gy). On April 2015 the patient was hospitalized with empyema/necrotizing pneumonia, successfully treated with antibiotics and thoracic drainage. Nine months after the diagnosis of lung cancer, he was admitted to the hospital with asthenia, fever, right chest pain and coughing of pus when on left lateral decubitus. Chest CT showed dehiscence of the RMB and opening of the bronchial tree to the pleural cavity occupied with an extensive hydropneumothorax. The remaining lung was totally collapsed. Videobronchoscopy showed infiltration of the terminal portion of the trachea and carina with a necrotic mass and complete destruction of the RMB wall which directly connected to the pleural cavity. The diagnosis of empyema/infection the right pleural cavity, BPF of the RMB, aspiration pneumonia and neoplastic disease progression were considered. The patient was started on antibiotics and endoscopic treatment was planned in order to prevent the right pleural cavity from communicating with the bronchial tree, thus protecting the left lung from aspiration of purulent material. Three days later, an endobronchial manually modified Hood Y stent 14/10- with occlusion of the right branch with mechanical suture (TA autosuture® 30 mm × 3,5 mm) providing exclusion of the RMB and complete permeability of the left main bronchus (LMB)- was placed. A thoracic drainage (Pigtail® 8F) was also placed on the right pleural cavity. There was progressive improvement of respiratory symptoms and infection analytical parameters. Endoscopic follow up demonstrated correct positioning of the stent and a small leak at the suture. However, the stent had to be removed three weeks later because of increasing secretions and dyspnea.
Discussion: Destruction of a main bronchus is a catastrophic event to which there are no validated treatment. The authors report a case (the 2nd described in the literature) where the placement of a tracheobronchial modified Y stent with mechanical auto-suture allowed early and cost-effective treatment of the patient, despite some technical issues and unexpected complications.

Keywords: *Bronchopleural fistula. Endoscopic treatment. Endobronchial modified stent.*

PO 167. CONGENITAL LOBAR EMPHYSEMA IN AN ADULT

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Introduction: Congenital lobar emphysema (CLE) is a developmental anomaly of the lower respiratory tract that is characterized by hyperinflation of one or more of the pulmonar lobes. Congenital lobar emphysema (CLE) is a rare congenital malformation with a prevalence of 1 in 20,000 to 1 in 30,000. Hyperinflation of one or more lobes of the lung leads to compression of the remaining lung tissue and herniation of the affected lobe across the anterior mediastinum into the opposite chest, causing displacement of the mediastinum. Approximately 25% of cases present at birth and nearly all by six months of age. Infants typically have tachypnea and increased work of breathing, and often have cyanosis. The diagnosis of CLE often can be made from its characteristic appearance on a chest radiograph: distension of the affected lobe and mediastinal shift, with compression and atelectasis of the contralateral lung. The radiographic appearance of CLE should be differentiated from pneumothorax or localized pulmonar interstitial emphysema, which typically develops in mechanically ventilated infants. The differential diagnosis includes other space occupying lesions such as congenital pulmonar airway malformation, bronchopulmonary sequestration, bronchogenic cyst, congenital diaphragmatic hernia, and Swyer-James-McLeod syndrome. Treatment of CLE in newborns with respiratory distress consists of surgical resection of the affected lobe. Conservative management is reasonable in infants and older children who have no or minimal symptoms.
Case report: 38-years-old male. Driver. History of asthma and allergic rhinitis; obese and active smoker. Hodgkin lymphoma diagnosed 4 years ago, underwent chemotherapy and radiotherapy, currently under surveillance and no evidence of disease. In maintenance regimen for treatment of asthma. Referenced to pulmonology consultation to present on chest CT, requested in the context of study/staging of cancer, isolated panlobular emphysema, restricted the right lower lobe. Also presented mediastinal adenopathies, the largest with 33 mm of major axis, compatible with lifoproliferative disease. At the time of examination he had good general condition without respiratory or constitutional symptoms. Physical examination showed slight decrease in breath sounds in the lower 1/3 of the right hemithorax. Laboratory tests showed increased total IgE and RAST-IgE positive to allergen panel of herbs and grasses. Functional respiratory examination revealed mild obstruction with response to inhaled bronchodilator "salbutamol". Chest radiography showed hypertransparency in the lower 1/3 of the right lung, with distension of the affected lobe and contralateral mediastinal shift. It was asked TC with contrast which ruled out pulmonary sequestration, vascular aetiology, as well as the presence of nodules, lymphadenopathy or areas of consolidation. Bronchoscopy without significant changes. Patient is currently without respiratory symptoms. The authors opted for conservative treatment.

Discussion: The description of this case report is intended to alert to a rare congenital anomaly that while most cases are diagnosed at birth may go unnoticed in less symptomatic patients and should be considered as a differential diagnosis in adults with emphysema restricted to one or more lung lobes.

Keywords: *Adult. Congenital lobar emphysema. Hyperinflation.*

PO 168. RIGHT PULMONARY ARTERY ATRESIA WITH PULMONARY HYPOPLASIA -CLINICAL CASE-

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Introduction: The atresia of unilateral pulmonary artery is a rare malformation of the pulmonary artery, with few cases described in the literature. Most cases are discovered in the neonatal period, however, some may be diagnosed in adulthood. It is frequently associated with congenital heart defects, however, may constitute an isolated defect.
Case report: The authors describe a case of a 42-year-old woman, former smoker of 20 pack units/year with episodes of dyspnea complaints with chest tightness since childhood and worsening in her late teens. On physical examination the patient was eupneic at rest, with 98% peripheral oxygen saturation in room air, upon chest inspection there was a rib cage asymmetry with lower volume of the right hemithorax, lung auscultation with mild decrease in breath sounds on the right side. The patient performed a computed tomography (CT) of the chest and angio-CT scan which showed a right lung with reduced volume and absence of ipsilateral pulmonary artery with mediastinal shift to the right suggestive of pulmonary hypoplasia by atresia of the ipsilateral pulmonary artery. The authors describe this case by the rarity of this lung malformation and it's diagnosis in adulthood.

Keywords: *Atresia of the pulmonary artery. Pulmonary hypoplasia. Pulmonary malformation.*

PO 169. PULMONARY SEQUESTRATION: BEYOND SURGERY...

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Introduction: Pulmonary sequestration is a rare entity, representing 0.15-6% of all pulmonary malformations. It refers to a portion of the lung that is detached from the remaining normal lung and receives its blood supply from a systemic artery that originates at the aorta. There are two types of pulmonary sequestration: intralobar which is closely connected to the adjacent nor-mal lung and does not have separate pleura; and extralobar is separate from any surrounding lung with its own pleura. It is located in more than 60% of the cases in the lower left lobe, posterior segments. Pulmonary sequestration can be asymptomatic or can be responsible for repeated pneumonia and/or hemoptysis. The treatment is usually surgical, more frequently a lobectomy. However, a less invasive approach with percutaneous embolization of the systemic artery can be considered as an alternative option.
Methods: Retrospective study of the last 13 years of clinical cases of pulmonary sequestration with percutaneous treatment in a Radiology Department.
Results: In total, 4 patients were identified of which 50% are male and patients presented an average age of 34 years old (minimum 24 and maximum 60 years). Concerning smoking habits, only one patient did not smoke. The mean tobacco use was 10 pack year (minimum 4 and maximum 20 pack year). In one patient, the pulmonary sequestration was manifested by repeated pneumonias, whereas for the other 3 patients it was evidenced by hemoptysis. In all cases, the diagnosis was reached through angio-CT, being the pulmonary malformation located in the right lower lobe in 3 patients (75%) and in the left lower lobe in one patient (25%). The most common imaging findings were a mass or homogeneous opacity (with or without cavitation) in the lower lobe with identification of an arterial systemic blood supply, confirming the diagnosis. The procedure consisted of percutaneous embolization of the affected systemic artery with metallic coils of various sizes depending on the vessels diameter (8 mm, 5 mm and 3 mm). On follow-up, which depending on the cases lasted from a couple of months to two years, all four patients had significant reduction of abnormal vascularization, resolution of symptoms and progressive reduction of the opacity and/or mass previously visible on angio-CT. There were no complications related to the technique in any case.
Conclusions: Coil embolization should be considered the procedure of choice in pulmonary sequestration with predominant vascular component, since it allows a quick and safe treatment with low cost and low morbidity and mortality.

Keywords: *Pulmonary sequestration. Embolization. Malformation.*

PO 170. PNEUMOTHORAX – 7 YEARS IN REVIEW

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Introduction: Pneumothorax is a common condition that can occur at any age and is characterized by the presence of air in the pleural cavity. According to the etiology, it can be classified into Primary Spontaneous (PEP), Secondary Spontaneous (PES), Catamenial Spontaneous (PEC), Traumatic (PT) or Iatrogenic (PI).
Objective: Characterization of patients admitted to the Pulmonology Department of CHTMAD diagnosed with pneumothorax within 7 years (2008-2014).
Methods: Retrospective study based on the medical record.
Results: In that period there were 124 episodes of hospitalization for pneumothorax in 106 patients. 72.6% of patients were male gender. The distribution of cases by etiology was as follows: PEP - 57.3%; PES - 25.8%; PEC - 3.2%; PI - 13.7%, and most PEP patients had smoking history. The median global age was 34.5 years: PEP - 26 years; PES – 44.5 years; PEC - 48 years; PI - 70 years. Within the PES group, about half of the cases had COPD as primary disease, while the majority (88.2%) of cases of PI was secondary to Transthoracic Biopsy (BTT). The clinical presentation varied with the etiology of pneumothorax, with 94.4% of PEP patients with ipsilateral chest pain and more than 70% of PI patients asymptomatic. 1.6% (n = 2) of pneumothoraxes were bilateral and 4.8% (n = 6) were tension pneumothoraxes. A conservative approach was taken in 13.7% of cases (mostly PI). When pleural drainage was employed, 18F was the most widely used drain. Persistent air leak and subcutaneous emphysema were the most common complications, mainly in PES. The median times of pulmonary re-expansion and hospital stay were higher in PES (7 and 11 days, respectively). Mortality was 1.6% (n = 2), both cases having occurred in the PES group.
Conclusions: According to the literature, PEP occurred mainly in young patients, male gender and in those with smoking history. PI was in most cases solved by conservative measures. Drains gauge 18F were the most used, although recent studies show similar efficacy and greater comfort for the patient with smaller drains. PES was associated with more complications and longer times of pulmonary re-expansion and hospital stay. Mortality associated with pneumothorax was low, with the only 2 cases occurring in the PES group.

Keywords: *Pneumothorax. Spontaneous. Catamenial. Iatrogenic. Smoking. Chest drain.*

PO 171. A RARE CAUSE OF PLEURAL EFFUSION

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Case report: A female patient, 87 years, Caucasian, housemaid, non-smoking, with a history of hypertension, ischemic heart disease, atrial fibrillation (AF), hypothyroidism and depression. Medicated with clopidogrel, propranolol, isosorbide dinitrate, trazodone, amilsulpride and levothyroxine. Ten days prior admission the patient attend the emergency department (ED) with complains of malaise and left side thoracic pain increased with respiratory motion, being discharged. After 7 days, she returns to the ED with AF with rapid ventricular response. Performs a chest radiograph showing a left pleural effusion of small dimensions, which is not valued. After AF control she is discharged. Ten days after the beginning of the symptoms, comes back again to the ED, with progressive worsening of the complaints, now accompanied by breath-lessness on minimal exertion, nonproductive cough and thoracic compression sensation. This time, she refers, with some months of evolution, anorexia, asthenia and weight loss not quantified. Performs new chest X-ray that reveals a massive left pleural effusion. Analytically without significant changes. Begins treatment with amoxicillin and clavulanic acid and oxygen (PaO 2 of 53). At physical examination: absence of vesicular murmur on the left hemithorax auscultation. It is performed a thoracentesis with drainage of 150 ml of slightly turbid serous fluid. The pleural fluid presents with transudate features with a predominance of lymphocytes and cytology for neoplastic cells and microbiological examination all negative. After thoracentesis the patient states slight improvement of the complaints. She then performs a thoracic CT showing chest asymmetry by atelectasis with decreased left lung volume with ipsilateral mediastinal shift. There is also an apparent bronchial fill in the left main bronchus assigned probably to secretions. Performs a bronchofibroscopy that reveals the presence of a whitish mass/body, that is hard to the touch, which totally occludes the left main bronchus by the secondary carina. An attempt at removal without success is made. Thus, is subjected to a rigid bronchoscopy that removes a foreign body, which reveals to be a tablet, that totally occluded the left main bronchus, as well as a tablet fragment in the intermediary bronchus. The next day she is subjected to a bronchofibroscopy for bronchial toilette, showing an erythematous bronchial mucosa and small tablet fragments scattered along the left main bronchus, with patency of all segments. The patient starts respiratory physiotherapy with progressive clinical improvement. Chest X-ray imaging shows clear improvement. It is discharged after a few days without respiratory complaints.

Keywords: *Thoracic pain. Pleural effusion. Foreign body. Rigid bronchoscopy.*

PO 172. SURGICAL MANAGEMENT OF TRAUMATIC EXTRATHORACIC LUNG HERNIATION: CASE REPORT

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Introduction: Lung hernia is an uncommon condition. It is defined as the protrusion of lung tissue through one of its bounding structures and two etiologic groups are recognized: congenital and acquired, the latter further divided into traumatic, spontaneous and those caused by local pathologic conditions.
Case report: The authors report a case of a 69 years old man presented to the emergency department following a horse kick onto the posterior and left side of his chest. The patient had mild pain and dyspnea. Computerized tomography scan revealed a small pneumothorax and a small haemothorax, rib fractures from the 8th to the 11th rib associated with flail chest, as well as lung herniation through the 8th intercostal space. The patient was initially managed conservatively with clinical and imaging surveillance. Due to maintenance of the pain, the patient was submitted to surgery six days after the thoracic trauma. Throughout surgical exploration, it was identified multiple rib fractures and the rupture of the intercostal muscles in the 8th intercostal space which were allowing the lung herniation. Rib fixation was performed and the chest wall defect was repaired with a polypropylene mesh. The patient was discharged in post-operative day 3, with no respiratory symptoms and controlled pain.
Discussion: Traumatic extrathoracic lung herniation is a very rare disorder and there is still no consensus on the role of surgical treatment. It may be performed immediately (primary) or after a delay (secondary) depending on the clinical condition of the patient. Surgical treatment is determined by factors such as size and pain, incarceration or strangulation of lung tissue, paradoxical respiration with poor ventilation, as well as persistent image of lung herniation on radiologic surveillance. In minor cases of traumatic lung hernia a more conservative management may be enough.

Keywords: *Surgery. Lung hernia.*

PO 173. SURGICAL TREATMENT OF AN AORTOPULMONARY PARA-GANGLIOMA

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Introduction: Aortopulmonary paragangliomas are extremely rare tumors arising from the chromaffin cells of the autonomic ganglia. Usually they are slow growing and symptoms arise from the compression of adjacent structures. Histopathologic evaluation is necessary to achieve a definitive diagnosis and complete surgical resection is the mainstream treatment due to their malignant potential and poor response to chemoradiotherapy. They constitute a surgical challenge because of the hypervascular nature and firm adhesion to adjacent mediastinal structures.
Case report: The authors report a case of a solid intrapericadial lesion found during a chest CT-scan in a 74 year-old woman with chronic cough. Complete resection of the tumor was achieved by sternotomy. The final diagnosis was a non-functioning aortopulmonary paraganglioma.

Keywords: *Aortopulmonary paraganglioma. Mediastinal tumor. Sternotomy.*

PO 174. CHYLOTHORAX: DIAGNOSTIC AND THERAPEUTIC CHALLENGE

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Introduction: Chylothorax is a rare clinical condition characterized by the presence of lymph in the pleural space due to injury or obstruction of the thoracic duct. The etiology is classified as traumatic and non-traumatic. Clinical presentation depends on the rate of lymph loss as well as the etiology. The main complications are immunosuppression and malnutrition. The treatment is determined by etiology.
Case report: The authors report the case of a woman of 32 years, non-smoking, a shelf stocker in a shopping center, with

a history of allergic rhinitis and two eutocic deliveries, the last being 9 months before. She presented progressive worsening of fatigue with 4 months of evolution, intensifying in the last 2 weeks, with left pleuritic chest pain in the last four days, with no history of trauma. The patient was admitted into the emergency department after performing a chest X-ray and was hospitalized for etiological investigation of extensive left pleural effusion. She was submitted to thoracentesis and percutaneous pleural biopsies on two occasions, with drainage of large liquid volumes (> 1,000 ml) with chylothorax characteristics. The microbiological and pathological exam of the pleural fluid and biopsies were negative. Chest CT performed after thoracentesis revealed decreased pleural effusion, and a mediastinal bag with liquid content from the carina to the diaphragm. The lymphoscintigraphy did not find points of communication between the lymphatic system and the pleural cavity. She underwent thoracoscopy. Biopsies from posterior and lower mediastinal pleura were negative for neoplasia. The patient began treatment with octreotide and a medium chain triglycerides diet. Because of the lack of results of these measures and a high volume of pleural fluid drained daily, she was transferred to the Thoracic Surgery Department. The CT revaluation evidenced an enlargement of the mediastinal fluid bag to the retroperitoneum, with filling of the Douglas fornix. She underwent parietal pleurectomy and mediastinal pleurectomy of the pleura covering the mediastinal bag. The soft tissues between the aorta and the esophagus were isolated, suturing multiple points of drainage of lymph at the level of the diaphragm and subcarinal zone, and proceeded to the decortication of the left lower lobe. Due to maintenance of a low volume of lymph drainage in sutured areas, pleural drainage was prolonged, although with a favorable clinical evolution with zero diet and subcutaneous octreotide.
Discussion: The etiological research is important in a patient with chylothorax, since causal identification may enable the implementation of a treatment directed at the underlying disease. The most frequent etiologies should be initially screened. The minor trauma, associated with the Valsalva maneuver during childbirth, is a rare cause of chylothorax, but it was the only etiological cause identified in this patient. Conservative treatment is usually recommended and surgical intervention is indicated in refractory cases.

Keywords: *Chylothorax. Drainage. Management.*

PO 175. BILATERAL EMPYEMA AND SEPSIS FOLLOWING AN INTRAMUSCULAR INJECTION

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Introduction: Intramuscular injection is a common route for multiple drugs administration and an everyday activity for many nurses. We describe a case of devastating clinical evolution of bilateral empyema, following an intramuscular gluteal injection in a 49 year old previously healthy patient.
Objective: To report a case of a bilateral empyema, of atypical origin and route of transmission, in a healthy adult with irrelevant past medical history that required bilateral surgical approach. The patient was admitted in the emergency room for shoulder pain, and the ultrasound exhibited multiple sub-scapular abscesses. The history revealed a previous abscess in the gluteus, the former site of an intra muscular injection, given for low back pain. The subscapular abscesses were surgically drained and Staphylococcus *aureus* was identified. Postoperatively, there was clinical deterioration, with sepsis, bilateral empyema and mediastinal abscess. The patient was admitted to our department for surgical approach.
Results: 48 hours after debridement and drainage of both pleural cavities by bilateral mini-thoracotomy, there was clinical and radiological improvement. The patient was discharged 8 days post-operatively with recommendation for respiratory physical therapy.
Conclusions: Empyema is more frequently secondary to direct contamination (pneumonia, lung abscess) or inoculation (iatrogenic, traumatic, etc.). Hematogeneous spread accounts for less than 15% of cases. When there is a distant site infection as the primary source, it is more frequently an odontogenic abscess, related to descending mediastinitis, and to our knowledge there is no clinical report of a gluteus abscess as the first event in a case of bilateral empyema.

Keywords: *Empyema. Abscess. Drainage.*

PO 176. SINGLE-PORT VATS IN NON-INTUBATED PATIENTS

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Thoracic surgery is suffering new technical developments, becoming progressively less invasive, with the objective of being less painful for the patient, and provide a faster recovery without adverse effects or complications. After starting in this center a program of minimally invasive thoracic surgery, with the combination of VATS and single-port incision for minor and major lung resections, the authors present a new technique that represents another step of the program. The VATS technique associated with regional anesthesia allowed the surgical team to perform major lung resections in non-intubated patients, sedated, substituting traditional selective ventilation by a surgical induced pneumothorax. The presented technique allows that adverse effects associated with the positive pressure ventilation or a general anesthesia, like nausea or airway trauma, are avoided. This should provide a greater benefit to the patient, more comfortable post-operative period and less surgical trauma. However, more experience is needed to make the technique perfectly safe and feasible, with the final goal of becoming the preferential approach.

Keywords: *Minimally invasive thoracic surgery. Single-port. Non-intubated. VATS.*

PO 177. UNICENTRIC CASTLEMAN'S DISEASE: EXCISION BY VATS

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Introduction: Castelman's disease is a rare lymphoproliferative disorder. Surgery has an essential role in the diagnosis and therapy of this condition, especially in the unicentric Castleman's disease (UCD) in which the full excision of the affected lymph node has a curative potential. About 30% of these cases present as thoracic disease. Complete resection of this type of lesions with videothoracoscopy (VATS) has been described in very few patients.
Case report: We present the case of a 36 year old, asymptomatic, non immunodeficient, black male that preformed a routine chest radiograph and then CT scan that showed a 6cm well defined mass in the left posterior mediastinum, with contact but no signs of invasion of the esophagus, aorta, and the vertebral bodies. Even with the benign aspect of the lesion and no signs of growth on a follow-up CT, it was decided to excise the lesion by VATS. With a 3 port VATS approach a capsulated, well defined, lesion was identified and excised with an energy device. There were no surgical or postoperative complications and the patient was discharged on

day 3. The pathology report showed a 6.5 cm well capsulated, completely excised, lymph node compatible with hyaline vascular, Castelman's disease (negative for HHV-8). That patient has no signs of disease in other locations and is under follow-up with no symptoms. This rare disease has a good prognosis if the resection of the lesion is complete, and its surgical approach by VATS is feasible and safe and should be performed whenever possible.

Keywords: *Castleman's disease. Thoracic Surgery. VATS.*

PO 178. TWO CASES OF INFLAMMATORY MYOFIBROBLASTIC TUMOR OF THE LUNG

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Introduction: Inflammatory myofibroblastic tumor (IMT) of the lung, was described for the first time in 1939 and accounts for 0,7% of all lung neoplasms. Surgery has an essential role in the diagnosis due to the diversity and unspecificity of clinical and imagiologic presentation of these tumors. Usually the lesions present as solitary nodules, rarely multiple, with variable sizes. They can be limited or locally invasive.
Case reports: We describe two cases with different presentations of this rare disease. The first case refers to a 43 year-old male, presenting with dry cough and granulomatous uveitis that in the work up performs a thoracic CT scan that reveals four bilateral pulmonary nodules, with sizes between 1.8 and 4 cm. Transthoracic biopsy was performed that confirmed the diagnosis of IMT. Excision was then totalized by bilateral thoracoscopic wedge resection in two surgical times. In the left side was performed wedge resection of the lesion on the upper left lobe and extense wedge resection on the inferior left lobe, including two nodules, and avoiding the need for left lobe lobectomy. On the right side, the lesion on the inferior lobe was also close to the pulmonary vein, but it was possible to perform a wedge resection preserving the lobe. All surgeries were performed by thoracoscopic techniques with good tolerance from the patient. The second case refers to a 29 year-old female that in the context of neck pain performs a thoracic CT scan that identifies a mass in the apical segment of the inferior left lobe. The patient was then submitted to thoracoscopic lobectomy with complete resection of the lesion, with histological confirmation of the diagnosis. Post-operative period was uneventful in both cases and patients are now asymptomatic and without recurrence after 6 months of follow-up. Surgery with complete excision is the first line of treatment, and it is indicated to perform a parenchyma sparing procedure whenever possible.
Discussion: Minimally invasive surgery should be offered whenever possible because it is safe and offers advantages to the patient. In patients not fit for surgery, chemotherapy, radiotherapy and steroids are alternative therapeutical options, with inconsistent results in the literature.

Keywords: *Inflammatory myofibroblastic tumor. Inflammatory pseudotumor. Lung. Thoracic surgery.*

PO 179. POSTPNEUMONECTOMY EMPYEMA – ELOESSER'S OPEN WINDOW THORACOSTOMY AS A VALUABLE RESOURCE

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Introduction: Infection of the pneumonectomy site is a serious complication and accounts for the significant morbidity and mortality, in particular when associated with bronchopleural fistulae (BPF). It's incidence varies from 2 to 16% and appears not to be related to the primary disease (malig-nant vs benign). The treatment of postpneumonectomy empyema (PPE) stands on three principles: drainage and infection control, fistulae closure and reinforcement and pleural space obliteration. Therapeutic options must be tailored to the patient considering the presence or absence of BPF, time and extent of infection, anatomical features as residual space and clinical status.
Case report: We present a case of a 71 yo woman with past history of pulmonary tuberculosis during youth with consequent right lung destruction and an aspergilloma of the right upper lobe 26 years ago. She presented with recurrent episodes of pulmonary infection and haemoptysis in the last two years. No other respiratory or constitutional symptoms were present. CT scan showed an asymmetric thorax with right lung collapse and multiple areas of cavitation, cylindrical bronchiectasis, pleural thickening, left lung hyperinflation, right shift of the mediastinum and migration of the thoracic viscera. The endoscopic exam showed distortion of the bronchial tree and generalized inflammation. After multidisciplinary discussion surgery was considered and pneumonectomy was performed to treat haemoptysis, control infection and reduce de risk of contralateral lung infection. The patient did well until 6 months after surgery when she presented with surgical wound suppuration and dehiscence. Imaging studies revealed an empyema of the pneumonectomy site with cutaneous fistulae and no BPF. Surgical drainage was achieved and sterilisation of the site was attempted with systemic antibiotics and irrigation, but unsuccessful. Considering the failure of this conservative technique, an Eloesser's open window thoracostomy (OWT) was performed. The patient was discharged 10 days post-operatively and continued her wound care as an outpatient. At 3 month follow-up surgical wound shows good evolution and partial epithelisation of the pleural surface, with no evidence of local or systemic infection.
Discussion: Postpneumonectomy empyema treatment options should always be considered carefully and failure to control infection with more conservative measures demand a surgical approach. In the presented case, the patient had residual pneumonectomy space with no BPF, which remained infected after drainage and irrigation so OWT was performed to treat the empyema and reduce pleural space. OWT remains a valid therapeutic option as an isolated approach as well as when combined with other thoracoplastic techniques in complex cases of PPE.

Keywords: *Pospneumonectomy empyema. Thoracostomy. Eloesser.*

PO 180. DIFFERENTIAL DIAGNOSIS OF CONTRALATERAL PULMONARY LESIONS IN LUNG CANCER. CASE REPORT OF A PULMONARY MYXOMA

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Introduction: Correct staging of primary lung cancer is crucial for therapeutic approach. We describe a case of a 58-year-old patient with lung adenocarcinoma associated with two benign diseases that led to suspicion of stage IV disease.
Case report: A female patient with hepatitis C, active smoker presents with cough, asthenia, anorexia and weight loss. Complementary tests reveal an endobronchial mass with complete atelectasis of the middle lobe, enlarged 4R and 7 mediastinal lymph nodes and a contralateral pulmonary nodule. PET-CT was positive in N2 lymph nodes, but did not show avidity in the contralateral nodule. Clinical stage IIIA (cT2aN2M0) was assumed, no pathological significance was given to the contralateral lesion. Neoadjuvant chemotherapy was administered, with reduction of tumor size but no alteration of the mediastinal lymph nodes or contralateral lesion. Wedge resection of the contralateral pulmonary nodule was performed by VATS for correct staging. Histology confirmed a pulmonary myxoma, excluding stage IV disease. Inferior bi-lobectomy with systematic lymph node

dissection was done by thoracotomy. Pathological analysis revealed lymph node tuberculosis, and pathologic staging of ypT2aN0M0. Anti-tuberculous treatment was started. No postoperative chemotherapy was given. After 4 months of follow-up there are no signs of recurrence.
Discussion: This case illustrates the importance of correct staging of lung cancer patients and the differential diagnosis of cM1 disease and cN2 disease, for a correct therapeutic decision. The diagnosis of a pulmonary myxoma, a rare and benign tumor as differential diagnosis of lung nodule is also presented.

Keywords: *Lung cancer. Pulmonary myxoma. Tuberculosis. Staging.*

PO 181. EXTRAPLEURAL PNEUMONECTOMY VIA A THORACOTOMY WITH RECONSTRUCTION OF THE DIAPHRAGM AND PERICARDIUM FOR MESOTHELIOMA

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Introduction: Malignant pleural mesothelioma (MPM) is associated with a very poor prognosis. Early in its course it spreads locally to the ipsilateral visceral pleura, lung, chest wall, diaphragm, pericardium, and mediastinum. Two surgical approaches can be taken. The more radical is extrapleural pneumonectomy (EPP) technique consists of five basic steps: (1) Incision and exposure of the parietal pleura: (2) Dissection of the tumor and parietal pleura from the chest wall, diaphragm, and mediastinum: (3) Division and control of the pulmonary vessels and bronchus followed by lymph node dissection: (4) En bloc resection of the lung, pleura, pericardium, and diaphragm; (5) Reconstruction of the diaphragm and pericardium. The less radical approach is pleurectomy/decortication (P/D), which consist a lung-sparing surgery that removes only parietal/visceral pleura.
Case report: The authors report a case of a 63-year-old women with left pleural effusion, that cytologic and histologic analysis demonstrated malignant cells consistent with malignant Epithelioid mesothelioma. A computed tomography (CT) scan demonstrated a small loculated pleural effusion, soft tissue enhancements and nodularity of the pleura. After undergoing a negative metastatic work-up, which included fluorodeoxyglucose positron emission tomography (FDG-PET) imaging and a bone scan, the patient was referred to our institution for management. The patient was considered a suitable candidate for surgical resection. We performed extrapleural pneumonectomy (EPP) with combined resection of the diaphragm and pericardium via a standard posterolateral thoracotomy. The resulting defect of the pericardium was repaired with a heterologous pericardial patch with fenestrations, and repair of the diaphragm with a polypropylene mesh. The patient was extubated at the end of surgery, and had an uneventful postoperative course. She was discharged in postoperative day 8, with no respiratory symptoms and controlled pain. EPP has a mortality of 4-9% and morbidity of 60% at a center of excellence. However, EPP combined with multiple adjuvant therapies is an option in some highly selected patients.

Keywords: *Mesothelioma. Extrapleural pneumonectomy.*

PO 182. RIGHT UPPER LOBECTOMY WITH BRONCHOPLASTY BY VATS

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Introduction: VATS Lobectomy started, in Portugal, in 2008 and its growth over the past years has been remarkable. Some of the main challenges that remain to this surgical approach are the endobronchic tumors that demand bronchoplasty or a sleeve resection. We present the case of a 56 year old male, with an history of frequent respiratory infections, that was diagnosed right upper lobe bronchiectasis and an endobronchic 1.8 cm tumor of the origin of the right upper bronchus (RUB). The bronchoscopy showed a hard tumor of the RUB origin and the biopsies were inconclusive, but suggestive of a benign tumor. Considering the bronchiectasis and the absence of a definitive histological diagnosis a right upper lobectomy by VATS was decided.
Case report: Because of the proximity of the lesion to the origin of the RUB it was not possible to use the usual mechanic staplers and guarantee the complete excision of the tumor. So we proceeded to manually opening the RUB stump, assuring a negative margin, and then executed a manual bronchoplasty, all thru VATS. The final pathology showed an endobronchial condroid hamartoma. The surgery and the post-operatory period had no major complications. Even though it is technically more demanding the manual bronchoplasty can safely be performed by VATS. It has been done before in other countries but it is being described here for the first time in Portugal. This allowed the patient to have a minimally invasive approach to solve his clinical condition.

Keywords: *Endobronchial tumor. VATS. thoracic surgery.*

PO 183. THORACOPLASTY IN PERSISTENT PLEURAL CAVITY INFECTION FOLLOWING LUNG RESECTION: A CASE REPORT

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Introduction: Technics of thoracoplasty were initially developed for pulmonary tuberculosis treatment in order to achieve collapse and cure cavitary lesions. Its indications were expanded to treat pleural problems such as unexpended lung or in postpneumonectomy empyema, frequently associated with bronchopleural fistula (BPF). Advances in medical treatment as well as safer resections for infectious diseases or sequelae dramatically reduced the need for this procedure. It is now reserved for a minor number of pleural space problems, when there are no other options (muscle flaps, epiploplasty). Thoracoplasty consists in tailored resection of the parietal (costal and intercostal muscles) wall, allowing the collapse of thoracic muscles and scapula over the mediastinum, obliterating the pleural cavity.
Case report: We present the case of a 61-year-old male, submitted to a right upper lobectomy and partial resection of two ribs for a lung adenocarcinoma (pT3N0M0) twenty years ago. Adjuvant chemoradiotherapy was performed and this lead to a bronchial stump fistula and empyema, managed with chest drainage, antibiotics and endoscopic treatment. In the following years, the patient had multiple pulmonary and persistent right upper cavity infections with progressive destruction of the remaining lung as well as osteomyelitis of the right upper ribs and progressive respiratory failure. Colonization with multiresistant agents led to permanent antibiotic treatment with need for hospitalization. Surgery was considered the unique option, and the patient was submitted to an iterative pneumonectomy and Shede's thoracoplasty. Chest wall resection included ribs 2nd to 9th. The patient was left with two chest tubes on suction for ten days. He had an uneventful immediately postoperative recovery. However, at the 10th postoperative day, nosocomial pneumonia with respiratory failure developed and mechanic ventilation was started. Weaning was

difficult and complex. On the 32nd postoperative day, he died due aspiration pneumonia and septic shock.
Discussion: Thoracic empyema has been a therapeutic challenge specially when associated with previous lung resection and BPF. Unresponsive cases to less aggressive treatments may need thoracoplasty. A high success rate is expected related to infection control, pleural cavity collapse and BPF closure. However, careful evaluation of post-operative risks is necessary to select the right candidates to this procedure.

Keywords: *Thoracoplasty. Empyema. Lung resection.*

PO 184. PNEUMOTHORAX – CASE REPORT

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Introduction: Spontaneous pneumothorax is common, particularly in male, tall, thin, and smokers. When it occurs in women, especially in childbearing age, rare causes of secondary spontaneous pneumothorax should be considered.
Case report: The authors present the case of a 39 years old Caucasian female patient, employed to counter with a known personal history of migraine without chronic medication. She denied any smoking habit or known lung disease except for hospitalization for community-acquired pneumonia in January 2010 and left pneumothorax in April 2010. The patient was admitted in our hospital for a 15 day-long history of pleuritic chest pain localized to the left hemithorax which was progressively worse, and 2 day-long complaint of wheezing. She denied fever, sweats, cough, sputum, dyspnea, fatigue or gastrointestinal or urinary tract complaints. The patient was oriented, eupneic, afebril and physical examination was unremarkable except for decreased breath sounds in the left lung field on auscultation. Laboratory tests showed no relevant abnormalities. A thoracic CT scan was performed which showed a large left pneumothorax with slight contralateral mediastinal deviation, multiple bilateral pulmonary cysts, the largest with about 3 cm, located in the left upper lobe and middle lobe. On display in the left posterior subphrenic topography, was a 7.5 cm heterogeneous image witch lead to an abdominal CT that showed a 7 × 4 cm heterogeneous mass suggestive of angiomyolipoma. A chest drain was inserted at the 5th left intercostal space in the midaxillary line, without any apparent complications, and lung expansion was confirmed in the control chest radiography. Lung function tests showed moderate obstruction with normal DLCO. The patient was released and oriented to a pneumology consult.
Discussion: Lymphangioleiomyomatosis (LAM) is a rare disease that affects women of childbearing age. Cough and dyspnea are the most common form of presentation and pneumothorax and chylothorax, the most frequent complications. The presence of bilateral regular, thin-walled cysts, surrounded by normal lung parenchyma on HRCT is highly suspicious and the extent of these changes correlates with the severity of the patient's respiratory functional impairment (DLCO).

Keywords: *Pneumothorax. Women. LAM.*

PO 185. PNEUMOMEDIASTINUM – THE AIR OUT OF THE "BOX"

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Introduction: Spontaneous pneumomediastinum is a rare condition caused by increased intrathoracic pressure leading to free air in the mediastinal structures. The diagnosis is usually difficult, requiring a high index of suspicion since the symptoms are in most cases very unspecific. Chest pain and acute dyspnea are indeed the most common presenting symptoms, often constituting an exclusion differential diagnosis with other pathologies (acute coronary syndrome, pericarditis, pulmonary embolism, pneumonia or pneumothorax).
Case report: We report the case of a 30 years old, smoking man, editor of advertising, with a medical history of sinusitis and an inhaled drugs consumer that appears to the ER because of sudden dyspnea, chest pain radiating to the cervical region, belching, and dysphagia for liquids with evolution in the past 12 hours. The symptoms began after intense physical exercise. Analytical evaluation, electrocardiogram and chest radiograph were normal. On physical examination stands out: subcutaneous emphysema at the level of the neck and paratracheal bilaterally with slight crackling without changes on cardiopulmonary auscultation. Chest and Neck CT: subcutaneous emphysema in the neck, including pre-vertebral space; slight pneumomediastinum. No pneumothorax. Not being able to identify or exclude damage to esophagus. The gastroenterology doctor suggested surveillance without indication for endoscopic study. The patient was admitted to the Pulmonology Department for surveillance and conservative therapy. He was discharged after 3 days, asymptomatic, with complete regression of subcutaneous emphysema and no changes in chest X-ray. The authors admit the role of intense physical effort and the use of inhaled drugs in the etiology of pneumomediastinum.
Discussion: Spontaneous pneumomediastinum is considered generally a benign entity with a favorable prognosis. Predisposing factors for this disease are: smoking, diagnosis of bronchial asthma, interstitial lung disease, COPD, bronchiectasis, pulmonary cysts, lung cancer, respiratory infections, vomiting, coughing, intense physical exercise, inhaled drugs abuse or trauma. The treatment is usually symptomatic. Serious forms, translate into high amount of air in the mediastinum, may cause cardiac tamponade, or airway com-promise, which is why the clinical assessment is crucial. In these cases the surgical treatment may be necessary. Despite the benign nature of this entity, careful and close monitoring of the possible complications is necessary. The cessation of tobacco use and stop illicit drug consumption are strongly recommended.

Keywords: *Pneumomediastinum. Emphysema. Chest pain.*