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PC 001. PREVALENCE OF ALPHA 1 ANTITRYPSIN DEFICIENCY IN PATIENTS WITH BRONCHIECTASIS

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Introduction: Alpha 1 antitrypsin deficiency (AATD) is underdiagnosed. Bronchiectasis is a frequent finding in AATD. However, there is controversy in the systematic assessment of DAAT in bronchiectasis. While the guidelines of the Portuguese Society of Pulmonology (SPP) on bronchiectasis recommend investigating AATD in the study of a patient with bronchiectasis, the international guidelines do not, as existing studies reveal that the prevalence of AATD in bronchiectasis is the same as the general population.
Objectives: to evaluate the prevalence of AATD in patients with bronchiectasis and its characteristics.
Methods: retrospective analysis of clinical data from patients with bronchiectasis followed in a respiratory functional readaptation consultation for 5 years. Patients with severe and moderate DAAT and their genotyping were searched.
Results: 65 patients were included, with a mean age of 62.7 ± 14.8 years, 45.2% male. The bronchiectasis presented were cylindrical in 77.4% of patients, followed by saccular/cystic in 45.2% and varicose in 43.5%. Thirteen (21%) patients had emphysema. Of the 65 patients, 27 were screened for AATD. Not all patients with emphysema were tested. Of the 27 bronchiectasis patients screened, 9 had emphysema. AATD was diagnosed in 3 patients, with a prevalence of 11% (3/27). One patient had a serum value below 0.57 g/L, indicating severe DAAT, with ZZ genotype. Another 3 patients had a serum value between 0.57-1.10 g/L, which may indicate intermediate DAAT: 2 patients were SZ (the third is awaiting results). The age at the diagnosis of DAAT was 66 (ZZ), 56 (SZ) and 62 (SZ) years; the follow-up time until diagnosis of DAAT was 5, 16 and 1 years, respectively. One of the SZ patients did not have emphysema; the ZZ had panlobular emphysema and the other SZ centrilobular emphysema, both with bilateral distribution.The 3 patients had cylindrical HRCs, and one of the SZ still had saccular bronchiectasis that were excised. The ZZ had non-reversible ventilatory obstruction and one of the SZ had a severe ventilatory restriction, both with decreased DLCO; the other SZ had a normal ventilatory study.
Conclusions: We detected AATD in 11% of bronchiectasis patients screened. If the entire sample had been tested, even if all patients who were not tested were negative, the prevalence would be at least 4.6% (3/65). Since in COPD, studies show a prevalence of AATD of ~2% and the guidelines recommend their dosing, the SPP's recommendations for assessing AATD in bronchiectasis seem appropriate. In this sample, not all patients with AATD had associated emphysema, and some international guidelines for bronchiectasis only recommend screening for AATD in bronchiectasis with the presence of emphysema. In order to better assess the prevalence of AATD in patients with bronchiectasis and their characteristics, it is intended to investigate AATD in all patients in this consultation in the future.

Keywords: *Alpha 1 antitrypsin deficiency. Bronchiectasis. Emphysema.*

PC 002. ASSESSING PATIENTS WITH BRONCHIECTASIS AND ALPHA-1-ANTITRYPSIN DEFICIENCY

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Introduction: Alpha 1 antitrypsin (A1AT) is a glycoprotein which is a highly effective inhibitor of neutrophil elastase and therefore has an important role in protecting the lung against proteolytic damage. A1AT deficiency (A1ATD) is defined by a reduced concentration of serum A1AT and/or identification of defective genotype. Protease inhibitor (PI) M is the normal allele, while the two most frequent deficient alleles are PI*S and PI*Z. Portugal has one of the highest estimated frequencies for these defective genes.
Objectives: Evaluate the prevalence of bronchiectasis in a cohort of patients from the A1ATD outpatient clinic of Coimbra Hospital University Centre and assess the relationship with epidemiological, clinical, radiological and functional data.
Methods: A retrospective study was carried out gathering information from the clinical files of a total of 65 outpatients with A1ATD. Of these, 17 (26.2%) presented imagiological evidence of bronchi-

ectasis and met the inclusion criteria. Demographic data, smoking history, serum level of A1AT, genotype, respiratory function, as well as chest high resolution CT evaluation, were assessed. Bronchiectasis were classified according to the Bronchiectasis Severity Index (BSI).
Results: Of the 17 patients 10 were female and 7 were male with an average age of 63.2 (interval 48-88) years old. Mean value of A1AT was 0.49 (0.13-0.98). ZZ phenotype was the most prevalent (9 patients; 64.3%). Pulmonary emphysema was present in 10 patients (58.8%). Bronchiectasis were bilateral in 14 patients (82.3%). Most of the patients showed mild bronchiectasis with a minority of severe cases. Average FEV1 was 72.3%, and average DLCO was 53.2%.
Conclusions: This study shows the incidence of bronchiectasis in our set of patients with A1ATD. In our patients, screening for A1ATD is an important aetiological test for patients with a diagnosis of bronchiectasis.

Keywords: *Alpha 1 antitrypsin deficiency. Bronchiectasis. Pulmonary emphysema.*

PC 003. CHARACTERIZATION AND CLASSIFICATION OF PATIENTS WITH BRONCHIECTASIS ACCORDING TO SEVERITY SCALES

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Introduction: Bronchiectasis is a chronic, multifactorial respiratory disease characterized by abnormal and irreversible airway dilation that is associated with a vicious cycle of inflammation, chronic colonization by bacteria, recurrent infection and progressive bronchial injury. Various scores are used to assess the severity of non-cystic fibrosis bronchiectasis: the FACED score, the EFACED and the bronchiectasis severity index (BSI).
Objectives: Characterize and classify a sample of patients followed at the CHVNG/E respiratory rehabilitation consultation (RR) for diagnosis of bronchiectasis, according to the FACED, EFACED and BSI scales.
Methods: A retrospective study was carried out, accessing the clinical files of patients diagnosed with bronchiectasis, followed by the RR consultation of CHVNG/E during 2019. The variables included in the FACED, EFACED and BSI scores were evaluated.
Results: A sample of 55 patients was obtained, 70% female, with a mean age of 58 ± 15 years and BMI 25 ± 5 kg/m^2. Regarding the etiology of bronchiectasis, the cause was identified: post-infectious (n = 29; 52%), tuberculosis sequelae (n = 9; 16%), idiopathic (n = 2; 4%), associated with respiratory disease (n = 5; 9%) primary ciliary dyskinesia (n = 7; 13%), primary immunodeficiency (n = 1; 2%), Kartagener syndrome (n = 1; 2%) and post bone marrow transplant (n = 1 ; 2%). The main comorbidities recorded were: asthma (35% of patients), COPD (26%), rhinosinusitis (33%), gastroesophageal reflux disease (27%), psychopathology (anxiety and depression) (11%), hypertension (31%), ischemic heart disease (16%). 46 patients (84%) had exacerbations in the previous year and 11 patients (20%) required hospitalization. Pseudomonas aeruginosa was isolated in sputum microbiological from 31 patients (56%) and other microorganisms in 19 patients (34%). All patients underwent RR, 31 patients (56%) inhaled therapy: antibiotic therapy (31%) and Hypertonic Serum (25%). According to the FACED, EFACED and BSI scales, it was found that: according to the FACED scale - 32 patients (58%) had mild BQ (score 0-2); 16 patients (29%) had moderate BQ (score 3-4) and 7 patients (13%) severe BQ (score 5-7). In turn, when applying the EFACED scale, it was found that 35 patients (64%) had mild BQ (score 0-3); 18 patients (32%) moderate BQ (score 4-6); 2 patients (4%) severe BQ (score 7-9). Since these scales have different scores and variables, in certain situations the same patient was categorized with different severity indices when applying the FACED and EFACED scales. According to the BSI scale - 20 patients (36%) had low BSI; 17 patients (31%) intermediate BSI; and 18 patients (33%) high BSI. There was weak, but statistically significant, agreement between the FACED and BSI and EFACED and BSI scales through Cohen's kappa coefficient, with a value of $p < 0.001$, $K = 0.336$ and $p = 0.02$, $K = 0.251$ respectively.
Conclusions: There was a predominance of the female gender and post-infectious etiology in the studied sample. Pseudomonas aeruginosas was the most frequently isolated microorganism. Most patients were classified as having mild bronchiectasis (FACED and EFACED score) and low BSI. There is agreement, although weak, between the FACED and BSI and EFACED and BSI scales.

Keywords: *Bronchiectasis. FACED. EFACED. BSI.*

PC 004. HEMOPTYSIS IN PATIENTS WITH BRONCHIECTASIS - WHICH ARE THE RISK FACTORS ASSOCIATED WITH RECURRENCE?

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Introduction: Hemoptysis is one of the main complications of patients with bronchiectasis, particularly during infectious exacerbations, requiring rapid and appropriate therapeutic intervention, and the use of bronchial arterial embolization may be necessary.
Objectives and methods: Characterization of the population of patients with HRC, hospitalized due to hemoptysis and evaluation of possible risk factors associated with the recurrence of hemoptysis. Retrospective study conducted at a central, tertiary and university hospital. Adult patients admitted to CHUSJ due to hemoptysis were included between October 1, 2012 and September 30, 2017, whose cause was attributed to bronchiectasis, with a previous diagnosis or established at the time of hospitalization, in a total of 57 episodes. Repeated hospitalizations of the same individual, interpreted as recurrence, were excluded from this analysis, making up a sample of 48 patients.
Results: On admission, the patients (n = 48, mean age = 64 years, 25 men) described small, moderate and large volume hemoptysis, in 41.7% (n = 20), 52.1% (n = 25) and 6.3%, respectively (n = 3) of cases. In 39.6% (n = 19), hemoptysis was the inaugural manifestation of bronchiectasis. The most frequent etiology of bronchiectasis was tuberculosis sequelae, in 47.9% (n = 23) of the cases. In 54.2% (n = 26) of the cases, exclusively cylindrical bronchiectasis was identified, being the most frequent location in the middle lobe and lingula, in 29.2% (n = 14) of the cases. A multiplicity of microbiological agents was isolated during exacerbation, with emphasis on Haemophilus influenzae in 25% (n = 7). Arteriography was performed in 58.3% (n = 28) of the cases, of which only 17.2% (n = 5) did not undergo bronchial arterial embolization. Mortality was zero overall, but there was a recurrence of hemoptysis in 50% (n = 24) of the individuals, of which in 66.7% (n = 16) of the cases the recurrence occurred in the 2 years after the initial hospitalization. Although Pseudomonas aeruginosa was the most frequent colonizing agent, it showed no association with increased recurrences, and the agents with the closest correlation of statistical significance ($p = 0.074$) were SAMS and Serratia marcescens. Etiology, morphological types and location of bronchiectasis did not show any influence on the recurrence of hemoptysis. The performance of bronchial arterial embolization was also not found to be a preponderant factor in the recurrence of hemoptysis.
Conclusions: We highlight a high percentage of cases in which hemoptysis was the cause of diagnosis of bronchiectasis, which probably denotes a delay in the diagnosis of this pathology. Despite the zero mortality, the recurrence of hemoptysis was high and in most cases it happened up to two years. SAMS and Serratia marcescens are colonizing agents most associated with recurrence, even though

it is a correlation without statistical significance. However, the lack of statistical significance in the analysis of the variables associated with the recurrence of hemoptysis may be partly due to the small sample size, associated with the great heterogeneity of the characteristics of these patients.

Keywords: *Hemoptysis. Bronchiectasis. Embolization. Recurrence.*

PC 005. NASAL HIGH-FLOW THERAPY IN STABLE COPD – CASE REPORT

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Introduction: Nasal high-flow therapy (NHFT) was developed for acute hypoxemic respiratory failure, however it is becoming an upcoming treatment for several situations. Recent studies suggest it may have a place in selected cases of global respiratory failure, where its use is still controversial. NHFT provides a continuous flow that works as EPAP (maximum 6 cmH2O) and may allow the removal of CO2. It also has other benefits: reducing respiratory effort, greater comfort and better quality of life. In patients with chronic obstructive pulmonary disease (COPD) and chronic respiratory failure, long-term oxygen therapy (LTOT) and non-invasive mechanical ventilation (NIMV) have been the therapeutic choices but may be poorly tolerated by some patients. NHFT emerges as an innovative alternative in COPD.
Case report: Female patient, 75 years old, previous smoker since 2015 (75 pack years), with COPD of emphysematous predominance, with severe obstructive ventilatory syndrome (FEV1 21%), mMRC-4 and ≥ 2 exacerbations (GOLD grade 4, group D), BMI 13.5 kg/m^2, under triple inhaled therapy. Previous history of left apical pneumothorax in 2012 without need for chest drainage and respiratory failure under LTOT since 2015. In 2017, was verified global respiratory insufficiency (pCO2 55 mmHg, pO2 54 mmHg, FiO2 21%) with indication for home non-invasive mechanical ventilation (HNIMV), started under laboratory monitoring with ST-level ventilation. Three weeks after starting ventilation (EPAP-5, IPAP-16, RR-18), the patient was admitted to the ER due to left secondary spontaneous pneumothorax, requiring chest drainage and suspension of HNIMV. During follow up hypercapnic respiratory failure worsened and the patient maintained frequent exacerbations (3-4/year) without the need for hospital admission until September 2019. By that time, in a scheduled appointment she had respiratory acidemia (GSA FiO2 21%: pH 7.33, pCO2 65 mmHg, pO2 55.9 mmHg, HCO3 34 mEq/L, spO2 86%). The patient was admitted and given the risk of iatrogenic pneumothorax, NHFT was initiated with FiO2 of 31%, flow rate of 45L/min and T 34ºC, with good tolerance and acidemia resolution. Due to the iatrogenic risk of VMNI, it was proposed NHFT as a long-term treatment that was accepted by the hospital ethics committee and the patient. It was started Airvo® with a flow rate of 60l/min, 2 to 3l/min. After 1 year under treatment with NHFT, the patient has clinical and gasometric stability: FEV1 June 2020 18% - (GSA FiO2 21% - pH- pH 7.40, pCO2 63 mmHg, pO2 62 mmHg, HCO3 38 mEq/L, satO2 91%). She presented 2 exacerbations, 1 requiring hospitalization, she was always treated with NHFT even in exacerbations, increasing the time of use and changing the parameters.
Conclusions: One of the main worries about the use of NHFT in hypercapnic patients is the possibility of CO2 retention, however according to the literature and as it can be observed in this clinical report, it is not the case. The long-term impact of NHFT is not yet clear, but it appears to be a viable and highly promising alternative for patients with COPD intolerant to NIMV.

Keywords: *Nasal high-flow therapy. COPD. Chronic respiratory failure. Hypercapnia.*

PC 006. END-OF-LIFE PALLIATIVE CARE IN COPD PATIENTS A SINGLE CENTER ANALYSIS

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Introduction: Chronic obstructive pulmonary disease (COPD) is the third leading cause of death worldwide. Approximately 100,000 men and 65,000 women die from COPD in Europe, each year. Patients with advanced COPD and comorbidities characteristically experience a progressive decline in health status and quality of life, with recurrent hospitalizations and decreasing autonomy. Despite the described benefits, referral to palliative care remains significantly underused worldwide.
Methods: We made a 10-year retrospective analysis of all patients with COPD, who were admitted in the hospital and died, between 2009 and 2018. Patients with no pulmonary function test confirmation of COPD were excluded. Only valid percentages were used.
Results: We found 193 patients, but only 110 were eligible for analysis. There was a prevalence of male patients (n = 82; 74.5%) and mean age was 78 ± 11 years-old. 19 patients (29.2%) had severe or very severe COPD, using American Thoracic Society (ATS) criteria. 20 patients were treated with long-term oxygen therapy. A total of 45 patients (40.9%) had cancer, including 9 cases (8.2%) of lung cancer. 35 patients (32.1%) presented heart failure, 12 (11%) ischemic heart disease, 26 (23.9%) type-2 diabetes mellitus and 13 (11.8%) had previous stroke. These patients had at least 1 previous hospitalization within 1 month in 25 cases (22.7%) and within 1 year in 56 cases (50.9%). The main cause of death was pneumonia with COPD exacerbation in 32 cases (29.1%) and most deaths occurred in the hospital ward (n = 101; 91.8%). A total of 31 patients (28.2%) were under palliative supportive care at the time of death, including 22 patients with cancer. However, if we only analyze patients with very severe COPD (n = 6; 9.2%), no patient received palliative care.
Conclusions: Palliative care should be offered to patients with advanced COPD and other comorbidities. It contributes to the management of symptoms, quality of life and end-of-life situations. Referral to palliative care is increasing in the last decade, especially in patients with concomitant cancer, however, it remains significantly underused worldwide.

Keywords: *COPD. Palliative care. End-of-life. Treatment. Support.*

PC 007. LITERACY AND OPTIMIZATION OF INHALATION TECHNIQUE IN THE COMMUNITY: SFVETI PROJECT

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Introduction: Inhalation therapy is the cornerstone of pharmacological treatment of chronic respiratory diseases such as Asthma and Chronic Obstructive Pulmonary Disease (COPD). However, its correct use is critical for the successful control of the disease.
Objectives: The main goal of this project is to evaluate the impact of SFVETI Project implementation, a project to increase the patient literacy and optimize the inhalation technique in the community.
Methods: Prospective study in which users of 15 Community Pharmacies distributed throughout the territory of Continental Portugal, using or starting to use inhalers for the first time, were included for 1 year (Nov.2018-Nov.2019). It was verified if the users performed an adequate inhalation technique, with identification of the error rate per inhaler model. When errors were identified, there was pharmaceutical intervention in the teaching and optimization of inhalation technique.
Results: 175 people were included in the study, mostly women (n = 111, 63%), over 60 years old (n = 112, 64%) and non-smokers

(n = 115, 66%). Prescriptions were mostly from Asthma (n = 45, 26%) and COPD (n = 45, 26%). It was found that 15% of people (n = 26) had a prescription for 2 or more inhalers. Seventeen different types of inhalers were identified, with Turbohaler® (n = 33, 16%) and pMDI's (n = 34, 16%) being the most prescribed, followed by Diskus® (n = 22, 10%), Ellipta® (n = 21, 10%) and Respimat® (n = 19, 9%). There were 211 initial demonstrations of the inhalation technique, 59 of which (59/211, 28%) had errors and were repeated. In 51 demonstrations there was an improvement of the technique after pharmaceutical intervention (51/59, 86%) and 8 (8/59, 14%) maintained the errors, requiring further intervention. The Diskus® device presented the highest percentage of committed errors (9/22, 41%) during the first demonstration of inhalation technique.
Conclusions: Pneumologists' knowledge about inhalation devices associated with higher error rates by people with respiratory disease may be relevant at the time of prescription. Additionally, pharmaceutical intervention in the community through a structured program such as SFVETI can act in a complementary way with hospital teaching and primary health care, contributing to an adequate execution of the inhalation technique by the person with chronic respiratory disease, with consequent therapeutic efficacy impact.

Keywords: *Inhalation technique. COPD. Asthma. Teaching. Therapeutic adherence.*

PC 008. THE ROLE OF THE RESPIRATORY FUNCTION STUDIES IN THE SURGICAL RISK ASSESSMENT: THE IMPORTANCE OF THE FLOW-VOLUME CURVE

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Introduction: The flow-volume curve consists of a graph of flow over volume during the performance of inspiratory and expiratory maneuvers, at maximum effort. The shape of the flow-volume curve provides clues about the diagnosis of ventilatory alteration, namely obstructive disease, and its location. The purpose of pre-anesthetic evaluation is to reduce the morbidity and mortality associated with anesthesia and the surgical procedure.
Case report: We report the case of a 74-year-old man referred to the Pulmonology Consultation due to weight loss of 10% in 3 months and dyspnea on exertion with recent worsening. This was a patient with previous diagnoses of chronic obstructive pulmonary disease (COPD) of smoking etiology (> 60 units-pack-year) and neoplasia of the larynx. A computed tomography (CT) scan of the chest was performed in which a partially cavitated nodule with spiculate contours was observed, located in the upper left lobe. Positron emission tomography (PET-CT) defined a 15 mm nodular lesion on the left upper lobe (standardized uptake value (SUV) maximum = 7.6) and asymmetry of uptake in the vocal cords. The suspected pulmonary lesion was not accessible by transthoracic biopsy, so the patient was proposed for diagnostic pulmonary resection surgery, with possible upper left lobectomy, depending on the histopathological result. Preoperative respiratory functional study was requested for referral to a Thoracic Surgery Consultation. The ratio of forced expiratory volume in the first second (FEV1)/forced vital capacity (FVC) was less than 70% after bronchodilation. These spirometric findings were compatible with COPD. In the flow-volume curve, an inspiratory plateau smaller than expected, with a rectangular shape, indicated variable extrathoracic obstruction of the upper airway. The upper airway obstruction indexes showed forced inspiratory flow at 50% of the forced vital capacity (FIF50) of 1.39 L/s (below normal), the relationship between forced expiratory flow at 50% of the vital capacity (FEF50) and FIF50 of 1.71 (higher than normal), a ratio between FEV1 and peak expiratory flow of 0.65 (higher than normal) and a ratio between FEV1 and forced expiratory volume in the first half second of 1.39 (within the normal range). The curve analysis was corroborated by the analysis of the upper airway obstruction indexes, proving variable extrathoracic obstruction.
Discussion: The upper airway obstruction of this patient is a consequence of the left cordectomy and radiotherapy to which he was submitted to in the context of laryngeal squamous cell carcinoma. The asymmetric uptake in the vocal cords evidenced by PET-TC supports this post-surgical status. This obstruction makes the patient an anesthetic challenge due to the potential risk of severe obstruction and difficult approach to the airway, with a high probability of needing urgent tracheostomy. The volume-volume curve decisively influences the preoperative approach and the inherent anesthetic risk. This patient will need joint evaluation by Otorhinolaryngology, Thoracic Surgery and Anesthesiology to define the preferred approach to the airway.

Keywords: *Flow-volume curve. Spirometry. Airway obstruction. Neoplasm.*

PC 009. AMBULATORY OXYGEN FLOW TITRATION BY 6-MINUTE WALKING TEST - A DIFFERENT PROTOCOL

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Introduction: Although ambulatory oxygen therapy is essential in patients with desaturation during exercise, the best way to its titration during the 6-minute walking test (6MWT) is not yet completely defined.
Methods: Prospective analysis of a clinical protocol designed to reduce the required number of 6MWT for a correct titration of ambulatory oxygen flow rate. According to the protocol, if the peripheral oxygen saturation (SpO2) remained ≥ 88% throughout the test, the test would end at 6 minutes. If, at any time, SpO2 was below 88%, the test was temporarily suspended, the oxygen flow was increased by 1 L/min and the patient rested for at least two minutes, resuming the test if in the meantime SpO2 became ≥ 90%. Whenever there was desaturation for values lower than 88%, the test was again temporarily suspended. The test was completed when the total duration was at least six minutes and the oxygen flow had not been changed in the last three minutes of the test (SpO2 ≥ 88% for three consecutive minutes). In addition to the usual criteria, the test was interrupted if there was an inability to maintain SpO2 ≥ 88% with oxygen flow of 15 L/min for three minutes.
Results: 66 patients underwent 6MWT according to the protocol, with changes in oxygen delivery in 27 of them. Of these 27 patients, the majority (56%) were male, with a mean age of 72 years (minimum 60, maximum 89 years). The most frequent main diagnosis was COPD, present in 12 patients (44%). Fifteen patients (56%) also had obstructive sleep apnoea syndrome. In 15 patients, a portable oxygen concentrator (POC) was used and in the other 12 patients, liquid oxygen was used. In the group that used POC, the average initial flow rate was 1 L/min (minimum 0, maximum 3 L/min), with the average final flow rate being 3 L/min (minimum 1, maximum 5 L/min), while in the group that used liquid oxygen, the average initial flow rate was 3 L/min (minimum 0, maximum 6 L/min) and the average final flow rate was 4 L/min (minimum 1, maximum 7 L/min). In the 27 patients in whom the oxygen flow was altered, it was found that 6MWT had to be temporarily suspended once in 19 of them, twice in five of them and three times in three patients. The total test time was six minutes in 19 patients; in four patients the duration was greater than six minutes and less than or equal to seven minutes; in three patients it was longer than seven minutes and less than or equal to eight minutes and in one patient it was longer than eight minutes (maximum duration nine minutes). There were no complications, namely in patients who had a total test time of more than six minutes.

Conclusions: The use of this protocol may allow the reduction of the number of 6MWT necessary to ambulatory oxygen flow rate titration, without conditioning a significant increase in the total duration of the test.

Keywords: *6-minute walking test. Ambulatory oxygen. Respiratory failure.*

PC 010. ETIOLOGY AND IMPACT OF THE OCCURRENCE OF LYMPHOPENIA IN PATIENTS UNDERGOING IMMUNOTHERAPY IN THE TREATMENT OF LUNG CANCER

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Introduction: Recent data suggests that lymphopenia could be associated with worse therapeutic results in patients with non-small cell lung cancer (NSCLC) treated with immunotherapy (IT) and that radiotherapy (RT) presented itself as a frequent cause of lymphopenia.
Objectives: Analyze the overall survival (OS) and progression-free survival (PFS) of patients with NSCLC under IT, analyze the impact of lymphopenia during treatment in OS and PFS and to determine a relationship between the occurrence of lymphopenia and RT treatment.
Methods: A retrospective analysis of patients with NSCLC of a university hospital submitted to IT. Clinical and demographic data, OS and PFS were analyzed.
Results: 41 patients (88% males, mean age 64 ± 8 years) were included, mainly smokers/former-smokers (81%) with ECOG 0 or 1 (95%). The most frequent histologic type was adenocarcinoma (63%). IT was the first line treatment in 17% of the patients, mostly with pembrolizumab (68%). Lymphopenia during treatment occurred in 68.3% (n = 28) of patients. RT during or up to 6 months before immunotherapy (34%, n = 14) showed no correlation with the development of lymphopenia. Patients with lymphopenia during or at the beginning of immunotherapy showed a significantly better PFS (mean PFS: 16.6 vs 7.4 months, $p < 0.05$), with no significant difference in OS (mean OS: 17.8 vs 14.9 months, $p = 0.258$).
Conclusions: Although it is known that lymphocytes have an important role in the therapeutic efficacy of IT, we did not find a relationship between the presence of lymphopenia and a worse prognosis for patients. On the contrary, we found that patients with lymphopenia had a better prognosis. We also did not see an association between lymphopenia and RT.

Keywords: *Lung cancer. Immunotherapy. Lymphopenia. Radiotherapy.*

PC 011. ASEPTIC MENINGITIS - A RARE ADVERSE EFFECT OF PEMBROLIZUMAB

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Introduction: Advances in the treatment of advanced lung cancer have been challenging and immunotherapy has brought new hope to these patients. Pembrolizumab has been associated with a variety of adverse effects related to the immune system, but the occurrence of aseptic meningitis is rare.
Case report: We present the case of a 66-year-old woman, smoker of 35 pack-year units, with a history of diabetes mellitus, arterial hypertension and squamous cell carcinoma of the lung (expression of PD-L1 > 50%) already in stage IVB at the time of diagnosis in January 2018. The patient started pembrolizumab in the first line with partial response and without significant side effects. In June/2020, she went to the emergency department due to a clinical condition with 6 days of evolution, characterized by worsening of baseline dyspnea, productive cough of mucous sputum, hyperthermia (38 ºC), nausea, headache and behavioral changes. Analytically without leukocytosis, neutrophilia and procalcitonin and C-reactive protein were negative. Cranio-encephalic computed tomography showed no significant changes and lumbar puncture was characterized by crystalline fluid without increased pressure, hyperproteinorrhachia, 91 cells with a predominance of mononuclear cells and normal glucose. The patient started empirical therapy with ceftriaxone, vancomycin, ampicillin and acyclovir. During hospitalization, the patient worsened complaints of baseline dyspnea associated with partial respiratory failure and ended up being transferred to the intensive care unit. Computed tomography of the chest revealed that it was a severe interstitial pneumonitis secondary to pembrolizumab, and high-dose corticosteroids and infliximab were started. As the bacterial, mycological and mycobacterial cultural examination and the panel for meningitis/encephalitis research was negative, the diagnosis of aseptic meningitis secondary to immunotherapy was assumed. The patient showed clinical and imaging improvement after starting corticosteroid therapy, however she died.
Discussion: Given the rarity of aseptic meningitis as a side effect to pembrolizumab, the authors consider their report to be relevant for the recognition of the cause and the rapid introduction of corticosterapy.

Keywords: *Pembrolizumab. Aseptic meningitis. Pneumonitis.*

PC 012. KRAS/NRAS MUTATIONS AS PULMONARY ADENOCARCINOMAS IMPRINT

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Introduction and objectives: Mutated RAS is common in cancer counting for 30% of mutations and varying in different histopathological types. Lung cancer KRAS mutations occur in 20-40% of adenocarcinomas, in codons 12 and 13 mainly. Liquid biopsy subscripted to NGS raises the position of the imprint 1 for first determination in non-surgical staged patients.
Methods: Advanced adenocarcinoma recurring after targeted therapy/immunotherapy required liquid biopsy mutational determination analyzed by NGS after Streck tube blood collecting and cfDNA-extraction done with DNA MagMAX™ Cell-Free DNA Isolation Kit, in a 16 patient's series. For the analysis of genomic alterations, the panel Oncomine™ Lung cfDNA Assay (11 genes) (Thermo Fisher Scientific, Waltham, MA, USA) was performed according to manufacturer's instruction by Next Generation Sequencing (NGS) in Ion S5™ System.
Results: In the 16 samples, 5 cases had KRAS/NRAS mutations where two KRAS mutations were concomitant with TP53 and EGFR or NRAS. The remaining 3 cases presented isolated KRAS or NRAS mutations. All KRAS mutations occurred in 12 or 13 codons.
Conclusions: KRAS is becoming a predictive biomarker of response to either target/chemotherapy and early preclinical data showed that the presence of KRAS mutation induced greater sensitivity in pemetrexed models. The role of KRAS/NRAS deserves early interpretation after liquid biopsy of non-surgical adenocarcinomas to follow up therapy in these cases of advanced pulmonary carcinomas once immunotherapy seems to benefit from these molecular alterations.

Keywords: *Lung cancer. KRAS. NRAS. Liquid biopsy.*

PC 013. EGFR EXON 20 INSERTION DETERMINED IN LIQUID BIOPSY – CASE REPORT

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Introduction and objectives: Near 100 exon 20 insertions cases were reported in the Catalog of Somatic Mutations in Cancer (COSMIC) and given its rarity, these mutations and respective clinical outcomes are not fully established. Nevertheless, EGFR exon 20 insertion is the most prevalent of the uncommon EGFR mutations and can be found in approximately 1.5-2.5% of pulmonary adenocarcinomas, concerning females, Asian ethnicity and never-smoking patients.
Methods: A female 61-years-old non-smoker lung biopsy correlated with clinical T2bN0M1c – IVB Pulmonary Adenocarcinoma (CK7/TTF1/napsin positivity and CK20/vimentine/CD10/estrogen receptors/CCR/CD10 negativity). FFPE macrodissected tumoural tissue/10% representation of tumoural cells was analysed for EGFR mutations IdyllaTM EGFR Mutation Test (exons 18/19/20/21). Blood was collected in Streck tube and cfDNA-extraction was done with DNA MagMAX™ Cell-Free DNA Isolation Kit. The panel Oncomine™ Lung cfDNA Assay was performed according to manufacturer's instruction by Next Generation Sequencing (NGS) in Ion S5™ System.
Results: In both samples, biopsy (Idylla) and liquid biopsy (NGS), EGFR exon 20 insertion, c.2319_2320insCAC;p.(His773_Val774insHis), was detected with one year time in between. After afatinib, osimertinib was introduced due to left kidney metastasis detection. Follow up has been done for 21/2 years.
Conclusions: Studies showed that different exon 20 insertions lead to different response to EGFR TKIs depending on the location in the kinase domain that they affect. Exon 20 insertion mutation is associated with lack of sensitivity to first-generation EGFR TKIs (erlotinib/gefitinib) and a partial response to second-generation (afatinib) and third-generation (osimertinib/rociletinib); promising results for nazartinib and poziotinib are on line.

Keywords: *EGFR. Exon 20 insertion. Liquid biopsy.*

PC 014. PI3KCA MUTATED IN INTRA-TUMOURAL ATYPICAL BRONCHIAL TYPE EPITHELIUM

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Introduction and objectives: Lung cancer early screening might be designed through molecular changes determination in pre-neoplastic and in pre-invasive lesions accompanying pulmonary carcinomas. In bronchial – pulmonary adenocarcinomas and cases of AIS and MIA, an attempt was made to compare NGS results after uniform technical procedures applied to recognized atypical epithelium.
Methods: From three pulmonary adenocarcinomas and respective distinct atypical bronchial type epithelium, manually/independently macrodissected representative areas were collected from FFPE blocks; adenocarcinoma in situ (1 case) and minimally invasive adenocarcinoma (2 cases) DNA also was submitted to the study. NGS (Ion AmpliSeqTM Colon and Lung Cancer Research Panel v2.) was performed in a ION-PGM platform and ALK, ROS1 and MET FISH analysis was also performed on 4-μm-thick.
Results: KRAS, FGFR2 and DDR2 somatic mutations present in two adenocarcinomas and respective atypical bronchial type epithelium; PI3KCA, EGFR and MET represented another duet while ERBB2 raised up also in one case. ALK and ROS1 rearrangements or MET amplifications were not found by FISH. The AIS case exhibited ERBB2/4, EGFR and SMAD4 somatic mutations while the two MIA cases were sequencing apparently wild-type for the applied panel.
Conclusions: Mutational status in atypical bronchial type epithelium identical to concomitant adenocarcinomas provides evidence that several early genetic events are present in lung adenocarcinoma carcinogenesis different from AIS/MIA carcinogenesis. ABTE deserves further studies to be emphasized as pre-neoplastic lesion to lead early clinical guidance for high-risk patients identification in bronchial – pulmonary carcinoma in screening, namely in smokers.

Keywords: *Lung. Pre-neoplastic lesions. Pre-invasive lesions. Adenocarcinoma.*

PC 015. IMMUNOTHERAPY AND HYPOPHYSITIS – WHEN HYPOTENSION HAS ANOTHER REASON...

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Introduction: The new anticancer therapies have a superior safety and comfort profile to that of classic chemotherapy. Despite its unquestionable value (namely in the treatment of Lung Cancer), immunotherapy can be associated with several side effects, of quite different frequency and severity, thus implying adequate (clinical, analytical and imaging) monitoring in a serial way. Supra-Renal Insufficiency, in its secondary form, although most commonly due to iatrogenic corticosteroid therapy, presents itself as a possible and important adverse effect of immunotherapy.
Case report: We present the clinical case of a 69-year-old male patient, ex-smoker (smoking burden of 60 UMA), followed by Pulmonology for Pulmonary Emphysema and Pulmonary Adenocarcinoma - stage IIIA (with research by EGFR, ALK and ROS- 1 negative; PD-L1 negative). After surgery and fractionated stereotactic radiotherapy, he started therapy with Vinorelbine. By progression after 2 cycles, he started the third treatment line with Nivolumab, showing clinical stability after 56 treatment cycles. As important comorbidities: Gastric carcinoma and medullary thyroid microcarcinoma (surgically treated), atrial fibrillation (under chronic anticoagulation), arterial hypertension and dyslipidemia (both controlled by medical therapy). Without respiratory complaints, he developed – over weeks and with progressive worsening – a clinical picture of tiredness for minimal efforts, asthenia, loss of appetite, weight loss (estimated at 10 kg) and symptomatic hypotension (even after suspension of antihypertensive therapy), with associated lipothymia and syncope. Without significant changes on objective examination and with stability on imaging tests, he presented, analytically, with relative lymphopenia (without any other changes in the blood count), normal renal, hepatic and thyroid function, mild hyponatremia and marked decrease in serum measurement of the hormones Cortisol and Adrenocorticotrophic (ACTH). Assuming hypophysitis likely secondary to immunotherapy, Nivolumab was discontinued and the patient started high-dose systemic corticosteroid therapy (in a slow regression regimen, until long-term maintenance with oral hydrocortisone). During the biweekly follow-up, there was a progressive clinical improvement, with resolution of symptomatic hypotension and gradual recovery of appetite, vitality and habitual activity levels of the patient. Central adrenal insufficiency, assuming different levels and implying more or less urgent therapeutic options, is recognized as a potential adverse effect of several pharmacological classes – namely immunotherapy.

Discussion: The clinical case described above is presented in order to highlight the severity potentially associated with hypophysitis (with consequent damage of the hypothalamic-pituitary-adrenal glands axis), as well as the need to consider immunotherapy as a valuable therapeutic weapon but, at the same time, capable of carrying no insignificant risks.

***Keywords**: Lung cancer. Immunotherapy. Central adrenal insufficiency. Cortisol.*

PC 016. PULMONARY CYSTS - DIVERSITY AND RISK - ABOUT A CASE

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Introduction: Pulmonary cysts, while areas bounded by a wall of varying thickness, can be unique or diffuse and their formation results from several factors. Its differential diagnosis is broad, recognizing, more and more, the existence of late-diagnosed lung neoplasms associated with the presence of small pulmonary cysts.
Case report: We present the case of a female patient, 68 years old, autonomous in activities of daily living. Retired from the textile industry and never smoker. As personal background to highlight: arterial hypertension and gastric ulcer (medically controlled) and, at family level, daughter with lung cancer. She went to the emergency department because of a clinical condition, with two weeks of evolution, characterized by easy tiredness and dyspnea for progressively lesser efforts, dry cough, asthenia and anorexia. In association, and with progressive worsening, pain complaints in the right lower thoracic region, of pleuritic characteristics, with homolateral dorsal irradiation. On objective examination, good general state. Eupneic at rest in room air (SatO2 93%) and, on pulmonary auscultation, a marked decrease in breath sounds in the 2/3 lower of the right hemithorax; without abnormalities on the left. Analytically, without major changes. Arterial blood gases with mild partial respiratory failure. Chest X-ray with homogeneous hypotransparency in the 2/3 lower of the right pulmonary field, with upper concavity, without deviation of the mediastinum, suggestive of a large pleural effusion on the right. In addition, she performed a video-bronchofibroscopy in the operating room (showing infundibular collapse of the segmental bronchi in the right basal pyramid) and medical thoracoscopy (with biopsies of a densely filled pleura with a "granite" infiltrate). The cytology of both samples (pleural fluid and biopsied pleura) revealed changes compatible with pleural involvement of Lung Adenocarcinoma. For staging, she underwent PET/CT (with hypercaption of radiopharmaceuticals in diaphragmatic, costal and mediastinal pleural thickening on the right - 9.4m late SUV - and initial uptake in ganglion formation in the right internal mammary chain - Q. SUVmáx. 4.7, suggestive of secondary lesion). After molecular study of the tumor (only identifying mutations in exons 21 and 3 of the EFGR gene and exon 10 of the PIK3CA gene), with stage IV-A lung cancer by pleural metastasis, she started treatment with Erlotinib 150 mg.
Discussion: There are several morphological subtypes of neoplasms associated with cysts in the lung parenchyma, with patterns of evolution also varying, but adenocarcinomas tend to predominate (as seen in the case presented). In the case under analysis, the coexistence of massive pleural effusion and the patient's clinic, facilitated the conduct of an etiological study. However, studies show that the underdiagnosis of lung neoplasms in association with cystic lesions continues to be frequent, which highlights the need to keep high diagnostic suspicion.

***Keywords**: Pulmonary cyst. Pleural effusion. Pulmonary adenocarcinoma.*

PC 017. DIFFERENTIAL DIAGNOSIS DURING THE COVID-19 PANDEMIC - CLINICAL CASE

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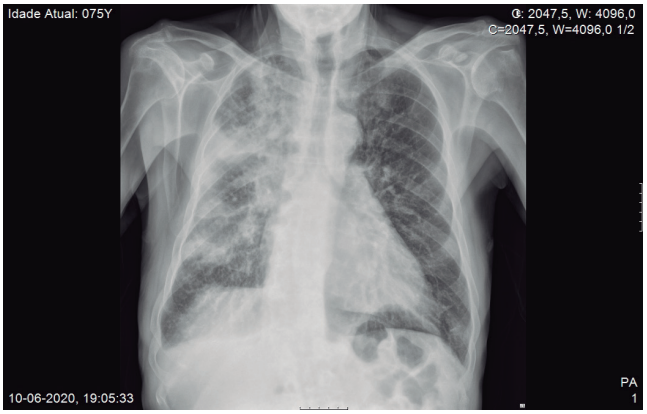
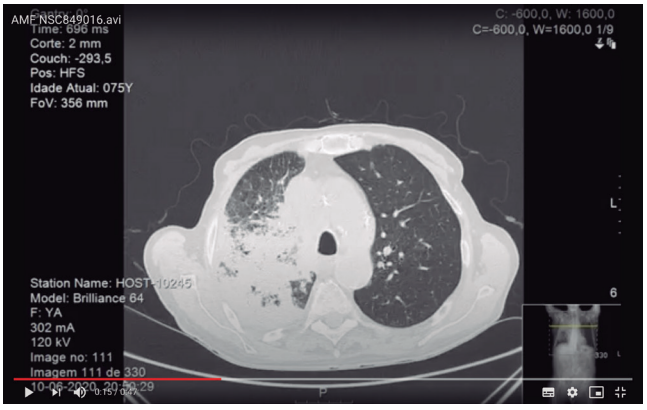
Introduction: Lung cancer remains the leading cause of cancer mortality worldwide. Small cell lung cancer (SCLC) is the most aggressive histological subtype, representing 15 to 25% of all lung neoplasms. Despite all the therapeutic advances, the results remain discouraging given the high rate of tumor growth. Despite initially presenting a good response to chemotherapy, most patients will relapse with extensive disease and little response to therapy. As the population ages, the number of SCLC cases increases, with approximately 50% of patients with limited disease being over 70 years of age. This neuroendocrine tumor can present a variety of paraneoplastic syndromes, namely hyponatremia and immune-mediated thyroid dysfunction.





Case report: The case of a 75-year-old man with history of systemic arterial hypertension, ischemic heart disease and active smoking (90 UMA) is presented. The patient went to the emergency department requesting a test for SARS-CoV-2 due to a cough with 2 months of progression that had worsened in the previous week. During the clinical interview he also mentioned unspecific complaints of tiredness and anorexia with weeks of evolution and unquantified weight loss. Presented with neutrophilic leukocytosis, hyperbilirubinemia, elevated C-reactive protein and hyponatremia. The chest X-ray showed a multifocal and heterogeneous infiltrate in the upper right pulmonary field. The histological study of the sample collected by bronchofibroscopy revealed SCLC. Also noteworthy is an increase in fT4 with normal TSH, negative antithyroperoxidase antibodies, normal TSH receptor antibodies (TRAb) and elevated calcitonin, suggesting hyperthyroidism of probable paraneoplastic etiology. He also presented with severe

hyponatremia requiring fluid restriction and intravenous replacement probably due to SIADH. The authors propose the diagnosis of SCLC with Graves' disease and paraneoplastic SIADH. Chemotherapy with Carboplatin and Etoposide was started. Given the high probability of CNS metastasis in this histological subtype, a CT-CE was performed with no metastasis shown. PET-scan showed disease extension to the contralateral hilar ganglia, determining extensive stage.
Discussion: Hyponatremia is the electrolyte disorder most commonly associated with SCLC and is related with increased morbidity and mortality. Graves' disease, although described in the literature, is less common, as these patients most often have hypothyroidism. The presence of endocrinological paraneoplastic syndromes also means a worse prognosis. Given all the above, the patient's age, comorbidities, extent of neoplastic disease and concomitant presence of paraneoplastic syndromes, we can infer that the likelihood of disease remission is low and the likelihood of progression is very high, meaning a poor prognosis. We also highlight the importance of differential diagnosis in times of COVID-19 pandemic.

Keywords: *Small cell lung cancer. COVID-19. Paraneoplastic syndrome. Hyponatremia. Hyperthyroidism.*

PC 018. PULMONARY ADENOCARCINOMA PIK3CA H1047R AND EGFR L858R MUTATIONS IN LIQUID BIOPSY – CASE REPORT

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Introduction and objectives: In pulmonary adenocarcinoma, PIK3CA mutations range in between 1.5% to 7.7%, signaling downstream EGFR pathway drive oncogenesis/progression. PIK3CA mutations frequently coexist with other mutations relating with still not well understood resistance to EGFR tyrosine kinase inhibitors (TKIs).
Case report: A 65-years-old non-smoker female staged IVb pulmonary adenocarcinoma (expression of CK7/TTF1/vimentine and with negativity for CK20/mammaglobin) presented with hepatic metastasis whose biopsy had 80% tumoural cells represented for EGFR by IdyllaTM EGFR Mutation Test (exons 18/19/20/21) and blood for liquid biopsy was collected (in Streck tube) cfDNA-extraction was performed with DNA MagMAX™ Cell-Free DNA Isolation Kit. The panel Oncomine™ Lung cfDNA Assay (Thermo Fisher Scientific, Waltham, MA, USA) was performed according to manufacturer's instruction by Next Generation Sequencing (NGS) in Ion S5™ System for genomic analysis of cfDNA. EGFR presented wild-type in the hepatic metastasis cells. In blood – liquid biopsy, EGFR and PIK3CA were detected c.2573T > G;p.(Leu858Arg) and c.3140A > G;p.(His1047Arg), respectively.
Discussion: The EGFR c.2573T > G;p.(Leu858Arg) mutation and PIK3CA c.3140A > G;p.(His1047Arg) mutation are associated with response to EGFR TKis and response with PI3K/AKT/mTOR pathway inhibitors, respectively. Interactions between PIK3CA/EGFR mutations are not yet clear in pulmonary carcinomas beyond clinical independent outcome. This case emphasizes the current tumoural heterogeneity discussion and Vimentin expression correlation with tumours dependent from epithelial – mesenchimal activity activation recognized with higher metastatic capacity.

Keywords: *EGFR. PIK3Ca. Leu858Arg. His1047Arg. Lung. Adenocarcinoma.*

PC 019. BRONCHIAL/PULMONARY CARCINOIDS MORPHOLOGY MAY CORRELATE WITH DIFFERENT CARCINOGENESIS

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Introduction: Neuroendocrine tumours of the lung are divided in four major histopathologic subtypes: typical carcinoid, atypical carcinoid, large cell neuroendocrine carcinoma (LCNEC) and small cell lung carcinoma (SCLC). The first two might be considered well-differentiated neuroendocrine tumours and the last two grades, as poorly differentiated neuroendocrine carcinomas, also prone to combine with other morphologic subtypes. Nowadays, the diagnosis of carcinoids is based in morphological characteristics, immunohistochemistry, mitotic count/mm^2 and presence or absence of necrosis, effective in differentiating typical from atypical carcinoids. Meanwhile, the histopathologic subtyping of carcinoid tumours might come up with recognition of still not yet integrated characteristics relevant for therapeutic strategies and follow-up outcome.
Objectives: The histopathology of carcinoid tumours may reveal particular and subtle morphological features, still not considered reliable in actual 2014 WHO Classification beyond necrosis/mitosis, and immunohistochemistry markers. The reported cases highlight different morphology in this group of tumours consistent with recognition and reporting.
Case reports: Case 1: Typical carcinoid – 81-years-old woman with previous known gastrointestinal adenocarcinoma and left upper lobe nodule during follow up. Surgical biopsy was performed, consisting of a 1.4 × 1.4 × 0.8 cm measuring bronchial nodule, with scarce involving pulmonary parenchyma. Case 2: Typical carcinoid – 49-years-old woman with persistent cough and relevant weight loss. Right upper lobectomy with a bronchial 1.5 cm-diameter nodule. Case 3: Typical carcinoid – 35-years-old woman with probable hamartoma in CAT diagnosis. Right lower lobe surgical biopsy with 4.5 × 4 × 3.5 cm-measures presented peri-bronchial nodule with bone-hardness sectioning. All cases belonged to females between 35-81 years old presenting bronchial typical carcinoids, two located in the upper lobes and one in a lower lobe. The size of the lesions ranged between 1.4 cm and 4.5 cm and the three were considered to represent typical carcinoids due to solid, trabecular, small nests or organoid neuroendocrine typical patterns, together with expression of TTF1 in cases 1 and 2 (absent in case 3), CD56 and chromogranin A. Beyond those characteristics, case 2, presented with two clear different morphological patterns distinguished with CK7 expression in solid pattern, absent in trabecular pattern. Case 3, the largest case, had relevant bone-matrix well known in literature and yet less often observed nowadays and in this case, hilar lymph node metastases were present.
Discussion: Bronchial/pulmonary carcinoids represent a group of neoplasms with a broad spectrum of morphological appearances, with different neuroendocrine markers expression, not yet clarified in prognosis, where cytoplasmic cytokeratins are also variable. Revisiting this subject correlates with searching of clinical and prognostic significance of particular epithelial differentiation or matrix particularities that may correlate either with carcinogenesis and prognosis in this group of tumours. Case 2 and case 3 reinforce this behaviour by demonstrating respectively tumoral heterogeneity and bone matrix differentiation.

Keywords: *Bronchial-pulmonary carcinoid. CK7 expression. Bone matrix.*

PC 020. A RARE CAUSE OF UPPER AIRWAY OBSTRUCTION

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Introduction: Cutaneous reactions caused by pine processionary caterpillar (Thaumetopoea pityocampa) are common in southern

European countries, where this species is endemic. Less frequently, ocular, respiratory or gastrointestinal reactions can develop. The immune response is predominantly IgE-mediated, and usually occurs 1-12 hours after contacting with the larvae urticating hairs, due to the thaumetopoein protein.
Case report: 55-year-old woman, smoker (20 pack-years), with HIV-1 infection (compromised immunological status) and paranoid schizophrenia. Admitted to the Emergency Department with severe angioedema after ingestion of pine processionary caterpillars, vomiting and abdominal pain. On physical examination: awake, eupneic, no stridor, with severe angioedema involving the tongue and lips, SpO2 97%; BP 133/79 mmHg, HR 82/min. Nasofibroscopy: swelling of the posterior wall of the nasopharynx, the epiglottis and both vocal cords, with preserved glottic lumen. The patient was medicated with hydrocortisone 200 mg, methylprednisolone 80 mg, clemastine 2 mg and epinephrine 0.5 mg. Despite optimized medical treatment with high-dose corticosteroids, anti-histamines and additional treatment with aminocaproic acid and icatibant, she had an unfavorable clinical course, with respiratory arrest and extreme bradycardia due to upper airway obstruction. She was intubated and admitted to the Intensive Care Unit. Due to persistent angioedema, mechanical ventilation was maintained for 7 days to protect the airway, as well as methylprednisolone 40 mg 8/8h and clemastine 2 mg 12/12h. Laboratory evaluation of complement (C3, C4, CH50), C1-inhibitor and free thyroxine (fT4): within the normal range. She presented gastroparesis/ileus associated with swelling of the gastrointestinal mucosa, confirmed by abdomen and pelvis CT – diffuse thickening of the gastric wall and mild parietal thickening of the small intestine. Upon resolution of gastroparesis, there was emission of several pine processionaries in the feces and the nasogastric tube. The bronchoscopy on the 7th day of admission showed no evidence of swelling of the upper airway, and the patient was extubated to spontaneous breathing, with subsequent favorable clinical course, remission of angioedema and reestablishment of gastrointestinal transit. She had acute bronchitis due to Haemophilus influenzae and was treated with a beta-lactam. Reinstitution of antiretroviral therapy was postponed to after the conclusion of antibiotics, to avoid immune reconstitution inflammatory syndrome, and the patient was started on cotrimoxazole for Pneumocystis jiroveci prophylaxis. Psychiatric treatment was optimized and she was transferred to the ward on the 8th day of admission. She maintained physical and respiratory rehabilitation, allowing for tapering corticosteroids and weaning from supplemental oxygen. The patient was discharged on the 14th day, clinically stable and medicated with prednisolone 20 mg (following a tapering schedule) and anti-histamine.

Discussion: This is a rare case of respiratory and gastrointestinal involvement due to pine processionary caterpillar ingestion in a patient suffering from a psychiatric disease. It presented with angioedema leading to obstruction of the upper airway and swelling of the gastrointestinal mucosa. Considering the poor response to the conventional treatment of IgE-mediated angioedema, it could constitute a case of hypersensitivity or toxic angioedema. Taking the clinical history into mind, it seems less probable an HIV associated angioedema, ingestion of other toxics or thyroid-related angioedema.

Keywords: *Angioedema. Upper airway obstruction. Pine processionary caterpillar.*

PC 021. A RARE CAUSE OF CHRONIC RESPIRATORY FAILURE IN ADULT

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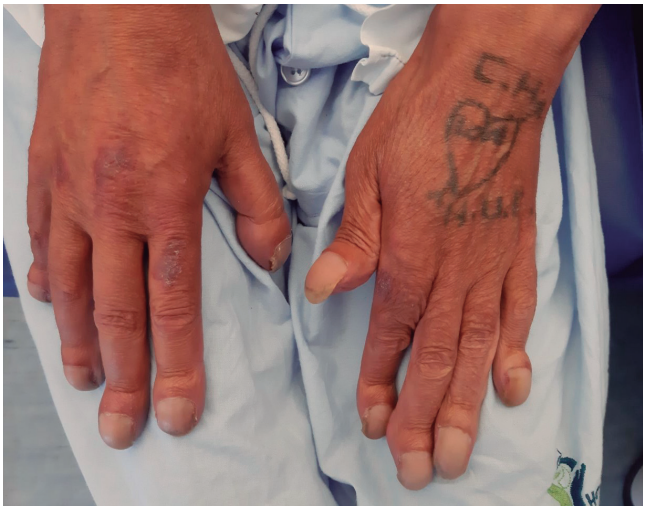
Introduction: Tetralogy of Fallot is the most common form of cyanotic congenital heart disease, characterized by ventricular septal defect, overriding aorta, pulmonary stenosis and right ventricular hypertrophy.
Case report: A 61-year-old man, Caucasian, fruit trader, ex-smoker, with previous history of tetralogy of Fallot non surgically corrected and multiple myeloma. Admitted to the Pulmonology Departement for worsening dyspnea in the last week. During the physical examination, patient with peripheral oxygen saturation of 58% and exuberant digital clubbing. On admission, arterial blood gas analysis revealed respiratory acidemia (pH 7.31, pO2 28, pCO2 49, HCO3- 24.7) and analytical study on peripheral blood showed polyglobulia and trombocytopenia. No changes on the chest radiograph. During hospitalization, the patient was eupneic, in spite of maintaining respiratory acidemia with bilevel noninvasive ventilation and never presenting pO2 greater than 40 mmHg with different FiO2 values. The CT of the chest confirmed the presence of a complex vascular malformation, with a small pulmonary artery diameter and exuberant collateral circulation in the subpleural region of the RUL and left lung fissure. There was also a right paravertebral mass and some left paravertebral nodules, suggesting extramedullary hematopoiesis. The transthoracic echocardiogram showed alterations compatible with tetralogy of Fallot with a possible right to left shunt due to interventricular communication and dilated and hypertrophied right ventricle. He was discharged home having a global



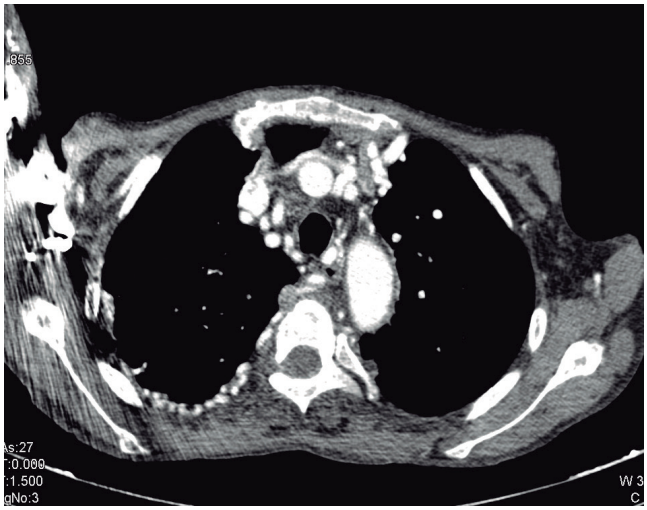


Figure PC 021

respiratory failure with FiO2 26% (pH 7.33, pO2 33, pCO2 59, HCO3-31.1) and refused home ventilation.
Discussion: This case report illustrates a rare cause of chronic respiratory failure in adult, with no relevant clinical improvement with oxygen or noninvasive ventilation therapy. It is also noteworthy for being a patient who refused surgical treatment and has long term survival comparing with other works described in literature.

Keywords: *Congenital heart disease. Digital clubbing. Respiratory failure.*

PC 022. THYMOMAS CLASSIFICATION - IN MEMORY OF JUAN ROSAI

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Introduction: In 1976 Juan Rosai and Gerald Levine established the epithelial nature of the "thymoma" and soon after, proposed the classification concerning morphology and biological behaviour of the tumours correlated with the degree of thymus capsule invasion at surgery. These conclusions were fundamental for the subsequent classifications, namely the one developed by Masaoka et al in 1981, still the most commonly used staging system for thymomas. Müller-Hermelink Histogenetic Classification (1999) still keeps being the basis of the WHO 2014 classification, after naming the Thymomas in A and/or B subtyping. The overall survival for type AB and B1 is very good with overall survival of 80-100% at 5 and 10 years and for type B2, a reported overall survival of 70-90% at 10 years is recognized.
Objectives: The memory of Juan Rosai (August 20, 1940-July 7, 2020) the authors calls attention for the actual 2014 WHO thymomas classification by applying broad morphology recognition – case report of a Thymoma AB, with B1 and B2 components.
Methods: A 65-years old woman was hospitalized suspecting of Rickettsial infection. A solid 11.3 × 7 cm antero-superior mediastinum mass was detected at CT and was proposed for surgical removal.
Results: The surgical specimen weighed 329g and measured 12x9x-7cm, delimited by thymus thin and shiny capsule. At cut surface, tumoral tissue was vaguely lobulated, tan to pink and smooth. The microscopic evaluation detected two different components: one with a clear nodular pattern with bland spindle cells bundles – thymoma A, interspersed with B pattern where variable population epithelial superimposing T cells defined patterns of thymomas type B1 and type B2.
Conclusions: Thymomas are a rare malignancy in general, but they are the most common mediastinal tumours in adults over fourties, being the type AB the most common, followed by type B2 and B1. Type AB thymoma encompasses a poverty of lymphocytes over spindle cells (type A) besides other epithelial component rich in T lymphocytes (type B). The patients age ranges for type AB is wide as 11 to 89 years, but with a mean age of 57 years incidence. No etiologic factor has been still attributable for the appearance of this kind of neoplasia, but there are some reports and putative thymic epithelial cells precursors. Here we present a case where it was possible to subtype B component thymoma in either B1 and B2 by applying 2014 WHO recommendations. Taking into account that the Type B2 thymoma has a poorer outcome compared to Type AB and Type B1 thymomas, it is important to differentiate and subtype the B component when present, to preview of possible therapeutic strategies in follow up.

Keywords: *Thymomas. Juan Rosai. Thymoma A and B.*

PC 023. "BLOOM" AND THE LUNG: A POSSIBLE CAUSE FOR HEMOPTYSIS

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Introduction: Synthetic cathinones are psychostimulants similar to amphetamines that have emerged as alternatives to illicit drugs (such as ectasy, cocaine and amphetamines). These substances are sold under cover as "bath salts" and "plant fertilizers" and are

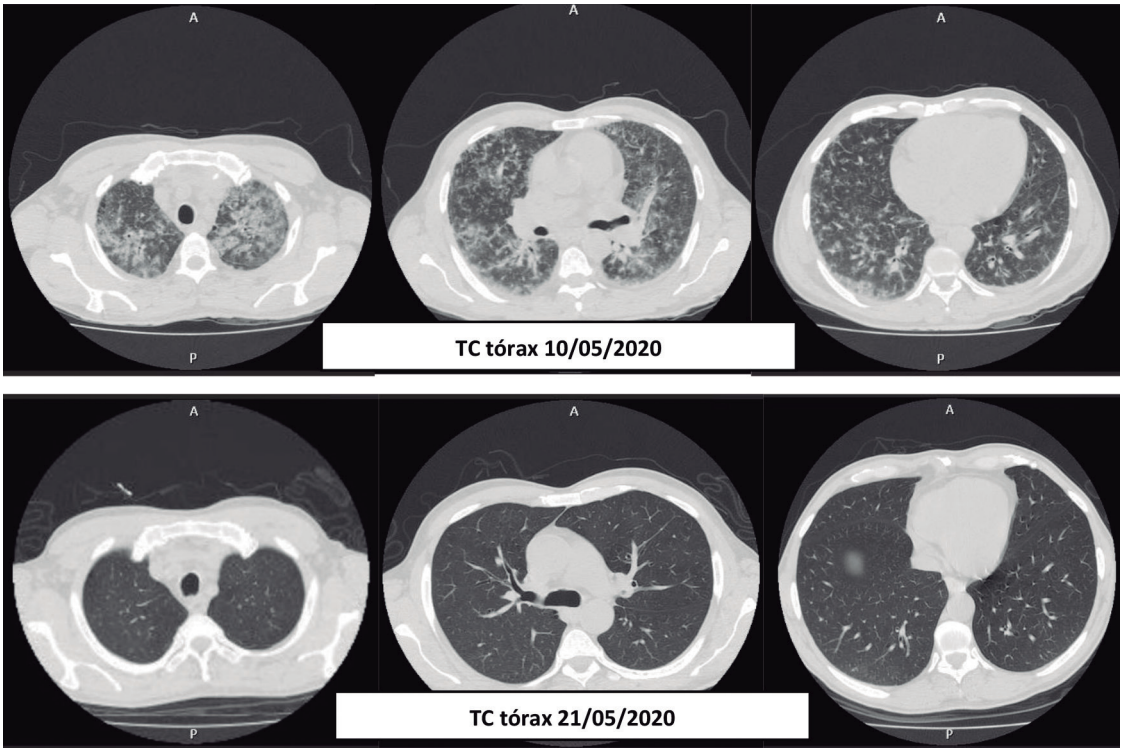

Figure PC 023

known by their street names "Bloom", "Cloud nine", "Vanilla sky", etc. The association between cocaine and amphetamine consumption and the occurrence of diffuse alveolar hemorrhage (clinical and subclinical) is well documented in the literature. In what concerns to synthetic cathinones, there are few reports of pulmonary effects caused by their intoxication.
Case report: The authors report a case of a 47-year-old patient with personal history of smoking, alcoholism and toxicophilia, without other comorbidities. He went to the emergency department (ED) after presenting cough, moderate hemoptysis and chest pain. Upon admission, hypotension and a drop of four grams of hemoglobin were detected in the blood count. The arterial blood gas analysis did not reveal hypoxemia at an early stage, but during his stay in the ED there was a clear worsening, with arterial oxygen pressure (PaO2) that progressively decreased to 49 mmHg at FiO2 21%. Thoracic computed tomography (CT) was performed, and ill-defined alveolar opacities were detected in both lungs, mainly in the upper lobes, apparently corresponding to foci of alveolar hemorrhage. Of the remaining analytical study there was an increase in inflammatory parameters, thrombocytopenia, eosinophilia, acute kidney injury, hyperbilirubinemia and an increase in liver cholestasis parameters. He was then admitted for investigation and therapy. Bronchofibroscopy was performed on the 4th day of hospitalization, which did not document any evidence of hemorrhagic content or any other visually identifiable lesions. The microbiological study did not isolate any agent. Similarly, the autoimmunity study was negative and the serological screening for leptospirosis was also negative. During hospitalization, the patient admitted to have sporadic consumption of "Bloom" and that in the day before his hospital admission he consumed an amount of these substances four times higher than usual. There was a gradual improvement in his symptoms only with supportive therapy (fluid therapy, antibiotics, aminocaproic acid and oxygen therapy), without any need of corticotherapy. The infiltrates present in the imaging evaluation showed a favorable evolution with complete regression after eleven days of hospitalization.
Discussion: In this case, the intake of synthetic cathinones is assumed as the most probable cause for hemoptysis and infiltrates present in this patient computed tomography. In the literature, there is at least one case of diffuse alveolar hemorrhage associated with the consumption of these substances. The analytical changes presented by the patients can also be justified by these consumptions.

Keywords: *Hemoptysis. Bloom. Diffuse alveolar hemorrhage.*

PC 024. EHLER-DANLOS SYNDROME TYPE IV – HEMOPTYSIS AND DEATH SECONDARY TO NON HAEMORRHAGIC COMPLICATION

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Introduction: Type IV Ehler-Danlos syndrome is associated with a mutation of COL3A1 gene of type III collagen, causing vessel and visceral walls weakness. Patients frequently died during the 3rd decade of life due to spontaneous vascular wall or visceral ruptures. The most frequently described pulmonary complications are pneumothorax, followed by hemoptysis. Here we report a case of a patient with hemoptysis with a fatal outcome due to a thrombotic event.
Case report: Male patient with type IV Ehler-Danlos Syndrome, diagnosed by genetic study during adolescence, following a suggestive familiar history. He did not develop complications during childhood and adolescence. At the age of 17, he was admitted for hemoptysis. On computerized tomography (CT), small areas of ground glass opacities suggestive of alveolar haemorrhage were seen. He kept sporadic episodes of small volume hemoptysis. At 19 years-old, he was hospitalized for large volume hemoptysis. On CT scan (in late arterial phase) multiple bilateral ground-glass opacities suggestive of diffuse alveolar haemorrhage were identified. There were large cavities with liquid filling and air-liquid level suggestive of haemorrhagic cavitations. Despite the decrease in haemoglobin concentration, he was hemodynamically stable without respiratory failure, and was admitted in an intensive care unit (ICU) for close monitoring. In first day of admission he was transferred to pulmonology ward, as he was clinically stable. The case was discussed with other specialties: he was not considered a candidate for thoracic surgery, due to high risk of vascular manipulation; he was refused also by interventional radiology, for the same reason and due to the lack of visible bronchial arteries to embolize. At 7th day of admission, he did a pulmonary angio-CT scan to investigate any territory in pulmonary circulation eligible for embolization, in which an incidental bilateral and extensive pulmonary embolism (PE) was identified. The patient was asymptomatic and the PE was low risk, despite the radiological extension. Escalation of care was proposed, however admission on ICU was declined and it was decided, in multidisciplinary team, not to initiate hypocoagulation due to great haemorrhagic risk and a stratification of low risk PE. About 48 hours after, he had a syncope episode with echocardiographic documentation of right ventricle dysfunction and he was admitted to the ICU, where hypocoagulation and inotropic support were initiated. After 24 hours of stability, a supraventricular tachycardia with hemodynamic impairment was installed, and posteriorly cardiac arrest without recuperation, even after 1 hour of advance life support and intra arrest thrombolysis. Autopsy was not performed.
Discussion: Pulmonary substance loss with cavitation, pneumothorax and hemoptysis should be kept in mind for differential diagnosis of possible rare diseases, that can be in their initial presentation. This case permits to illustrate the complexity of pulmonary involvement of type IV Ehler-Danlos syndrome and the challenge of managing a rare disease with great haemorrhagic risk due to vascular fragility, limiting diagnostic and therapeutic alternatives. Multidisciplinary approach and discussion are fundamental.
In literature the diagnosis is sometimes made in autopsies, which here may have helped to elucidate the etiopathogenesis of PE.

Keywords: *Ehler-Danlos syndrome type IV. Hemoptysis. Pulmonary cavitation.*

PC 025. HOW TO MEASURE INHALERS ADHERENCE?

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Laboratórios Bial.

Introduction: Adherence is a key point to the success of any treatment. Poor therapeutic adherence is associated with inadequate control and worse prognosis, both in asthma and COPD. Inhaled medications are particularly challenging in terms of adherence. Approximately 50% of asthmatics fail to take their inhalers at least part of the time. In COPD, the level of adherence is also low. Patients tend to overestimate adherence, so more reliable methods are needed for monitoring.
Objectives: In this work, we will review existing methods to assess adherence to inhaled therapy.
Methods: A literature search was performed in Pubmed and Embase databases. Publications in English from 2015 to 2020, focusing on measuring inhaler adherence in asthma and COPD were included. GINA and GOLD reports were also analysed.
Results: Several methods to assess inhaler adherence were found: Biochemical monitoring: measure a concentration of the drug/metabolite or biomarker. It's the most scientific method, easy to measure, accurate and can objectively confirm drug intake. However, it can be expensive, invasive and sensitive to pharmacokinetic

variations. To be more accurate, it requires repeated measures, which is impractical and costly. Questionnaires are short, easy to administer and inexpensive. They can provide data on adherence patterns and reasons for missed doses. Several instruments are validated. As disadvantages, they are subjective, influenced by recall or reporting bias, inaccurate and overestimate adherence. Electronic databases: describe how often a patient is prescribed (prescription data) or buy (pharmacy dispensing records) a medication over a given time period. It's an objective measure, simple, easy to obtain, low cost, can be applied to a large population. It provides information on patient persistence towards their medication. Although objective, prescription data only gives an indication of nonadherence. Also, pharmacy dispensing records does not allow to know if patients take their medication. Canister weight or dose counter: measure remaining medication by weight or number of doses compared with the amount that should remain at that time. It's an objective method, simple, low cost, easy to implement and is useful as a guide to adherence in some patients. Nevertheless, they may not bring their medication or manipulate it, leading to an overestimation of adherence. It does not confirm that medication was taken nor provide data on timing or effectiveness of the doses. Electronic monitoring device (EMD) is the current gold standard. It objectively measures when and how often patients activate their inhaler. EMD can include a sensor of inhalation (acoustic, flow sensors or video capture) that can address inhaler technique. Nonetheless is expensive, subject to malfunction. EDM are not available for all types of inhalers.
Conclusions: In asthma and COPD, adherence has a clear impact on outcomes. One of the greatest challenges nowadays is to increase adherence to inhaled therapy. Measuring adherence is extremely important and several approaches may be used, each with distinct advantages and disadvantages. EMD has enable a more accurate assessment of adherence, enabling feedback to patient and personalized treatment, which may enhance precision medicine in the treatment of chronic respiratory diseases.

Keywords: *Inhalers adherence. Asthma. COPD.*

PC 026. MOUNIER-KHUN SYNDROME

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Introduction: Mounier-Kuhn syndrome (MK) or tracheobronchomegaly is a rare disease, characterized by an increase in the diameter of the trachea and bronchi. The nonspecific clinical presentation and the delayed diagnosis after years of symptoms with recurrent respiratory infections and bronchiectasis, leads to an underdiagnosed disease. We present 3 clinical cases.
Case reports: Case 1: Male, 65 years-old, non-smoker, heavy duty driver with history of pulmonary tuberculosis. MK was diagnosed by chest CT at 63 years of age, which revealed an increase in the trachea diameter (30 mm) and main bronchi (21 mm). Pulmonary function showed pulmonary restriction. Clinically, the patient reports exertional dyspnea and occasional mucous expectoration, without exacerbations. Case 2: Male, 56, non-smoker, employee of a food refrigeration company, with personal history of recurrent infections and non-allergic asthma. A diagnosis of MK was performed at the age of 41, after suspected enlargement of the trachea on chest radiography. Chest CT scan was requested, which confirmed diffuse ectasia of the trachea (38 mm) and the main bronchi (left 28 mm, right 45 mm). Respiratory function is stabilized, presenting an obstructive change reversible to the inhaled bronchodilator. Clinically, the patient details tiredness and mucous sputum in moderate volume. Since the diagnosis, the patient has been suffering several respiratory complications requiring hospitalization (5 in 2019). Currently being treated with the 3rd cycle of bacterial immunotherapy with good response. Case 3: Male, 64 years old, ex-smoker of 80 pack years, retired (construction). History of COPD, pulmonary tuberculosis and emphysema. MK was diagnosed at 54 years of age through chest CT that showed an increase in the diameter of the trachea (36 mm) and the main bronchi. He presents severe obstructive ventilatory function (FEV1 post-BD 46.2%), in worsening. Bronchofibroscopy was performed and showed abundant mucopurulent secretions. Clinically, the patient reports tiredness and dyspnea, with no exacerbations.
Discussion: In these cases, we can verify a late diagnosis of the disease and different clinical presentations, partly justified by the non-specific symptoms and by other respiratory pathologies coexistence. The diagnostic suspicion on chest radiography should motivate an evaluation by CT which confirms the diagnosis.

Keywords: *Tracheobronchomegaly. Mounier-Kuhn syndrome. Bronchiectasis.*

PC 027. PULMONARY ARTERIOVENOUS MALFORMATIONS AND HEREDITARY HAEMORRHAGIC TELANGIECTASIA

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Introduction: Pulmonary arteriovenous malformations (PAVMs) are structurally abnormal vascular communications that provide a continuous right-to-left shunt between pulmonary arteries and veins. It is a rare clinical condition with an incidence of 2-3/100,000, twice as prevalent in females. About 70% are congenital. Secondary forms of MAVP are less frequent. About 10% are identified in childhood, with a progressive increase in incidence until the 5th-6th decades of life.
Case report: The authors present the case of a 56-year-old woman, former smoker, who was referred to pulmonology consultation for hypoxemia of unclear aetiology. She had a story of Obstructive Sleep Apnea, successfully treated with mandibular advancement device, and episodes of low peripheral oxygen saturation (about 90%) during the anesthetic procedure of two previous surgical interventions. This patient had a clinical history of multiple episodes of spontaneous small volume epistaxis, asthenia and low tolerance to medium exertion. Patient's mother had a history of recurrent epistaxis. Pulmonary function tests showed low diffusing capacity for carbon monoxide (DLCO 70%) and PaO2 of 62 mmHg. Chest CT scan revealed pulmonary nodules in apparent contact with adjacent vascular structures, the largest with 9 mm in diameter, one located in the lower left and other in the middle lobe and two other nodular formations in the upper and lower right lobes with 5 mm diameter each. The remaining complementary study, shown neither anemia nor iron deficiency. The echocardiogram and abdominal ultrasound did not show significant changes and the cranioencephalic MRI showed an incidental cavernoma with no other alterations. The diagnosis of Hereditary Hemorrhagic Telangiectasia (THH) was established and the patient underwent a pulmonary embolization of the larger (12 mm) high-flow PAVM in the left lower lobe. Another PAVM was observed in the right lower lobe, pericentrimetric and with low-flow, and therefore embolization was not possible. The patient had a significant clinical improvement after this intervention. A molecular study of the ENG and ACVRL 1 genes was performed, which did not reveal pathogenic variations.
Discussion: The diagnosis of THH is based on the Curaçao criteria and considered definitive when at least 3 of the 4 criteria are met: recurrent spontaneous epistaxis, telangiectasia, lung, liver, gastrointestinal or central nervous systems arteriovenous malformations or at least one first-degree family member with a diagnosis of THH. PAVMs affects 15-30% of the patients with THH, and should always be screened in any patient with this pathology and treated when necessary. Although no mutations were present in the genes most frequently involved in THH, in the present case the diagnosis was established based on 3 of the Curaçao criteria. Since it is a rare

autosomal dominant disease, often with a silent clinical course but with important clinical implications, family screening should be considered.

***Keywords**: Hereditary haemorrhagic telangiectasia. Pulmonary arteriovenous malformations.*

PC 028. MICROSCOPIC POLYANGIITIS WITH PULMONARY, RENAL AND CARDIAC INVOLVEMENT

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Introduction: Microscopic polyangiitis (MP) is a small vessel systemic vasculitis associated with antineutrophilic autoantibodies (ANCA). It is a rare disease. The average age of onset is between 50 and 60 years old. MP can affect multiple organs, resulting in nonspecific clinical manifestations, which can difficult diagnosis and initiation of therapy.
Case report: Female patient, 74 years old, independent for activities of daily living, with a clinical history of dry cough with 4 years of evolution, beginning in 2008, and multiple observations in primary health care with several chest radiographs showing bilateral pulmonary infiltrates. In 2009, she was evaluated in pneumology consultation and performed a computed tomography (CT) scan of the chest that revealed traction bronchiectasis, areas of reticular pattern and micro-cystic "honeycomb" areas, dispersed bilaterally, simulating nonspecific interstitial pneumonia fibrosis subtype. She went to the emergency department in July 2012 with a clinical history of worsening dyspnea, with dyspnea to low work load, dry cough, fever, epistaxis, asthenia, anorexia and not quantified weight loss with 2 months of evolution. She took antibiotics in this period, but without improvement. Laboratory analyses: anemia, increased inflammatory parameters, impairment of renal function; urinary sediment with haematuria and leukocyturia; chest radiography showing extensive bilateral interstitial infiltrate compatible with pulmonary fibrosis. She was hospitalizated with empiric antibiotic therapy with Piperacillin and Tazobactam. Clinical investigation revealed myeloperoxidase-ANCA positive; CT of the chest with pulmonary fibrosis predominantly upper and central, some pattern in ground glass and mosaic; bronchofibroscopy without macroscopic changes; bronchoalveolar lavage with macrophage alveolitis; pulmonary function tests showing a mild restrictive pattern and decreased diffusing capacity of the lungs for carbon monoxide. The transthoracic lung biopsy that revealed usual interstitial pneumonia. Renal biopsy was also performed, which was inconclusive and electromyography did not reveal any changes. Diagnosis of MP with pulmonary and renal impairment was established. Induction therapy with methylprednisolone was initiated, resulting with reasonable clinical improvement and recovery of renal function. After that, prednisolone and azathioprine was intro-

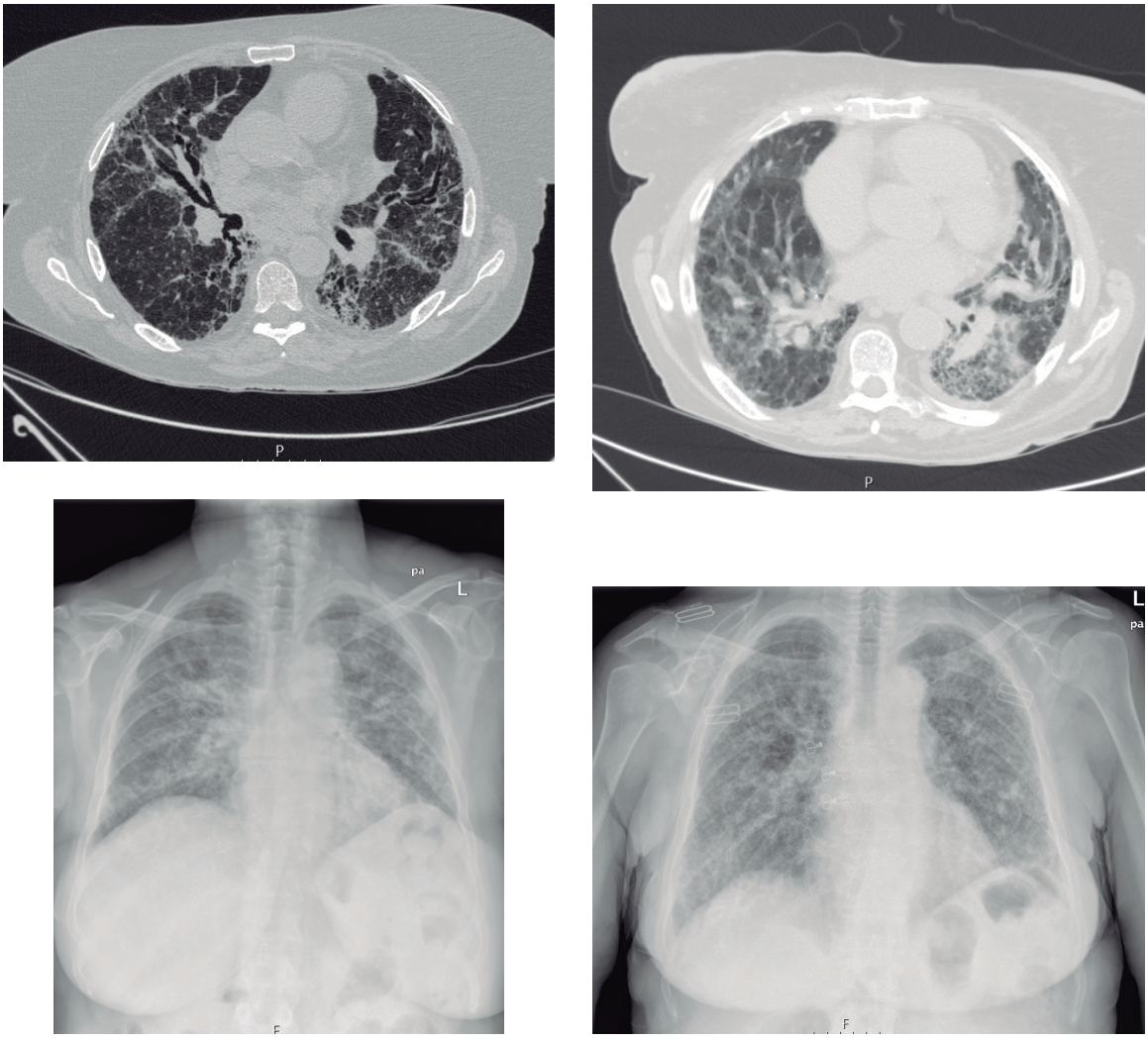

Figure PC 028

duced. During hospitalization, the patient developed severe acute respiratory failure with necessity of non-invasive ventilation and global heart failure with acute lung edema, admitting a Takotsubo Syndrome. She was discharged home with oxygen therapy and initiated follow-up in a Diffuse Lung Diseases consultation; Autoimmune Disease consultation and Nephrology Consultation. She was clinical and radiologically stable with prednisolone and azathioprine, until February 2018. At that time she developed asthenia, anorexia, short-term dyspnea, productive cough; laboratory test revealed anaemia, increased inflammatory parameters and impairment of renal function. It was assumed relapse of MP with pulmonary and renal impairment. It was necessary a therapeutic adjustment with corticosteroid increment and introduction of rituximab, resulting on reasonable clinical response.
Discussion: In MP, early diagnosis and treatment are associated with a better prognosis, allowing functional organ preservation and reduce relapses, but they are conditioned by nonspecific clinical manifestations.

Keywords: *Microscopic polyangiitis. Usual interstitial pneumonia. Pulmonary fibrosis. Takotsubo syndrome.*

PC 029. TUBERCULOSIS - FOCUS ON THE PATIENT PROFILE

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Introduction: Tuberculosis (TB) remains an important disease to diagnose and treat. Clinical, analytic and radiological findings are crucial to a prompt diagnose.
Objectives: Characterize the profile of the TB patients diagnosed from 2018 to 2019.
Methods: Retrospective and descriptive study of TB patients.
Results: There were 26 patients with Mycobacterium tuberculosis isolation. 73.1% (19) were male. Median age was 49.5 years. 19.2% (n 5) were foreign nationals. It was found that ten patients (41.7%) had respiratory pathology and 42.3% (n 11) were smokers. From the analysis of the immunologic status, 50% (n 13) of the patients had at least one immunosuppressive condition, 28% (n 7) had alcoholic habits, 16% (n 4) had cancer; 8% (n 2) were diabetic, 4% (n 1) were under systemic corticosteroid therapy and 4% (n 1) under biological therapy. The radiological analysis showed, 53.8% (n 14) with condensation, 11 of these had cavitations; 20.8% (n 5) nodular pattern; 4.2% (n 1) mass and 33.3% (n 8) tree-in-bud pattern isolated or associated with other radiographic findings. Six patients (25%) had also pleural effusion. Diagnostic collected samples: 46.2% (n 12) sputum, 50% (n 13) bronchoalveolar lavage and 3.8% (n 1) pleural fluid. 61.5% (n 16) had positive acid-fast bacilli smear. Baciliferous patients had more often pulmonary cavities ($p = 0.012$). Drug resistance was found in 26.9% (n 7) cases, isoniazid alone in 7.7% (n 2) and 3.8% (n 1) had multidrug-resistant tuberculosis, with genomic mutations in inhA and rpoB genes.
Conclusions: Knowing the clinical and resistance profile of TB patients helps in prompt diagnosis and treatment, thus contributing to reducing the spread of the disease, clinical improvement and the reduction of resistance rates.

Keywords: *Tuberculosis. Mycobacterium tuberculosis complex.*

PC 030. TUBERCULOUS PNEUMONIA - A TURNING POINT IN THE DIFFERENTIAL DIAGNOSIS

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Introduction: Tuberculosis is an old infectious disease, but by no means less current. It can present in different ways and affect any organ, although pulmonary involvement is the most frequent. It presents, mostly, as an insidious infection, with dry cough, fever and radiologically with alveolar opacities with a tendency to confluence and cavitation. This less frequent form of tuberculosis is more commonly found in immunocompromised patients.
Case report: A 23-year-old man with no relevant personal history, was hospitalized with fever, dry cough, partial respiratory failure and a left lower lobe consolidation in the thorax X-ray. By isolation of Influenza A virus and absence of microbial isolations, therapy with oseltamivir and levofloxacin was instituted, with subsequent favorable clinical, analytical and gasometric evolution. He is readmitted again due to fever, dry cough, weight loss, elevated inflammatory parameters and worsening radiographic image and antibiotic therapy with piperacillin/tazobactam was started. The clinical history, laboratory and radiological findings led to high suspicion for Tuberculosis, so bronchofibroscopy was performed, whose products collected did not reveal the presence of any pathogen. In this context, he performed a computed tomography scan of the chest, which showed extensive consolidation with air bronchogram and heterogeneous opacification, occupying almost the entire left lower lobe with an area of cavitation without bronchial communication and multiple mediastinal, subcarinal and hilar adenopathies. Thus, he repeated bronchofibroscopy and microbiological exams and was then able to isolate acid resistant bacilli, the microbacteriology being positive for Mycobacterium tuberculosis in bronchial secretions. HIV research was negative. The diagnosis of pneumonia due to bacilliferous tuberculosis was established, and he started therapy with isoniazid, rifampicin, pyrazimanide and ethambutol. The patient is in the second month of asymptomatic treatment and with clinical and radiographic improvement.
Discussion: We underline the need for a high index of suspicion for the diagnosis of infection by M. tuberculosis, even in the absence of known prior contact and immunosuppression. We also want to reinforce that this infection, which is still so frequent in Portugal, can be masked by treatment with quinolones.

Keywords: *Pneumonia. Tuberculosis. Immunocompetent. Quinolones.*

PC 031. PERSISTENT PNEUMONIA IN TIMES OF SARS-COV2

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Case report: A 45-year-old woman, natural from Brazil with a history of Crohn's disease under Infliximab who went to the ER due to fever, cough and dyspnea associated with asthenia, night sweats and diarrhea with 5 weeks of evolution. Chest radiography showed opacity in the lower third of the right lung field. She had already done 3 cycles of antibiotics as outpatient, without improvement. Admitted in Internal Medicine ward, she collected blood cultures and urinary antigens and started intravenous broad spectrum AB. Primarily, it showed radiological improvement, with a slight decrease in the opacity area, but maintained feverish peaks. In the second week, imaging got worse with persistent fever. Chest CT was performed and a consolidation area with air bronchogram was identified in the apical segment of the RLL with homolateral pleural effusion. Case discussed with Infeciology to validate it as suspect for SARS-CoV2 infection, however, it was not considered as such. Given the pressing, in the week after, she did a nasopharyngeal exudate RT-PCR swab for SARS-CoV2 which was negative. Due to persistent fever without radiological improvement, she underwent several broad spectrum AB including nosocomial agents coverage. New thoracoabdominopelvic CT revealed, beyond the consolidation with air bronchogram, ground glass foci in RUL and LLL. This was followed by flexible bronchoscopy, which showed no changes and were collected BAL for bacteriology and mycobacteriology, Ag P. jirovecii, TAAN for M. tuberculosis, RT-PCR for SARS CoV2 and cytol-

ogy. The results were sputum positive for SARS-CoV2 and negative for the other samples. She was transferred to the COVID ward, where antibiotics were suspended and fever stopped. She was treated with hydroxychloroquine and lopinavir/ritonavir, with clinical and radiological partial improvement. She was discharged on the 44th day of hospitalization and was decided to delay Infliximab until the origin of the RLL consolidation be identified. Four weeks after discharge, she started bloody diarrhea, petechial rash and tibiotarsal monoatritis. Due to SARS-CoV2 positive nasopharyngeal swab, she returned to the COVID ward for worsening Crohn's disease. It was initiated PDN 20 mg with progressive improvement. Chest CT showed decreased of previously existing ground glass areas, but worsening of the RLL consolidation with the appearance of a centrilobular micronodular pattern. Repeated sputum collection for mycobacteriological examination whose direct and cultural tests were negative. The introduction of corticotherapy led to clinical progress, which allowed discharge oriented to perform transthoracic biopsy and to PDC for new sputum collections. Biopsy was postponed after a direct positive mycobacterial test. She started HRZE with clinical improvement.
Discussion: Nowadays, the constant concern with the SARS-CoV2 pandemic, influence the clinical reasoning and the degree of suspicion in cases that usually would be clearer. Nevertheless, it shows us that the indiscriminate use of antibiotics, beyond not being a solution for infections that are not correctly identified, can also contribute to their camouflage, delaying the diagnosis and compromising the institution of the recommended treatment.

***Keywords**: SARS-CoV2. Persistent pneumonia. Antibiotics. Immunosuppression. Tuberculosis.*

PC 032. SIMULTANEOUS DIAGNOSIS OF TUBERCULOSIS AND RARE ATYPICAL PLEURAL MYCOBACTERIOSIS IN AN IMMUNOSUPPRESSION CONTEXT

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Introduction: The simultaneous detection of Mycobacterium tuberculosis (MTB) and a Nontuberculous Mycobacteria (NTM) in the pleural space is possible, and it is debatable if the NTM may be a colonizing or pathogenic agent. The presence of more aggressive NTM species may motivate the need for targeted treatment. Mycobacterium heckeshornense is a rare, slow-growing NTM, phylogenetically related to Mycobacterium xenopi and with higher pathogenicity.
Case report: Male patient, 26 years old, industrial maintenance technician, non-smoker. Diagnosed 8 years ago with juvenile dermatomyositis with severe vasculopathy, cutaneous calcinosis and interstitial lung involvement with non-specific interstitial pneumonia (NSIP) under immunosuppressive therapy with corticosteroids, hydroxychloroquine (400 mg id) and mycophenolate mofetil (1,000 mg bid). During the patients' Diffuse Lung Diseases follow up appointments, a bilateral pleural effusion was detected, initially as a small volume, and without respiratory or constitutional symptoms. Toward diagnostic evaluation, two thoracenteses were performed, the second combined with a pleural biopsy. At the examination of the bronchoalveolar lavage, no microbiological isolations were obtained. The pleural fluid (PF), extracted in the first thoracentesis, presented exudative characteristics with a predominant lymphocyte presence and ADA of 161U/L. The second thoracentesis, complemented by a pleural biopsy, had similar characteristics. Molecular detection of both samples for M. tuberculosis complex, Mycobacterium intracellulare and Mycobacterium avium DNA were negative. MTB culture isolates were obtained from the PF, however, due to contamination of the strain, no antibiotic susceptibility tests were conducted. Sputum stains for mycobacteria were successively negative. Given the diagnosis of pleural tuberculosis, immunosuppressive therapy was discontinued and therapy with HRZE was initiated with an adjustment of dosage according to the patients' weight. During the 3rd month of treatment, a Mycobacterium heckeshornense was identified in the culture test of the second thoracentesis, this finding coincided with a new onset of fever, asthma and night sweats associated with an increase of the pleural effusion, especially on the right hemithorax. Taking into account the patients' symptoms, the worsening of the pleural effusion, and the necessity to restart immunosuppression, essential to control his underlying disease, it was decided to adjust the antibacillary medication in order to cover both MTB infection and plural Mycobacterium heckeshornense. Clarithromycin 500 mg bid and levofloxacin 750 mg/day were added, and Pyrazinamide was suspended. Clinical and radiological evolution was favorable.
Discussion: To the authors' knowledge, this appears to be the first case of simultaneous pleural infection by MTB and Mycobacterium heckeshornense, with no evident involvement of the lung parenchyma. In the absence of specific guidelines to treat this NTM, the recommended treatment regimen for Mycobacterium xenopi was adopted. This case highlights the relevance of simultaneous detection of NTM and MTB because both may hold an important pathological significance, particularly in the context of immunosuppression, justifying targeted treatment.

***Keywords**: Nontuberculous mycobacteria. Mycobacterium tuberculosis. Mycobacterium heckeshornense. Pleural infection.*

PC 033. A LATE DIAGNOSIS: CASE SERIES ANALYSIS OF TUBERCULOSIS IN THE ELDERLY

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Introduction: We have seen an increase in mean age of tuberculosis patients, with an increase in incidence among older adults. In these patients, the diagnosis is often delayed for reasons attributable to the patient, but also to the health care. The authors present 4 cases in which the diagnostic suspicion failed.
Case reports: Clinical Case 1: A 79-year-old woman with history of pulmonary tuberculosis (PTB) in her youth. In 2012, she detected a non-painful swelling in the left axillary region that spontaneously regressed. In 2016, a new left cervical swelling appeared, which decreased without specific treatment. In 2017, she noticed a left axillary swelling, reason why she went to the doctor after 6 months. Two months later she underwent a lymph node excision which revealed necrotizing granulomatous lymphadenitis and a positive nucleic acid amplification test (NAAT) for Mycobacterium tuberculosis (MT). Lung involvement was excluded and the patient started treatment with isoniazid/rifampicin/pyrazinamide/ethambutol (HRZE). Clinical Case 2: A 83-year-old man, former smoker, presented in February/2020 a hard, painful, fixed left cervical lymphadenopathy (4 × 2 cm), and an exudative left supraclavicular lesion (1 × 2 cm) with peri-lesional erythema (despite antibiotic cycles). He also reported recent cognitive deterioration, anorexia and weight loss (15 kg) and dysphonia with 1 year of evolution. He underwent aspiration biopsy that revealed acute inflammation and absence of malignant cells, compatible with abscess (mycobacteriology exam was not requested). Referenced to the Centre of Pulmonology Diagnosis (CPD) in June/2020, he collected 5 sputum samples - negative mycobacteriological exam. Cervical-thoracic CT identified left cervical lymphadenopathies and a lesion in the right vocal cord. Due to clinical worsening, fever and increased suppuration, he was hospitalized and the exudate was collected for mycobacteriology - smear and cultural exams were positive, NAAT was positive for MT sensible to first-line drugs. HRZE was started (2 months after referral to CPD). Biopsy of the right vocal cord re-

vealed advanced stage invasive squamous cell carcinoma for palliation. Clinical Case 3: A 77-year-old man, with history of pachymeningitis under corticosteroid therapy and azathioprine, secondary Diabetes Mellitus (DM), 2 admissions for renal/buttock abscess and bacteraemia. Due to persistent back pain for five months, an MRI was performed showing a fracture of D6-D7 vertebral body. The vertebral biopsy identified NAAT positive for MT. He was referred to the CPD to start HRZE, three months after the fracture was identified. Pulmonary involvement was excluded. Clinical Case 4: A 88-year-old woman with history of PTB in her youth, dementia and type II DM. In 2011, due to a left submandibular swelling, she performed aspiration biopsy that showed a lymph node negative for malignant cells (mycobacteriology was not requested). In June/2020, dysphagia, anorexia and weight loss with 3 months of evolution prompt an ER visit. Cervical CT identified left submandibular lymphadenopathies, which aspiration puncture revealed a positive cultural examination for MT sensible to first-line drugs. HRZE was started ten weeks after ER admission, without complications.
Discussion: These clinical cases illustrate the need to maintain a high level of tuberculosis suspicion in older age groups.

Keywords: *Tuberculosis. Elderly. Delayed diagnosis. Treatment.*

PC 034. RESISTANT TUBERCULOSIS IN THE REGION OF LISBON AND TAGUS VALLEY – RETROSPECTIVE ANALYSIS OF 8 YEARS OF THE REGIONAL REFERENCE CENTRE

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Introduction: The occurrence of strains of the Mycobacterium tuberculosis resistant to anti-bacillary (multi-resistant and extensively resistant) constitutes a new threat to the global control of tuberculosis. In Portugal, the region of Lisbon and Tagus Valley is one of the most affected areas by resistant tuberculosis.
Objectives and methods: To characterize the individuals of adult age, with the diagnosis of resistant tuberculosis (multi-resistant (MDR-TB) and extensively resistant (XDR-TB)) in the period between 2012 and 2019 in the Multi-resistant Tuberculosis Regional Reference Centre of Lisbon and Tagus Valley. Retrospective study with descriptive analysis of demographic aspects, comorbidities, risk factors, prior history of tuberculosis, form of tuberculosis, type of resistance, its evolution throughout the years and duration and success of the treatment.
Results: Sample of 86 patients (corresponding to 90 cases), 65.1%male with an average age in the diagnosis of 42 years old and the majority (67.4%) of Portuguese nationality. Among the foreign individuals, 42.3% presented the diagnosis of resistant tuberculosis until the first year in Portugal. The majority of the individuals belongs to the district of Lisbon (95.3%) and 34.9% to the municipality of Lisbon. The average delay between the beginning of the symptoms and the first appointment in this context was of 43.5 days. The most frequent comorbidities associated were HIV (32.6%) and chronic hepatic disease (11.6%). 16.3% presented alcoholic dependency and 16.3% drug addiction. The most frequent forms of tuberculosis observed were the pulmonary, in 82.2% of the cases (63.5% of these presented cavitary disease) and the disseminated, in 5.6%. 26.7% of the patients presented a prior history of tuberculosis and 37.5% of these hadn't completed de adequate treatment. It was verified that most cases (75.6%) were MDR, 22.1% of these being pre-extensively resistant. 24.4% were extensively resistant. The multi-resistance and extensively resistant tuberculosis cases have been decreasing. In the last 3 years, an average of 4.3 diagnosis per year of MDR occurred and there were not new cases of XDR. The average duration of the treatment of patients who completed the treatment was of 23 months. The majority of patients (55.6%) has concluded the treatment with no significant adverse effects, 17.8% emigrated/were transferred, 10.0% passed away (one patient presented fatal toxicity), 8.9% are doing treatment and 5.6% abandoned/interrupted the treatment.
Conclusions: The data obtained are consistent with the literature regarding the main risk factors and comorbidities associated to tuberculosis. It is fundamental to diagnose and initiate the treatment precociously, mainly within the risk groups, as a way to prevent the emergence of resistances. Ensuring the adhesion to the treatment, through the directly observed therapy (DOT), is equally essential to obtain the control of this illness.

Keywords: *Resistant tuberculosis. Multi-resistant. Extensively resistant. Lisbon and Tagus valley.*

PC 035. LATENT TUBERCULOSIS SCREENING TESTS IN CANDIDATES TO BIOLOGICAL TREATMENT WITH INFLAMMATORY ARTICULAR DISEASE

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Introduction: An increase in the number of patients undergoing biological therapies in the treatment of inflammatory articular diseases as been noticed. Screening for latent tuberculosis (ILTB) is critical as for the increased likelihood of developing tuberculosis disease.
Objectives: To evaluate the possible interaction between the type of inflammatory articular disease (IAD), immunosuppressive therapy at the time of diagnosis of ITBL and the result of the IGRA test.
Methods: Retrospective study of patients with IAD referred to a Pneumological Diagnostic Center for ITBL screening between 2011-2019, who underwent preventive treatment and who simultaneously performed IGRA and TST tests. Data were collected by consulting the clinical file. A descriptive and comparative analysis of the patients was carried out according to the result of the diagnostic tests and immunosuppressive therapy. TST was considered positive if ≥ 5 mm.
Results: Of the 606 patients with IAD who underwent ITBL treatment after a positive screening between 2011-2019, 252 (41.6%) patients had positive TST and/or IGRA (excluding patients with only one test performed or 2 negative tests with another criteria for ITBL treatment). Of these 252 patients, 119 (47.2%) had IGRA and TST concordantly positive (IGRA+/TST+), 32 (12.7%) IGRA positive and negative TST (IGRA+/TST-) and 101 (40.1%) IGRA negative and positive TST (IGRA-/TST+). Due to the high percentage of this last subgroup that led to the ILTB treatment, a comparative analysis was performed with patients with IGRA+/TST+, in order to identify factors that might influence the outcome of the IGRA study. The subgroup of patients with IGRA-/TST+ had, compared to the IGRA+/TST+ group, younger age at the diagnosis of ITBL (48 vs 54 years; $p < 0.05$), less patients with a history of previous treatment of ITBL (7% vs 10%; $p = 0.42$) and higher percentage of BCG vaccination/vaccine scar (15.8% vs 6%; $p < 0.05$). The majority of patients in both groups were female (63% vs 61%), the pathologies most frequently seen were rheumatoid arthritis (43% vs 37%), psoriatic arthritis (27% vs 33%) and ankylosing spondylitis (29% vs 17%) ($p > 0.05$). Regarding the type of immunosuppressive therapy at the time of diagnosis of ITBL, when comparing the groups of patients IGRA-/TST+ with patients IGRA+/TST+, it was found that the first presented: more patients on Prednisolone < 7.5 mg/day and 0 to 1 disease-modifying antirheumatic drugs - DMARDs (64% vs 62%; $p > 0.05$); more patients on Prednisolone ≥ 7.5 mg/day and 0 to 1 DMARDs (13% vs 10%; $p > 0.05$); similar percentages of patients on Prednisolone < 7.5 mg/day and ≥ 2DMARDs (18% vs 17%; $p > 0.05$);

fewer patients on a higher dose of immunomodulating therapy, defined as Prednisolone ≥ 7.5 mg/day and ≥ 2DMARDs or Biological (5%vs11%; p = 0.12).
Conclusions: This study highlights the significant number of patients with IAD who undergo ILTB screening before initiation of biotechnological treatments, that carrying out both ILTB screening tests only test positive for TST, reinforcing the importance of performing TST in this risk group. Only a statistically significant association was observed between the BCG vaccination rate and the IGRA-/TST+ screening result. Immunomodulating therapy at the time of ILTB diagnosis and the type of AID did not appear to significantly influence IGRA results.

Keywords: *IGRA. Latent tuberculosis. Screening. TST. Inflammatory articular disease. Biotechnological therapies. Prednisolone.*

PC 036. LUNG BIOPSY AS A TRIGGER FOR TUBERCULOSIS REACTIVATION?

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Introduction: Tuberculosis is currently one of the top ten causes of death worldwide, being the main among infectious diseases. The human being works as a natural reservoir for M. tuberculosis and the inhalation of contaminated droplets, with consequent pulmonary deposition, leads to one of four possible outcomes: Immediate elimination, primary disease, latent infection or disease reactivation in a patient with latent infection. Immunosuppression is clearly associated with the latter.
Case report: We present the case of a 55-year-old male patient, sociologist, former active smoker, followed by an oncology consultation for gastro-oesophageal junction/distal esophagus´s adenocarcinoma, undergoing neoadjuvant chemotherapy and esophagectomy. During follow-up, and after CT-Chest description of irregular and ill-defined nodular area with spiculated outlines with ground glass pattern in the LSL with slight increase in dimensions; performed a PET that identified a hypermetabolic cavitated lesion in the apico-posterior segment of the LSL, suggestive of a secondary malignant lesion. The patient was admitted in the Pulmonology Service for lung biopsy of the referred nodule. Immediately after the procedure, the patient developed hypotension, hemoptoic sputum and fever peaks of 39.7 ºC. Chest radiography revealed a pneumothorax. The sputum culture identified a highly positive M. tuberculosis DNA with positive Ziehl-Neelsen staining for acid-resistant bacilli. After this diagnosis, the patient was placed in isolation and under anti-bacilli. The imposition of these measures resulted in a favorable clinical and analytical evolution. It should be noted that the anatomopathological examination of the pulmonary nodule did not identify neoplastic aspects, but on the other hand, it concluded the existence of pulmonary parenchyma with an area of necrosis and acute inflammatory process with focal observation of granuloma. Report that met our clinical findings and clinical pathology, supporting our diagnosis of pulmonary tuberculosis. When questioned, the patient denied respiratory or systemic symptoms prior to TTB or contacts with close people who had the disease.
Discussion: WHO has set as a goal, in low-incidence countries, the elimination of the disease in 2050. Objective whose fulfillment will be based on a quick diagnosis, the interruption of community transmission and the identification of susceptible individuals in need of treatment. Often these individuals are disguised in the community and present a latent infection that is difficult to detect, but which constitutes a threat to the WHO´s goals. However, it is not clear which factors specific to the host keep the infection in a latent state or which triggers reactivate the infection. But it is known that in reactivation the inflammatory process tends to be localized, with dissemination being rare, that the lesion typically occurs in the pulmonary apices, with the apico-posterior segments of the upper lobes frequently involved, that there is little ganglionic involvement and that there is less formation caseous granulomas. Features all of which are superimposed on our clinical case and whose uniqueness lies in the onset of the condition occurring only immediately after the TTB, in a patient with no previous history of pulmonary tuberculosis.

Keywords: *Reactivation. Tuberculosis. Lung biopsy.*

PC 037. NEPHROPATHY, HEMOLYTIC ANEMIA AND IMMUNE MEDIATED THROMBOCYTOPENIA SECONDARY TO RIFAMPICIN

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Introduction: Adverse reactions associated with rifampicin are mostly benign. Immunomediated reactions such as interstitial nephritis, hemolytic anemia and thrombocytopenia are uncommon and occur mainly associated with intermittent intake or reintroduction of the drug after a period of discontinuation.
Case report: Female, 54 years old, history of pulmonary and pleural tuberculosis treated 22 years ago, with reference to adverse reaction to rifampicin - flu-like syndrome. Followed by a pulmonologist for sequel bronchiectasis with multiple episodes of respiratory infection resolved with antibiotic therapy in the last two years. Isolation of Mycobacterium avium complex (MAC) in bronchoalveolar lavage of February 2020. Despite clinical stability, given the worsening of imaging, started a course with clarithromycin, ethambutol and rifampicin. Ten days after the start of therapy, fever, asthenia, nausea, vomiting, abdominal pain and oligoanuria started. No rash or other changes to the objective exam. Analytically, again, anemia (Hb 11.1 g/dL) and thrombocytopenia (115,000 platelets), with no evidence of eosinophilia, and AKIN 3 acute kidney injury (pU/pCr 77/2.87) associated with leukoerythrocyturia, proteinuria and eosinophiluria. Abdominal and renal ultrasound without major changes. Therapy for atypical mycobacteriosis was discontinued on admission. Hemodialysis was started on the second day of hospitalization due to progressive azotemia and persistent oligoanuria. Renal biopsy was performed the next day due to doubt of acute vs. interstitial nephritis. acute tubular nephritis in the context of an immune mediated reaction by rifampicin. From the remaining etiological study: positive Coombs test; negative schizocyte research; autoimmune study, protein immunoelectrophoresis, immunoglobulins and complement without relevant changes; HIV and negative liver virus serologies; PCR negative for Leptospira, CMV, Parvovirus B19 and Mycoplasma; EBV positive PCR (7,500 copies/mL). Evaluated by Infectious Diseases, who considered that the presence of a viral load of EBV in the blood did not necessarily imply the contribution of this virus in the current immunopathogenesis, having not started targeted therapy. Finally, the histological pattern of mesangioproliferative glumerolonephritis and tubuloinertistic nephritis is concluded. The diagnosis of interstitial nephritis, haemolytic anemia and thrombocytopenia were assumed to be mediated by rifampicin and prednisolone 1mg/kg/day was started. Resolution of thrombocytopenia and progressive improvement of diuresis, anemia (Hb 11.8 g/dL) and inflammatory parameters. Hemodialysis was discontinued, with an evolution to 2.03 serum creatinine after 15 days.
Discussion: In view of the isolation of MAC, the decision to initiate therapy should be considered and cautious, taking into account clinical and imaging criteria, as well as the previous history of adverse reactions to anti-bacillaries, which is not always easy to define and which can be distant. The initiation of therapy with rifam-

picin may be associated, sometimes in an unpredictable way, with the possibly severe immune-mediated response. When reintroducing the drug, the risk of an adverse reaction is not devaluable, and monitoring is desirable. After confirmation of an immune-mediated reaction to rifampicin, this drug should not be used again.

Keywords: *Rifampicin. Mycobacterium avium complex. Adverse reaction. Immune-mediated.*

PC 038. PULMONARY TUBERCULOSIS IN TIMES OF COVID-19: THE IMPACT OF THE PANDEMIC IN THE PULMONOLOGY DEPARTMENT OF CHUSJ

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Introduction: COVID-19 brought new challenges to health care, forcing a restructuring of them, with the creation of its own circuits and an increase in the availability of complementary diagnostic methods such as thoracic computed tomography (CT) in the emergency room (ER). The increased use of chest CT may allow, due to its greater sensitivity, the early diagnosis of respiratory pathology, namely pulmonary tuberculosis, even before the appearance of a characteristic clinic or translation on the chest X-ray.
Objectives: To evaluate the impact of using chest CT in the ER on the prevalence of suspected and diagnosed TB in patients admitted to the Pulmonology Service of the Centro Hospitalar e Universitário de São João (CHUSJ), in the context of the COVID-19 pandemic.
Methods: Retrospective study conducted at a central, tertiary and university hospital. Adult patients admitted to the Pulmonology department of CHUSJ with suspected PD in the period from March 1 to August 31, 2020 were included and a comparative analysis was carried out with the same period of 2018 and 2019.
Results: In the period from March to August 2020, 22 suspected TBs were admitted (mean age = 56 years, 18 men), of which 20 (90.9%) after performing chest CT in the ER. In the same period of 2018 and 2019, 11 (average age = 56 years, 9 men) and 7 (average age = 65 years, 5 men) individuals were suspected of having TB, of which 3 (27.3%) and 4 (57.1%) based on the result of chest CT in the ER, respectively. Of the total number of suspicions admitted in 2020, 9 (40.9%) were confirmed cases of tuberculosis and of these, 8 (88.8%) in the months of June to August, with only one of the confirmed cases not undergoing CT in the ER. In 2019, 5 (71.8%) of the suspicions were confirmed cases, in which 1 (20%) occurred between June and August 2019. Of the confirmed TBs, 2 (40%) had undergone CT in the SU and 3 (60%) were diagnosed before the CT was performed. As for 2018, 6 (54.5%) TBs were diagnosed with 1 case (16.7%) from June to August 2018, only 1 (16.7%) having CT in the ER and another 4 (66.7%) having been diagnosed before performing the CT.
Conclusions: Privileged access to chest CT in the ER led to an increase in the number of suspected unconfirmed TB cases admitted to the Pulmonology department from March to August 2020, compared to the same periods in the previous two years. There was no significant increase in the number of confirmed cases of TB in 2020, however most cases were diagnosed after the month of June, which can be explained by the period of confinement and less access to health care in the previous months.

Keywords: *COVID-19. Tuberculosis. Chest CT. Emergency room.*

PC 039. HPV IN A BASALOID SQUAMOUS CELL CARCINOMA – CASE REPORT

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Introduction: Pulmonary carcinoma keeps being the most common neoplasia worldwide and its incidence continues to increase, commonly related with tobacco, while other etiological factors are being looked after for understanding different tumoral outcomes, that raise controversy. Human Papillomavirus (HPV), a double-stranded circular DNA virus divided in two groups: high-risk HPV (e.g.: HPV 16, 18, 31, 33) and low-risk HPV (e.g.: 6, 11, 40), became important since 1989, after Syrjänen et al. reported for the first time the possible relationship between HPV and lung cancer; accordingly with 2014 WHO Classification, the linkage between HPV infection and lung cancer stays controversial and questionable and the possible mechanisms of pathogenesis are not completely interpreted.
Objectives: A particular case-report of a basaloid squamous cell carcinoma HPV-related from our files was selected to be presented, following cervical and oral HPV related carcinomas diagnosis strategy.
Methods: A long-dating smoking 73-years old man, presented with a left upper lobe probably neoplastic nodule and lobectomy was performed after frozen-section neoplastic validation. An irregular tumour presenting with largest diameter of 4 cm was observed, whitish and soft at cut sectioning, distant from visceral pleura and involving a peripheral bronchus.
Results: Histopathology: solid and anastomotic trabecular pattern was present due to relatively small monomorphic tumoral cells with moderately hyperchromatic nuclei. Immunostaining with p16 showed cytoplasmic and nuclear diffuse expression, beyond 50% Ki-67 and diffuse nuclear staining of p63 compared with lower expression of CK5.6; there was no expression of CD56, TTF1 and CK7; 22c3 DAKO PD-L1 demonstrated linear cytoplasmic membrane expression in over 50% of the tumoral cells.
Conclusions: Despite HPV infection is not yet globally accepted as an important etiologic factor for lung carcinomas, efforts have to be taken to better understand its role in pulmonary carcinogenesis, mainly in squamous cells carcinoma, followed by adenocarcinoma and also, some cases of neuroendocrine carcinomas have been reported to correlate with this etiology that might be harbouring better prognosis as determined for oral carcinoma HPV related.

Keywords: *Basaloid squamous cell carcinoma. HPV.*

PC 040. THORACIC EMPYEMA AS AN INITIAL FORM OF LUNG CANCER CLINICAL PRESENTATION: CASE REPORT

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Introduction: Thoracic empyema is defined as the presence of pus in the pleural space. Its incidence as an initial form of lung cancer is extremely low (lower than 0.3%) and, when present, can hinder the diagnosis.
Case report: 61-year-old, female, Caucasian, non-smoker. History of cervical cancer (pT2N0M0) submitted to hysterectomy 17 years ago. Denies usual medication. She went to the emergency room for abdominal pain and anorexia with six days of evolution. Vital signals at the admission: arterial pressure of 94/58 mmHg, heart rate of 130 bpm, filiform pulse, T 36.8 ºC, respiratory frequency 30 cpm and Glasgow Coma Scale 12. Lung auscultation with vesicular murmur absent on the left and abdomen diffusely painful on deep palpation. Analytically, leukocytosis 48,500/μl (86% N), creatinine 2.3 mg/dL and Reactive Protein C 480 mg/dL. Gasimetry (FiO2 21%) with pH 7.32, PaO2 70 mmHg, pCO2 26 mmHg, sO2 90%, lactates 2.4 mmol/L. Chest X-ray revealed an extensive left pleural effusion. For clarification, a thoraco-abdominal CT scan was performed, which confirmed not only the bulky effusion mentioned, with contralateral mediastinal deviation, but also an atelectasis of almost the whole left lung. The liver had nodules of unknown etiology. After the CT scan, chest drainage of 2,600 mL of purulent fluid was performed, confirming the presence of empyema and thus empirically initiated ceftriaxone 2 g, vancomycin 1 g, gentamicin 160 mg

and clindamycin 600 mg. The pleural fluid cytology revealed numerous inflammatory cells, predominantly neutrophils, non-malignant, and the bacteriological examination was positive for multisensitive Streptococcus intermedius. Bronchofibroscopy was performed, which confirmed the occlusion of the left upper lobar bronchus. In the distal portion of the left main bronchus, protrusion of the internal wall was observed due to probable extrinsic compression. Bronchial secretions cytology and biopsies were performed, both negative for neoplasia. Later, rigid bronchoscopy and bronchial biopsies were again performed. Due to the persistence of changes in neurological status, a Cranioencephalic MRI was performed, which revealed nodular lesion areas with heterogeneous signal uptake and perilesional edema, suggesting a secondary/metastatic character. The patient always maintained an absence of pulmonary expansion (incarcerated lung), despite functioning chest drains with purulent pleural fluid, and severe respiratory failure that required both an eleven-day initial Invasive Mechanical Ventilation (IMV) with extubation failure and a second four-day period of IMV. During the stay in the Intensive Care Unit (ICU) the evolution was difficult. As a result of prolonged immobilization and need for IMV, at the time of transfer to the hospital ward, the patient had generalized muscle atrophy and total dependence. Empyema resolution required a total of sixty-three days of drainage. On internment, a liver biopsy was performed which confirmed adenocarcinoma (CK7 +, CK20-, TTF-1 +), compatible with pulmonary origin, and the result of the second bronchial biopsies was a well-differentiated mild/intermediate PD-L1 adenocarcinoma (< 50%), without EGFR mutation.
Discussion: Given the delayed resolution of the infectious condition and inadequate performance status, related to the prolonged stay in the ICU, it was not possible to start early therapy for the neoplasia, which unfortunately inevitably worsened the prognosis.

***Keywords**: Empyema. Lung cancer. ICU.*

PC 041. HYPOPITUITARISM IN METASTATIC LUNG CANCER: REGARDING TWO CLINICAL CASES

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Introduction: Hypopituitarism can present with several clinical manifestations resulting from the deficit of one, several or all hormones produced in the pituitary gland (pan-hypopituitarism). The signs and symptoms are the same as for primary target organ failure, wich requires a differential diagnosis between the two conditions. When it is caused by a mass in the turcica sella, other changes can also occur such as visual loss, diplopia or headache, resulting from local compression or invasion.
Case reports: Case 1: A 66-year-old male patient with cT2N2M0 lung squamous cell carcinoma at diagnosis. Initially treated with chemotherapy (carboplatin and paclitaxcel) and radical radiotherapy, with good local response. He presented disease progression with brain and adrenal glands secondary lesions and retroperitoneal adenopathies, having undergone treatment with holocranial radiotherapy and second-line chemotherapy with docetaxel. He was later admitted for febrile neutropenia and analytically showed low TSH and free T3 with a normal T4, changes that were initially interpreted as a consequence of treatment with high-dose corticosteroid, and wich improved with the decreasing of the dose. He was readmitted 15 days later for worsening of general condition with asthenia, anorexia, prostration and dyspneia. Analytically low TSH, free T4 and T3 were evidenced with new hypernatremia in progressive worsening and the family reported abundant water intake. The hypothesis of central insipid diabetes was raised. He performed a brain MRI that reavealed new multiple secondary lesions including in the pituitary stem, without pituitary metastases. Central hypopituitarism was considered and treatment with desmopressin and thyroxine was initiated, maintaining corticosteroids and free water. From the rest of the pituitary study, hypogonadism and normal prolactin were observed. He presented resolution of hypernatremia and improved thyroid function, however without showing significant clinical improvement. Case 2: A 75-year-old male patient with a history of neck cancer, prostate adenocarcinoma and pulmonary adenocarcinoma in stage IIIB at diagnosis. He underwent treatment with radical chest radiotherapy concomitant with chemotherapy (carboplatin and vinorelbine). There was progression of the disease with bone and brain metastasis with "expansive lesion involving the pituitary sella". Palliative radiotherapy of the lumbar and cerebral spine and second line chemotherapy with pemetrexed have been proposed. He was admitted for dizziness, headache, polydipsia and hypotension. The study carried out showed central hypothyroidism, hypogonadism and probable adrenal insufficiency with normal serum prolactin and sodium levels (pituitary study was collected after starting corticosteroid therapy so the analytical results may have been affected) interpreted in the context of a hypo-pituitarism secondary to a metastatic seal injury. He started treatment with hydrocortisone and levothyroxine, showing analytical and symptomatic improvement.
Discussion: The frequent brain metastasis of the lung neoplasms during the natural history of the disease requires pulmonologists to have a strong diagnostic suspicion and a vast knowledge about the various clinical and analytical possible manifestations in view of the complications caused by these secondary lesions, intrinsically related to their location.

***Keywords**: Hypopituitarism. Lung cancer.*

PC 042. UNKNOWN SARCOMATOID CARCINOMA: CASE REPORT

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Introduction: Sarcomatoid carcinoma is a rare entity that belongs to the CPNPC group characterized by nonspecific presentation, frequent systemic metastasis at diagnosis and aggressive evolution. The diagnosis requires a correlation between clinical, histological and imaging data, and immunohistochemistry is the gold standard.
Case report: 63-year-old male patient, smoker. Resorted to the hospital due to decreased strenght and hypoaesthesia of the left lower limb, headache and progressive worsening of the dorsal-lombar pain. He performed a brain CT scan that revealed multiple expansive intra-axial lesions with vasogenic edema and toraco-abdominal CT that showed a 6mm nodular lesion irregularly contoured in the left upper lobe of the lung, three micronodules in the same lobe and a probable adenopathic conglomerate in the ipsilateral pulmonary hilum. Several hepatic and adrenal nodular lesions of probable secondary origin have also been found. He underwent bronchofibroscopy where irregular hypervascularized endobronchial neoplasia was observed in the upper division of the left upper lobar bronchus. Biopsy was performed and the bronchial aspirate revealed inflammation. The histology of the lesion described "carcinoma without an unusual phenotype in lung cancer" and immunohistochemistry revealed expression of MMF116, CK7, GATA3, CD138 and absence of TTF1, Napsina A, p40, Synaptophysin and SOX10, suggesting the hypothesis of metastatic etiology. PET-FDG detected catching lesions in the buttock muscles and diffuse bone metastasis, compatible with a high metabolic rate and the biopsy of a liver nodule was inconclusive. After discussion in the group consultation, treatment with holocranial radiotherapy was proposed, having completed 10 fractions with good tolerance and he was awaiting the decision on treatment with vinorelbine. About a month later he went to the hospital for epigastric pain, hematemesis and melena. He performed an endoscopy that revealed multiple ulcerated lesions with a crater-like appearance in the gastric mucosa, suggestive of metastases, and the patient died that day due to upper

gastrointestinal bleeding. The histological examination of gastric lesions was superimposed on the previous one, concluding that it was a sarcomatoid carcinoma.
Discussion: Neoplasms of unknown primary origin are tumors in which the malignancy is demonstrated by biopsy and the primary site is not identified after an exhaustive investigation. We present a rare case of sarcomatoid carcinoma that presented as a neurological deficit. The immunohistochemistry of a lung mass identified the histological type of tumor through the presence of cell line-markers characteristic of carcinomas. However, although several specific organ markers were tested, it was not possible to determine the primary origin of the tumor. Sarcomatoid carcinoma due to its low incidence, lacks of clinical and pathological characterization, represents a diagnostic challenge. We hope that advances in imaging, immunohistochemistry, genomics and proteomics will allow to reduce the time of diagnosis of these neoplasms in the future.

Keywords: *Sarcomatoid carcinoma.*

PC 043. ROLE OF RE-BIOPSY IN LUNG CANCER: A CASE REPORT

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Introduction: Re-biopsy is recommended in patients with lung cancer progression, allowing not only molecular characterization and search for molecular resistance to targeted therapies, but also to histologically recharacterization. The intratumor heterogeneity associated with small biopsy samples makes histological evaluation difficult.
Case report: A 62-year-old male, former smoker (36 pack-year), without risk exposure or relevant clinical history, presented with fever, myalgia and non-productive cough. The arterial blood gas analysis showed a type I respiratory failure. He has raised laboratory markers of inflammations. Chest radiography revealed right paramediastinal heterogeneous opacity. The nasopharyngeal exudate was positive for Influenza B. He completed 5 days of Oseltamivir and a course of Amoxicillin + Clavulanic Acid and Azithromycin with clinical an analytical improvement. He maintained radiological alterations, so computed tomography scan was performed and showed a right hilar mass extended into postero-inferior mediastinum (66 × 57 mm), without esophagus cleavage plane, associated with homolateral mediastinal adenopathies and extrathoracic secondary lesions in the liver and the dorsolumbar vertebral bodies (D12, L1 and L4). Cranioencephalic magnetic resonance had no secondary lesions. Flexible bronchoscopy revealed direct signs of neoplasia in the intermediate bronchus and bronchial biopsies were compatible with neuroendocrine carcinoma. In the multidisciplinary consultation it was decided to start palliative chemotherapy and bone radiotherapy, attending to T4N2M1c staging (Stage IVB) and Performance Status (PS) of 0. He completed 6 cycles of Platinum-based Doublet and Etoposide with disease progression. Re-biopsy was performed, maintaining a histological type. He started second line therapy with Topotecan, having completed 1 cycle with suspension because of grade 5 hematologic toxicity. Third-line Nivolumab and Ipilimumab combination was started, followed by Nivolumab in monotherapy maintenance, having completed 27 cycles. At this time the re-biopsy was performed with histological change to squamous cell carcinoma (PD-L1 < 1%, without driver gene mutations). In the multidisciplinary consultation it was decided to maintain Nivolumab due to slow progression until cycle 34, when he was hospitalized due to an Obstructive Pneumonia, with significant progression of the disease with occlusion of middle lobar bronchus. He performed a new re-biopsy with second histological change to Adenocarcinoma (PDL 1-5%, without driver gene mutations). He maintained a PS of 0, so he started Platinum-based Doublet with Pemetrexed, currently under maintenance with Pemetrexed. At the present date, the patient has an overall survival of 32 months and progression-free survival.
Discussion: Re-biopsy has an important role in the progression of patients since histological and molecular changes have relevant subsequent therapeutic implications.

Keywords: *Rebiopsy. Lung cancer.*

PC 044. MALIGNANT LESIONS, NON-MALIGNANT LESIONS - THE IMPORTANCE OF DIFFERENTIAL DIAGNOSIS!

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Introduction: It is not uncommon for situations in which non-malignant lung injuries are confused with malignant lung injuries, or vice-versa. This is a question asked whenever a pulmonary mass/condensation is seen on a chest imaging exam. This clinical case shows the importance of not restricting the diagnostic hypotheses and not focusing only on the radiological images, so important today, in our daily work.
Case report: 75-year-old female patient, non-smoker with a known history of ischemic heart disease, chronic kidney disease stage III, essential arterial hypertension and type 2 diabetes mellitus with poor metabolic control. She resorted to the Pulmonology consultation sent from the emergency department due to a 5.5 cm spiculated mass in the left upper lobe with extensive contact with the pleura and a 2 cm spiculated nodule in the right upper lobe reported on chest CT, having been discharged from the emergency department. with ciprofloxacin for an acute cystitis. Due to the high suspicion of lung cancer in a non-smoking patient but with high passive exposure to tobacco smoke, bronchofibroscopy and PET/CT were requested for diagnosis and staging. Bronchofibroscopy revealed no changes in the entire tracheobronchial tree and the anatomopathological results of bronchopulmonary lavage cytology, bronchial biopsy and lung biopsy were all negative for neoplastic cells. Following the diagnostic gait and after discussing images with the radiologist, a CT-guided transthoracic biopsy was requested, which was not performed due to a significant reduction in both pulmonary consolidations to about half the initial size, thus favoring the diagnosis of an infectious process. Considering that the patient underwent antibiotics at the time of the first CT in the context of an acute cystitis with radiological improvement, it was decided not to medicate and the diagnosis of community-acquired pneumonia was assumed.
Discussion: Whenever the possibility of lung cancer is at stake, several invasive and non-invasive methods are used to obtain the histological diagnosis, often too early. The biggest problem with false lung tumors is that most doctors focus their attention more on the radiological image than on the clinical findings of each patient, restricting and decreasing the diagnostic hypotheses of certain pathologies. Chest CT has an important role in the diagnosis of pulmonary pathology including lung cancer, but the clinic of each patient at the time of its performance is central to a better diagnostic and therapeutic approach for each individual.

Keywords: *Pneumonia. Lung cancer. Radiology.*

PC 045. ACUTE CERVICAL PAIN RADIATING TO THE LEFT ARM: WHAT IS THE DIAGNOSIS?

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Introduction: Large cell neuroendocrine carcinomas may be poorly symptomatic. Not infrequently, patients present only with changes in chest radiography or computed tomography (CT).

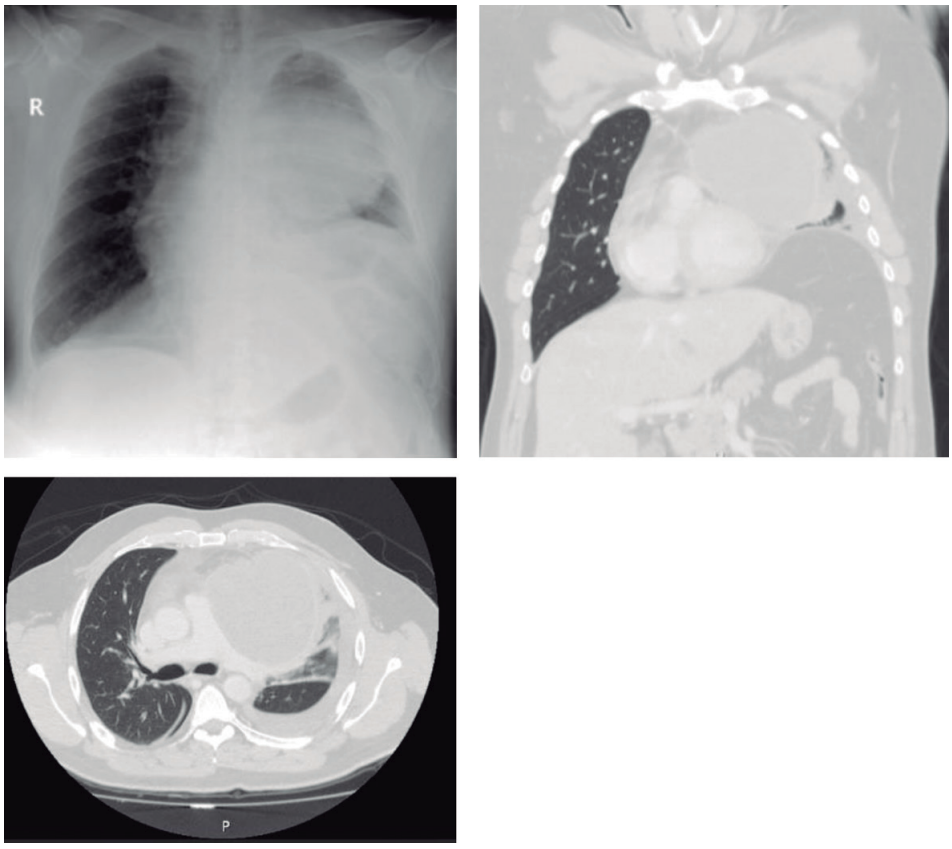

Figure PC 045

Case report: The authors report the case of a 57-year-old patient, previously healthy, ex-smoker, pianist, who goes to the emergency department after the onset of excruciating neck pain refractory to analgesic therapy. The pain radiated to the left upper limb and had persisted for four hours. He also referred homolateral paresthesias, and later, the appearance of chest pain. He denied nausea, vomiting, fever, palpitations or syncope. An ECG was performed and serial assessment of cardiac enzyme excluded acute coronary syndrome. He was referred to Orthopedics, who requested CT of the cervical spine where the existence of unco-spondyl discarthrosis at the C5/C6 and C6/C7 levels was documented, highlighting potential repercussions on the corresponding cervical root axes. He was discharged with reinforcement of analgesia, however after four hours the patient returned to the Emergency Department due to chest pain in the left hemithorax, with different characteristics from the previous pain.
In addition to the repetition of the cardiac study, a chest X-ray was performed, where a paratracheal massive mass, was observed in the left upper lobe. He was then submitted to a chest CT scan that documented an upper anterior mediastinal lesion of about 11x9 cm, deviating the mediastinum to the right side. He was hospitalized for investigation: the anatomopathological study of biopsies guided by CT raised the hypothesis of an atypical carcinoid. This diagnosis was not confirmed by anatomopathological reassessment of the surgical piece of left upper lobectomy and tumor resection, which proved it to be a large cell neuroendocrine carcinoma.
Discussion: This clinical case emphasizes the frustrating symptomatology caused by a mass larger than 10 cm, since the patient did not present any complaints until a few hours before the first visit to the emergency room. It should also be noted, similarly to what is described in the literature, the difficulty of the anatomopathological diagnosis of these tumors, which constitute only 3% of the total of malignant lung lesions and whose initial evaluation suggested that it was an atypical carcinoid, with prognosis and treatment quite different from large cell neuroendocrine carcinoma.

Keywords: *Large cell neuroendocrine carcinoma. Large mass.*

PC 046. A CASE OF MESOTHELIOMA AND DIAGNOSTIC DIFFICULTIES

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Introduction: Sarcomatoid neoplasms of the lung and pleura are rare tumors that present a complex differential diagnosis, making them a challenge for the anatomopathologist. The radiological and clinical correlation is essential since these poorly differentiated tumors may not express the usual immunohistochemical markers for carcinoma or mesothelioma.
Case report: We report the case of a 77-year-old non-smoker, retired computer engineer, without any exposure to asbestos. He reported dyspnoea at rest, asthenia, dry cough and constant chest pain. He denied fever or night sweats but reported losing 10 kg in the last month. Chest radiography on admission revealed a large left pleural effusion and the arterial blood gas analysis and blood tests did not show any relevant changes. He was hospitalized for investigation, which results in a thoraco-abdominal-pelvic CT scan showing pleural nodular thickening (maximum 5 cm) and a large pleural effusion causing collapse of the ipsilateral lung. Diagnostic and evacuating thoracentesis and pleural biopsies were then performed, but despite the drainage of 1,900 mL of brownish sero-hematic fluid, two days later an ipsilateral chest drain had to be placed due to the persistence of a large effusion. The analysis of this liquid revealed an exudate with a predominance of lymphocytes, with ADA of 37U/L, and the bacteriological and mycobacteriological examination were negative, as well as the PCR for DNA testing of M. tuberculosis in the liquid and

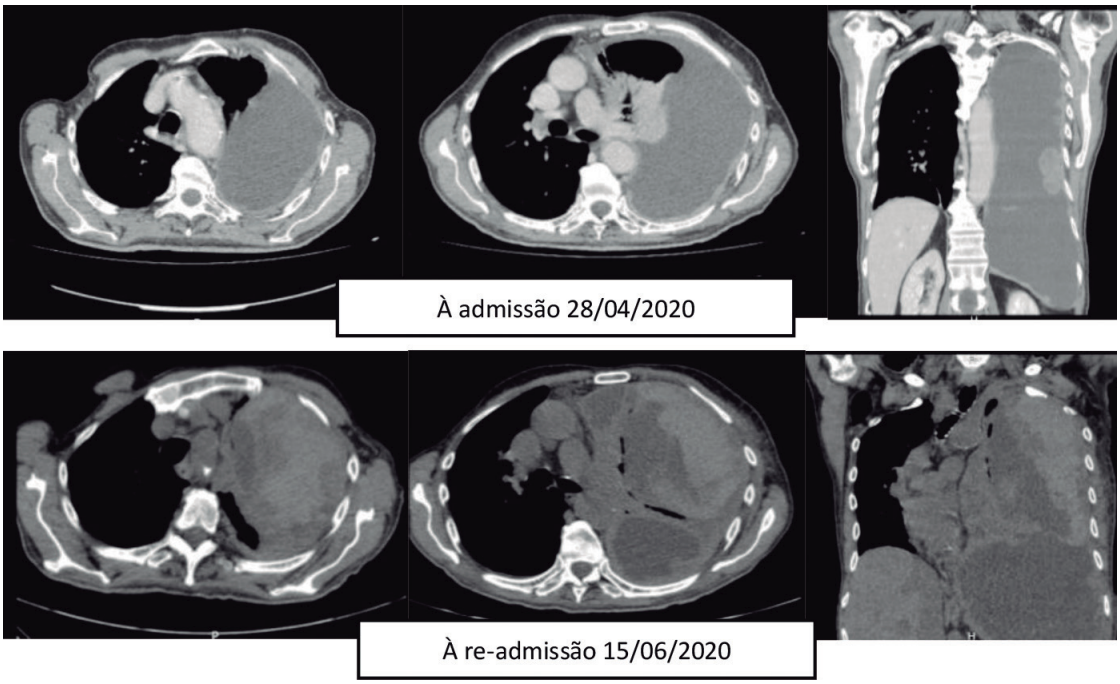

Figure PC 046

expectoration (scarce). Pleural biopsies revealed a chronic granulomatous inflammatory process, without atypical cells. He was then referred for a transthoracic biopsy guided by CT of one of the pleural nodules/thickening. Due to clinical improvement chest drainage was removed and he waited for the anatomopathological result at home. Due to a new clinical worsening, he was admitted to the hospital about two weeks later. At that time, the results of the last pleural biopsies were known: a necrotizing granulomatous process. The readmission thoracic ultrasound showed a massive, frankly loculated effusion, of heterogeneous hypoechoic content, and a thoracic tomographic reassessment is then requested, which showed an increase in the effusion and changes in the density of the liquid content, compatible with a probable hemothorax, and the collaboration of Thoracic surgery. In the first stage, exploratory mini-thoracotomy was performed and in a second stage (less than 24 hours later), pulmonary decortication was executed. In both approaches, liquid and material were sent for better histological characterization and neoplastic cells from a fusocellular and epithelioid malignancy were detected. The hypotheses of pulmonary sarcomatoid carcinoma with pleural invasion versus sarcomatoid/biphasic mesothelioma with invasion of the underlying lung parenchyma were raised.

Discussion: In this case, due to the imaging findings, it seems to us that it is more likely to be a sarcomatoid mesothelioma or biphasic mesothelioma, both with a very poor prognosis. Mesotheliomas typically present with pleural thickening and only rarely invade/destroy the chest wall unlike what happens with pleomorphic carcinomas that in addition present with intrapulmonary masses, which was not the case for our patient.

Keywords: *Metothelioma. Pleural effusion.*

PC 047. PRIMARY HYPOALDOSTERONISM ASSOCIATED WITH PEMBROLIZUMAB THERAPY

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Introduction: Treatment with immunological checkpoint inhibitors, such as pembrolizumab (PD-1 inhibitor), is associated with improved prognosis for several solid tumors, such as non-small cell lung cancer (NSCLC). However, these drugs are also associated with immunomediated side effects with significant clinical impact and which can be difficult to diagnose and treat. Among these, the most frequent are endocrinopathies such as thyroid pathology, hypopituitarism, type 1 diabetes and adrenal insufficiency. The latter can be serious and is often underdiagnosed and undertreated.

Case report: We present the case of a 52-year-old woman, exsmoker, diagnosed with stage IIIA lung-cell carcinoma (T2a N2 M0), strong positive PDL1, in October 2018, having undergone chemotherapy and radiation therapy concurrently. In April 2019 there was progression with a single brain metastasis and she was submitted to radiosurgery. In May diagnosis of liver metastasis. She started therapy with pembrolizumab in August of the same year. Hypothyroidism was diagnosed 2 months after starting therapy, having started targeted therapy. Between December 2019 and March 2020, several episodes of hospitalization due to fatigue, anorexia, orthostatic hypotension and changes in the state of consciousness. In all episodes, she had severe hyponatremia and hyperkalaemia in the blood tests. Pembrolizumab therapy was suspended in February 2020 due to disease progression. She was admitted again in April 2020, with the same symptomatic and analytical picture with hyponatremia 110 mmol/L and hyperkalaemia of 8.1 mmol/L. The study carried out highlighted a slight worsening of renal function, normal thyroid function, morning cortisol 0.2 ug/dL (6.2-18) in 2 measurements, ACTH 3.0 pg/mL (7.2-63.3), aldosterone < 1.9 (1.7-23.2) and renin 622 (2.8-39.9). Abdominal ultrasound without evidence of lesions in the adrenals. In this context, primary adrenal insufficiency associated with pembrolizumab therapy was admitted. It was started therapy with fludrocortisone and hydrocortisone with improvement of ionic changes. The patient ended up dying on the 45th day of hospitalization due to the progression of the underlying disease.

Discussion: Adrenal insufficiency secondary to immunotherapy is rare, with few cases reported in the literature so far. However, due to its potentially fatal impact, the degree of clinical suspicion and treatment is critical. The time of development of the condition is not clearly defined, and may occur in the first months of therapy, with reports of diagnosis several years after the beginning of treatment.

Keywords: *Primary hypoaldesteronism. Pembrolizumab.*

PC 048. PRIMARY PULMONARY T LYMPHOMA – A RARE AND AGGRESSIVE ENTITY

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Introduction: Primary pulmonary lymphomas constitute a group of malignant, rare entities, representing less than 1% of all lymphomas and less than 0.5% of all primary lung cancers. Most cases of primary pulmonary lymphoma are B cell lymphomas associated with the bronchial mucosa lymphatic tissue (MALT/BALT lymphomas). In contrast, primary T lymphomas of the lung are extremely rare, being limited to a few case reports on medical literature. Thus, their clinical and radiological characteristics, as well as their treatment, are not well established.
Case report: We present the case of a 43-year-old woman that went to the emergency department with fever, productive cough and exertional dyspnea with 3 weeks of evolution. The chest CT revealed multiple bilateral consolidation foci, some showing nodularity and air bronchogram, associated with extensive areas in ground glass, with diffuse distribution in the lower thirds, with areas of mosaic pattern. Antibiotics and corticosteroids were initiated due to the clinical suspicion of interstitial pneumonia. However, due to the maintenance of symptoms and images on a subsequent chest CT, a CT-guided transthoracic aspiration biopsy was performed revealing a peripheral cytotoxic T cell lymphoma associated with EBV infection. There was a rapid clinical e radiological deterioration and the patient was transferred to a Hematology service, passing away two days later.
Discussion: Despite rare, T cell lymphomas present an aggressive behavior and must be considered on the differential diagnosis of febrile patients with multiple pulmonary nodules that do not respond to antibiotics, since timely diagnosis and early treatment are essential.

Keywords: *Primary pulmonary lymphoma. T cell lymphoma. Pulmonary nodules.*

PC 049. RESPIRATORY SYMPTOMS IN HEALTH CARE PROFESSIONALS INFECTED WITH SARS-COV-2 – REPORTED CASES FROM 5 MONTHS OF OCCUPATIONAL HEALTH SERVICE AT A UNIVERSITY HOSPITAL CENTER

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Introduction: COVID-19, caused by SARS-CoV-2, was recognized as a pandemic by WHO on March 11, 2020. Although the infection was identified in a high percentage of asymptomatic patients, a case of SARS-CoV-2 infection should be suspected in the presence of symptoms such fever, irritating dry cough and/or dyspnea. Healthcare professionals, due to their frequent contact with infected individuals, are among the main risk groups for COVID-19.
Objectives: Compare the proportion of professionals with suggestive symptoms of COVID-19, namely respiratory, who tested positive for SARS CoV-2, with a proportion of asymptomatic people with high-risk contact who tested positive. Identify the respiratory symptoms of professionals suspected of having COVID-19 and the proportion of those who tested positive for SARS-CoV-2 in the sample studied.
Methods: Retrospective study, with analysis of the clinical records of health professionals who went by self-initiative to the Occupational Health Service of a University Hospital Center, between March and August 2020, for presenting symptoms, risk contact with a confirmed case of COVID-19, or by both and, who in this context, performed the RT PCR SARS-CoV-2 test. Cough, dyspnea, odynophagia, nasal congestion, rhinorrhea and sneezing were considered respiratory symptoms. Professionals evaluated in the context of clusters or hospital outbreaks that occurred in the same period were excluded from the sample.
Results: 613 professionals were evaluated, mostly female (81.6%) and aged 25-34 years. The sample included more Doctors (32%), followed by Nurses (29%) and Medical Auxiliaries (22%). Of the 420 (68.5%) symptomatic professionals (respiratory or others), in 27 COVID-19 (6.43%) was confirmed, while only 3 of the 193 (1.55%) asymptomatic professionals being positive, with the difference being statistically significant (95%CI, p = 0.009). In turn, of the 371 (88.3%) who had respiratory symptoms, 19 were positive for COVID-19 (5.12%), versus 11 among the 242 who had no respiratory symptoms (4.55%), not being difference statistically significant (95% CI; p = 0.75). The most prevalent respiratory symptoms in the sample were cough (236 cases, with 5.93% being positive); odynophagia (180 cases, 1.77% positive) and rhinorrhea (78 cases, 8.97% positive). It should be noted that, of the 44 professionals who presented dyspnea, none tested positive for SARS-CoV-2.
Conclusions: Although COVID-19 is typically associated with respiratory symptoms, not all these symptoms were predictive of disease, probably due to other respiratory diseases, infectious or not. Cough was a symptom frequently observed in the sample, but only 5.93% was diagnosed with COVID-19. Rhinorrhea was the respiratory symptom with the highest proportion of positive cases (8.97%). However, there was no positive case with dyspnea. However, the positive cases found in our sample were all mild to moderate in severity, with treatment at home. Non-respiratory symptoms characterized about half of the cases of illness. In view of the variability of symptoms, and given the risk of transmission to vulnerable patients, it is important to value mild symptoms in health professionals. The identification of the disease in asymptomatic patients, although inferior to the symptomatic ones, reinforces the importance of strict adoption of hygiene and respiratory protection measures.

Keywords: *COVID-19. Health care professionals. Respiratory symptoms.*

PC 050. CO-INFECTION BIOMARKERS IN COVID-19: WHAT IS THE ROLE OF PROCALCITONIN IN SEVERE DISEASE?

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Introduction: Several biomarkers have been used in stratification and identification of co-infection in patients with pneumonia due to the new severe acute respiratory syndrome coronavirus (SARS-CoV-2). The scarcity of studies regarding the role of biomarkers in this new form of pneumonia led to an indiscriminate use of antibiotics. Previously to coronavirus 19 disease (COVID 19) procalcitonin (PCT) was used to differentiate systemic inflammation of bacterial origin from viral origin in community acquired pneumonia and sepsis, with a significant rise indicating bacterial infection.
Objectives: Access the role of PCT, compared to other biomarkers, in the identification of co-infection in patient with pneumonia due to SARS-CoV-2.
Methods: We performed a retrospective analysis of all patients with primary diagnose of pneumonia due to SARS-CoV-2 admitted to intensive care unit of our centre between March and June of 2020. In all patients microbiologic samples were collected at admittance and when there was medical indication. In both periods leukocytes, protein c reactive (PCR), PCT and ferritin were also evaluated. Patients were included in 2 groups according isolation, or not, of microbiologic agents in collected samples. The total values as well as

the variation of the biomarkers were compared using IBM SPSS statistics 25 software. Results are presented as median [interquartile range].
Results: We included 116 patients. In 50 (43%) a microbiologic agent was isolated (39 bacterial; 7 fungal and bacterial; 3 fungal and 1 fungal and viral) (78%; 14%; 6% e 2% respectively). In total 103 patients (88.3%) performed antibiotic treatment. In the group with microbiologic agent isolation de median leukocytes, PCR, PCT and ferritin were, at the moment of isolation, 12,850 μL [8,400]; 224 mg/L [135]; 1.15 ng/mL [4.19] and 1,076 ng/mL [1,919] respectively. In the group with no microbiologic agent isolated the values were, when co-infection was suspected and antibiotic started, leukocytes 11,170 μL [7,290]; PCR 207 mg/L [150]; PCT 0.30 ng/mL [135] and ferritin 1,145 ng/mL [2,279]. Just PCT was different between both groups (p = 0.01). The first group had a leukocytes, PCR, PCT and ferritin variation of 4,630 μL [46,620]; 72 mg/L [586]; 0.53 ng/mL [113.15]; 248 ng/mL [26,976] and in the second group 3,450 μL [20,420]; 63.5 mg/L [384]; 0.15 ng/mL [34.73] and 237 ng/mL [12,929] respectively.
Conclusions: In this study procalcitonin was the only biomarker that revealed difference between the group with confirmed co-infection and the group without isolation of a microbiological agent. A procalcitonin variation superior to 0.50 ng/mL seems to indicate co-infection. In the group without confirmed infection all biomarkers showed values markedly above reference when antibiotics were started. Therefore, we suggest that raised biomarkers observed in COVID-19 could be due either to co-infection or as a direct marker of a more severe or widespread SARS-CoV-2 infection. PCT seems to be the most useful biomarker to distinguish them and to help antibiotic strategy.

Keywords: *COVID-19. Procalcitonin. Co-infection.*

PC 051. HEMATOLOGIC PARAMETERS AND ADMISSION TO NA INTENSIVE CARE UNIT IN PATIENT INFECTED WITH SARS-COV-2

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Unidade Local de Saúde da Guarda, EPE.

Introduction: The current pandemic infection disease, caused by novel coronavirus (SARS-CoV-2), has prominent hematologic manifestations. Several studies suggest that the absolute count of lymphocytes, platelets and neutrophil-lymphocyte ratio are indicators that reflect the inflammation control in many diseases.
Objectives: Compare the admission of lymphocytes count, platelets count, neutrophil-lymphocyte ratio (NLR) and platelets-lymphocyte ratio (PLR) of patients admitted in the Intensive Care Unit (ICU) with the other hospitalized patient infected by SARS-CoV2. Evaluate the predictive value of these indicators for admission in the UCI.
Methods: Retrospective study that includes adults infected by SARS-CoV2 and hospitalized from March to July of 2020. The diagnose criteria includes the detection of virus RNA in naso/oropharyngeal exudate with real-time reverse transcription-polymerase chain reaction (RT-PCR) technique. The demographic, clinical and hematologic counts variables were obtained through the review of clinical processes. To compare the difference of variables between the two groups the Mann-Whitney test was used. To analyze the ability of hematologic counts to predict the need for ICU admission, Multinomial Logistic Regression and Receiver Operating Characteristic (ROC) curve were applicated.
Results: We identified 120 patients infected by SARS-CoV-2, median age of 65.5 [19-99] years old, 68 (56.7%) females. At admission, 43 (35.8%) patients presented hematologic alterations, 16 (13.3%) lymphopenia, 14 (11.7%) thrombocytopenia and 13 (10.8%) both. In total, 9 (7.5%) patients were admitted in the ICU. Between the group admitted in the ICU and the group hospitalized in common nursery there are no significant statistical differences in age, Charlson Index, platelets count and PLR. There is a significant difference between lymphocytes count and NLR. The patients admitted in ICU had the lowest count of lymphocytes (median 0.95 [0.54-1.56] × 10^3/uL vs 1.47 [0.24-4.45] × 10^3/uL; p-value 0.005) and higher NLR (median 6.50 [1.64-9.36] vs 2.91 [0.35-35.04]; p-value 0.02). Nevertheless, lymphocytes count was the only one that predicted the need for ICU admission. The probability of ICU admission relative to not admitted decrease by 83.5% for each 1 × 10^3/uL increase in lymphocyte count (p-value 0.022). The best cut-off was 1.08 × 10^3/uL with 66.7% of sensitivity and 72.1% of specificity (AUC 0.76; p-value 0.011).
Conclusions: The admission lymphocyte count of patients infected by SARS-CoV-2 and admitted in ICU seems to be lower compared to other hospitalized patients, being its value the predictive of admission in ICU. Due to its low costs and reproducibility, it may acquire clinic value in the identification of critical patients.

Keywords: *SARS-CoV-2. COVID-19.*

PC 052. SARS-COV2 ANALYTICAL CHANGES: 6 MONTH SERIES IN A LEVEL II HOSPITAL

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Hospital Garcia de Orta.

Introduction: COVID-19 is a disease caused by the new coronavirus (SARS-CoV2) that started in late 2019 in Wuhan (China) and is currently considered a pandemic. In view of the growing interest in this pathology, the most common analytical changes have been studied. According to the literature, the most prevalent are lymphopenia, elevation of LDH (Lactate Dehydrogenase), changes in coagulation and elevation of inflammatory parameters (Ferritin, C-Reactive Protein and Erythrocyte Sedimentation Rate).
Objectives: Description of the analytical changes of patients admitted to a Pulmonology Service of a level II hospital, dedicated to patients with SARS-CoV2 infection between March and August/2020.
Methods: Retrospective analysis of clinical processes. Analytical data were collected and three groups were defined based on the pO2/FiO2 ratio obtained from arterial blood gas: Group A (pO2/FiO2 ratio > 300), Group B (between 200-300) and Group C (< 200). The infection was confirmed by RT-PCR research of SARS-CoV2 RNA in the respiratory secretions.
Results: During the study period, there were a total of 180 patients, with 52% in group A (GA), 26% in group B (GB) and 22% in group C (GC). Neutrophilia (defined as > 7,700 cells/mL) was present in 30, 36 and 64% of patients in group A, B and C, respectively. About 52 (GA), 64 (GB) and 77% (GC) of the patients had lymphopenia (< 1,000 cells/mL). Erythrocyte Sedimentation Rate > 100 mm in first hour appeared in 48 (GA), 62 (GB) and 75% (GC) of patients. LDH > 350 mg/mL was present in 42 (GA), 61 (GB) and 72% (GC) of patients. Values of C-Reactive Protein > 5 mg/dL appeared in 60 (GA) to 78 (GB) and 95% (GC). Procalcitonin > 1 ng/mL was found in 21 (GA), 24 (GB) and 42% (GC) of patients. Ferritin > 200 ng/mL appears in 87 (GA), 92 (GB) and 97% (GC) of patients. Analyzing the triglycerides, they are > 150 mg/dL in 50, 69 and 66% of the patients (group A, B and C respectively). D-Dimers are elevated (> 500 ug/mL) in 27 (GA), 42 (GB) and 53% (GC) of patients. Fibrinogen > 100 mg/dL is increased in 100% of patients in the three groups.
Conclusions: Similar to what is described in the literature, the prevalence of the variables analyzed in this study increases according to the severity of the disease, in this case defined by the severity of hypoxemia calculated by pO2/FiO2 ratio.

Keywords: *SARS-CoV2. COVID-19. Pneumonia. Blood analysis.*

PC 053. THE ROLE OF NONINVASIVE VENTILATION AND CPAP IN COVID-19 – OUR HOSPITAL EXPERIENCE

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Introduction: Patients with SARS-Cov2 infection present with respiratory failure in a minority of cases. Although initially questionable, the role of noninvasive ventilation (NIV) and CPAP in such situations is now recognized as a way to prevent invasive mechanic ventilation (IMV), ease its weaning and improve the approach to patients without indication to IMV.
Objectives: Present our hospital experience regarding the use of NIV and CPAP in patients with COVID-19 associated respiratory failure.
Methods: Retrospective study of patients hospitalized with diagnosis of SARS-CoV2 infection that underwent NIV or CPAP in Hospital Beatriz Ângelo, between March and June 2020. Data concerning demographic aspects, comorbidities, presentation, ventilatory support and clinical outcomes were collected and statistically analyzed.
Results: In this period, 167 patients were hospitalized with diagnosis of SARS-CoV2 infection, and 19 (11.4%) needed NIV or CPAP. In 7 patients (36.8%), NIV was defined as ceiling of ventilatory care. In this group, most patients were male (71.4%), mean age was 73 ± 12.7 years old and a median Barthel index of 10 was calculated. The most frequent comorbidities were arterial hypertension (71.4%), type 2 diabetes (57.1%), cerebrovascular disease (57.1%), dyslipidemia (42.9%) and chronic obstructive pulmonary disease (28.6%). 85.7% (n = 6) presented with radiological evidence of pneumonia and all of them presented with respiratory failure, classified as type I in 71.4% (n = 5) and type II in 28.6% (n = 2). Mean PO2/FiO2 ratio at admission was 213 ± 61. 5 patients underwent Bilevel Positive Pressure Airway (BiPAP) and 2 CPAP. Mean NIV/CPAP duration was 5.6 ± 4.8 days. Mean lenght of stay was 22 ± 21.7 days and mortality rate was 28.4% (n = 2). In the group of patients with indication to IMV (63.2%; n = 2), the majority were female (58.3%), mean age was 64.75 ± 10.8 years old and median Barthel index was 100. The most frequent comorbidities were arterial hypertension (75%), dyslipidemia (33.3%), type 2 diabetes (25%) and cerebrovascular disease (25%). Pneumonia was documented in 83.3% of cases (n = 10) and all of them presented with type I respiratory failure. Mean PO2/FiO2 ratio at admission was 249.3 ± 78.8. Half of patients (n = 6) underwent NIV/CPAP trial (5 of these with CPAP), with 2 of them developing the need for IMV in the first 24h. In the other 4, noninvasive support was sufficient, with mean duration of 6.4 ± 4 days. In the other half (n = 6), NIV/CPAP was used in the weaning of IMV (5 of these with BiPAP), with mean IMV duration of 14.6 ± 10.5 days and mean NIV/CPAP duration of 8.6 ± 3.2 days. Mean lenght of stay was 32.8 ± 18.1 days and no deaths were documented.
Conclusions: Despite the initial controversy, NIV/CPAP appears to have an important role in the approach to patients with COVID-19 associated respiratory failure, even in those who are older, more dependent and with more associated comorbidities. The action of an experienced and multidisciplinary team is undoubtedly determinant to the success of these interventions. More studies are warranted to better understand the indication and benefits of NIV/CPAP in COVID-19.

Keywords: *COVID-19. Non-invasive ventilation.*

PC 054. A RARE CASE OF SARS-COV2 AND PNEUMOCYSTIS JIROVECII CO-INFECTION

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Hospital Garcia de Orta.

Introduction: SARS-CoV2 (COVID-19) infection was declared a pandemic in March 2020, with a major impact on health worldwide. Although a possibility of bacterial co-infection is available, there are some cases in the literature on fungal co-infection. Pneumocystosis is a potentially fatal disease that occurs mainly in immunocompromised patients.
Case report: The authors present the case of a 67-year-old man with a history of rheumatoid arthritis (under methotrexate 20 mg/week, prednisolone 5 mg/day and leflunomide 20 mg/day) and arterial hypertension. Admitted to the Emergency Department in May/2020 for mucoid productive cough, fever and dyspnea with 4 days onset. At admission, tachycardia 108bpm was present, and also peripheral saturation of 96% in ambient air and rest, with desaturation to 90% after 50 meters of walking, tachypnea (FR 24 cpm) at rest, apyrexia. On pulmonary auscultation, decreased breath sounds on the right base with bibasal crackles. The chest X-ray showed heterogeneous hypotransparencies bilaterally. Analytically with leukocytes 8600, relative neutrophilia 95%, lymphopenia 210 cells/ml, D-dimers 29.44 mg/ml, LDH 458 mg/dL and C-reactive protein 12.26 mg/dL and mild hypoxemia (pO2 70) without hyperlactacidemia on arterial blood gas. Performed a SARS-CoV2 RNA RT-PCR research on secretions from the oropharynx and nasopharynx that were positive. Upon suspicion of pulmonary thromboembolism, AngioCT-Chest was performed, which revealed peripheral ground-glass opacities with bilateral "crazy paving" with condensation and thromboembolism in the segmental branches of the right upper lobe. Thus, he was admitted for pneumonia by SARS-CoV2 and pulmonary thromboembolism (PESI 77 points), having started non-invasive mechanical ventilation in CPAP mode with Helmet due to worsening hypoxemia and enoxaparin in therapeutic dose. In D2, due to clinical and analytical improvement, non-invasive ventilation was suspended, with progressive weaning from oxygen therapy. CT-Chest was repeated on D7 with imaging improvement. He was discharged at D15, asymptomatic, with maintained apyrexia (> 72h), peripheral saturation of 97%. 7 days after the discharge date, he is again observed in the emergency department for dry cough, high fever and asthenia for small efforts. It was hypoxic (Saturation 90% with FiO2 21%). Imagiologically with the same changes on chest X-ray and analytically without elevation of inflammatory parameters, still having a positive RT-PCR SARS-CoV2 test. He was re-admitted suspecting a SARS-CoV2 pneumonia co-infection to be clarified. From the complementary assessment, cultural and serological tests did not isolate an agent, so bronchofibroscopy was performed with bronchoalveolar lavage. Pneumocystis jirovecii was isolated using the immunofluorescence technique, having started Cotrimoxazole. On D15 of therapy, due to acute kidney injury, she started Clindamycin + Primaquine, which she completed for 6 days. He was discharged at D25, under Dapsone therapy.
Discussion: The authors intend to draw attention to a rare case of SARS-CoV2 and Pneumocystis jirovecii co-infection which, due to the similar clinical presentation, make its diagnosis and identification a challenge. It is intended to remember that fungal co-infection is frequent in immunocompromised patients, especially when they have also an increase in LDH and maintained fever.

Keywords: *Pneumonia SARS-CoV2. COVID-19. Pneumocystosis.*

PC 055. THE WEIGHT OF OBESITY IN COVID-19 PATIENTS

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Introduction and objectives: Obesity in an inflammatory condition that affects immune response. Recent studies show that obese patients are more likely to develop COVID-19, more contagious and have longer viral replication period. Disease severity and hospitalization appear to be directly associated with body mass index (BMI) increase. This may be justified by several factors, such as the mechanic alteration obese patients have or the role obesity has as a

risk factor for diabetes, respiratory and cardiovascular disease, which are known to relate to higher morbimortality. Our goal is to assess to role of obesity in severity and mortality of hospitalized patients with diagnosis of SARS-CoV2 infection in our hospital.
Methods: Retrospective study of hospitalized patients with diagnosis of SARS-CoV2 infection in Hospital Beatriz Ângelo, between March and June 2020. Patients were divided into two groups according to their BMI: non-obese (BMI < 30 kg/m^2) and obese (BMI ≥ 30 kg/m^2). Data were collected and frequency analysis was performed to compare mortality, intensive care unit (ICU) admission, noninvasive ventilation (NIV), invasive mechanic ventilation (IMV) and complication rate. Linear regression analysis was carried out to understand the relation of BMI and global length of stay, ICU length of stay and duration of NIV and IMV.
Results: Of the 164 patients analyzed, 52.4% (n = 86) were male and 47.6% (n = 78) female. Age ranged from 26 and 99 years old, with a calculated median age of 71 years old. 20.7% of patients (n = 34) had BMI ≥ 30 kg/m^2, with 14.6% of them (n = 24) having class 1 obesity, 5.5% (n = 9) class 2 and 0.6% (n = 1) morbid obesity. 44.5% (n = 73) were overweight and 34.7% (n = 57) had BMI < 25 kg/m^2. ICU admission was observed in 18.5% (n = 24) of the non-obese patients, vs 20.6% (n = 7) of the obese patients, with a total of 31 admissions (18.9%). 10.8% (n = 14) of non-obese patients underwent NIV, vs 11.8% (n = 4) of obese patients. 38.9% (n = 7) of patients under NIV developed the need for IMV, with only 1 obese patient in this situation. The need for IMV was observed in 10% (n = 13) of the non-obese patients, vs 11.8% (n = 4) of the obese patients. Mortality rate was 16.2% (n = 21) in the non-obese group, vs 20.6% (n = 7) in the obese group. No differences were noticed in global complication rate (12.3% in the non-obese group vs 11.8% in the obese group). Linear regression analysis showed that BMI increase was inversely related com global length of stay (p = 0.007). No statistically significant relation was observed between BMI increase and ICU length of stay (p = 0.193), duration of IMV (p = 0.363) or NIV (p = 0.632).
Conclusions: Obese patients present with higher rates of ICU admission, NIV and IMV need and higher mortality, advocating the role of obesity in severity and mortality in COVID-19. In this sample, obesity was not related to higher complication rate, nor did it extend global or ICU length of stay.

***Keywords**: COVID-19. Obesity. Morbidity. Mortality. BMI.*

PC 056. ASTHMA AND RHINITIS ONLINE SEARCHS IN TIME OF COVID-19

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Introduction: Google Trends (GT) is a popular tool that provides variations of online interest in selected keywords and topics over time. On March 11, 2020, the World Health Organization (WHO) officially announced that coronavirus disease 2019 (COVID-19) had reached global pandemic status.
Objectives: Identify a possible variation in online search of allergic respiratory diseases in the first months of the pandemic worldwide and in two major official Portuguese language countries (Portugal and Brazil).
Methods: We conducted a GT analysis of online interest variation of "Asthma", "Rhinitis", "Allergic rhinitis", "Allergy" and "Pollen" in the first months of the pandemic that included a visual analysis of the Worldwide, Portugal and Brazil GT lines of the past 4 years (May 2016 till April 2020). Besides, in order to quantify a possible growth in RSV related to the COVID-19 pandemic, we compared the worldwide median-RSV of the GT topics indicated previously from February-April 2020 with those of February-April 2019. A Wilcoxon-test was used to statistically assess results. Values of p < 0.05 were deemed statistically significant. Afterward, to show a possible variation in RSV clearly related to COVID-19 searches we analysed the worldwide RSV-timelines (February-April 2020) of "Asthma/Rhinitis/Allergic rhinitis/Allergy/Pollen & COVID", and the Portuguese and Brazilian RSV-timelines, from February till April 2020, of "Asma/Rinite/Rinite alérgica/Alergia/Pólen & COVID"
Results: "Asthma" and "Rhinitis" RSV-timelines revealed a visual peak in March-April 2020, exposing a nonseasonal worldwide major peak in online interest for "Asthma" in the first months of the COVID-19 pandemic and a minor peak for "Rhinitis" searches. "Allergic rhinitis", "Asthma", "Rhinitis" and "Allergy" had a statistically significant increase in February-April 2020 versus February-April 2019, producing z-values of 8.02 (p < 0.001), 7.50 (p < 0.001), 4.77 (p < 0.001) and 2.61 (p = 0.009), respectively. "Pollen" did not have a statistically significant median-RSV change (z = 0.63, p = 0.524). In addition, the evaluation of the GT lines "Asthma COVID" and "Allergic rhinitis COVID" exposed that some of the "Asthma" and "Allergic Rhinitis" interest gain seems to be related to coronavirus searches.
Conclusions: In conclusion, our findings suggest a worldwide online peak search of allergic respiratory illnesses and/or exacerbations after the COVID-19 outbreak. Despite the lower number of online searches in Portuguese language, the GT specific analyses of Portugal and Brazil did not show relevant exceptions. In addition, our study suggests a sense of uncertainty about the relation of allergic respiratory diseases and COVID-19 risk that should be anticipated in medical consultations by the physicians.

***Keywords**: Asthma. COVID-19. Rhinitis. Google trends. Allergy.*

PC 057. CHARACTERISTICS OF COVID-19 PATIENTS FOLLOWED-UP IN PULMONOLOGY CONSULTATION

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Introduction: Since March 2020, when COVID-19 emerged in Portugal, there has been a need for understanding characteristics of patients who acquire infection and to define subgroups of patients who require close surveillance.
Objectives: Characterization of COVID-19 patients followed-up in Pulmonology consultation at a tertiary hospital.
Methods: Retrospective study that encompasses all patients followed-up in Pulmonology consultation at Centro Hospitalar e Universitário do Porto (CHUP), from January/2019 to August/2020. We registered all SARS-CoV-2 swabs collected and processed in CHUP for these patients. Clinical and demographic characterization of patients with positive swab has been performed.
Results: Considering all patients followed-up at our Pulmonology center, 129 SARS-CoV-2 swabs have been performed for suspected COVID-19, of which 20 tested positive (15.5%). One patient was excluded from final analysis because it was a follow-up consultation post-SARS-CoV-2 infection, without structural lung disease. Nineteen patients were analyzed, of which 63.2% were male, with an average age of 67.9 years. The most common underlying pulmonary pathology (36.8%) was Chronic Obstructive Pulmonary Disease (COPD), followed by Asthma (31.6%). The most common comorbidity was arterial hypertension (73.7%), followed by dyslipidemia (42.1%) and sequelae of pulmonary tuberculosis (15.8%). The number of non-smoking patients (47.4%) was similar to those with current or past smoking habits (average 55 pack-year). Among those under inhalotherapy, 70% were taking LABA/ICS and 30% LABA/LAMA. Mean FEV1 of those infected with COPD was 66.2%, against 93.1% of those with Asthma. The majority of patients (63.2%) required hospitalization, 3 of which in the Intensive Care Unit. Of the 8 patients under chronic immunosuppression or with active cancer, 7 required hospitalization. On average, patients took 4.7 days from

the onset of symptoms to seek health care services. The most common symptom at presentation was fever (57.9%), followed by cough (47.4%) and dyspnoea (36.8%). Patients took an average of 33 days to obtain SARS-CoV-2 cure criteria. The majority (57.9%) had no Influenza vaccination, and only 2 had both Influenza and pneumococcal vaccinations. All patients with pre-infection peripheral eosinophilia ≥ 300/μL required hospitalization for COVID-19. Three (15.8%) of these COVID-19 patients were health professionals, and the only one who needed hospitalization was under chronic immunosuppression. Four patients (21.1%) died as a result of COVID-19, three of whom had active malignancy and the other was on chronic immunosuppression. Of these four, only one presented no peripheral eosinophilia ≥ 300/μL.
Conclusions: In a population of COVID-19 patients with previous lung disease, it is worth noting the high rate of hospitalization and the significant mortality, mainly in patients under chronic immunosuppression or with active neoplasia (87.5%), as well as in those with peripheral eosinophilia ≥ 300/μL (100%).

Keywords: *COVID-19. SARS-CoV-2. COPD. Asthma. Immunosuppression.*

PC 058. ATYPICAL PNEUMONIA IN PATIENT WITH SERRATIA ODORIFERA

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Introduction: Serratia odorifera, a member of the Enterobacteriaceae family, was first described in 1978 by Grimont and others. Although Serratia marcescens is a well-known and most commonly isolated pathogen, other species such as S. odorifera are rarely isolated and seldom cause infection in humans. The first case with confirmed infection was described in 1988 in a 67 year old patient with cirrhosis of alcoholic etiology, admitted by septic shock, with isolation of S. odorifera in blood and urine. The first case of nosocomial infection was described in 1990 in a patient with multiple comorbidities and S. odorifera was isolated from sputum specimens. The patient improved after initiation of targeted antibiotic therapy. S. odorifera has also been described in other case reports as occasionally causing serious and eventually fatal infections, especially in patients with chronic pathologies.
Case report: A 25-year-old female patient, with no relevant personal history, started a 3-month course characterized by cough with purulent and sometimes hemoptoic sputum, fever, night sweats, progressive worsening of fatigue and weight loss. After several antibiotics and in the absence of clinical improvement she was observed in the Pulmonology department. The laboratory work documented an elevation of inflammatory parameters and a negative autoimmune study. The computed tomography of the thorax showed a diffuse and bilateral ground-glass opacification. Videobroncofibroscopy was therefore performed and did not document endoscopic alterations. Bronchoalveolar lavage showed lymphocytosis and isolation of S. odorifera in lavage and transbronchial biopsies. No positive PAS lipoprotein material was observed and hemosiderophages research was negative. The mycological and mycobacteriological examination as well as the study of Galactomannan and Pneumocystis jirovecii were also negative. The histopathological examination demonstrated nonspecific lymphocytic inflammatory infiltrate, with aspects of organizing pneumonia. Pneumonia was admitted to S. odorifera and co-trimoxazole was started according to sensitivity test, showing clinical and imagiological improvement.
Discussion: This clinical case emphasizes a rare association of S. odorifera infection with diffuse pulmonary involvement. Clinical cases that report this association are rare. The isolation of this agent in respiratory secretions should not be considered colonization but should be interpreted in the clinical context of the patient.

Keywords: *Serratia odorifera. Atypical pneumonia. Ground-glass opacification.*

PC 059. NON-TUBERCULOUS MYCOBACTERIA - POPULATION CHARACTERISTICS

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Introduction: Non-tuberculous mycobacteria have gained notoriety. Understanding their pathogenic potential and patient's clinical profile is crucial for adequate clinical performance.
Objectives and methods: Retrospective and descriptive analysis of the patients with nontuberculous Mycobacteria respiratory isolates, between 2017 and 2019.
Results: We obtained 24 positive samples. The demographic analysis showed a median age of 67.5 years (min. 32; max. 87) and most of the patients were male 58.3% (n 14). Concerning smoking, 41.7% (n 10) had active or previous habits. From the analysis of comorbidities, 54.2% (n 13) of the population had respiratory pathology. The most frequent diseases were bronchiectasis (n 8) and chronic obstructive pulmonary disease/emphysema (n 6). It was found that 37.5% (n 9) had a history of tuberculosis (TB). Of these, seven had pulmonary TB and two extrapulmonary TB. From the analysis of the immunological status, 58.3% (n 14) of those analyzed had immunosuppression criteria, most of them due to oncological disease 29.2% (n 7). Regarding the sample's origin, 79.2% (n 19) was obtained from sputum and in 20.8% (n 5) from bronchial lavage. Direct sputum examination was positive in only one case (4.2%). It was isolated Mycobacterium gordonae in 45.8% (n 11) of the samples, followed by Mycobacterium chelonae in 29.2% (n 7). The remaining isolates detected the following agents with the same frequency (4.2%; n 1): Mycobacterium fortuitum, Mycobacterium triviale, Mycobacterium abscesses, and Mycobacterium lentiflavum. Of the 20.8% (n 5) of people who met the criteria for atypical pulmonary mycobacteriosis, four were male. It was found that 20.8% (n 5) of the population analyzed presented isolation of a bacterial agent simultaneously.
Conclusions: Males were the most affected. Most of the population under analysis had respiratory comorbidities and some degree of immunosuppression. The main isolated agent was Mycobacterium gordonae. It was found, in five of the cases, co-infection between atypical mycobacteria and a bacterial microorganism. Less than ¼ of the patients met the criteria for atypical pulmonary mycobacteriosis.

Keywords: *Non-tuberculous mycobacteria. Atypical mycobacterium.*

PC 060. SPHINGOMONAS PAUCIMOBILIS: AN UNDOCUMENTED CAUSE OF NECROTIZING PNEUMONIA

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Introduction: Necrotizing pneumonia is a rare but serious complication of community-acquired pneumonia, characterized by the rapid progression of consolidation to necrosis and cavitation, which can culminate in pulmonary gangrene. The most commonly identified microorganisms include Staphylococcus aureus, Streptococcus pyogenes, Nocardia, Klebsiella pneumoniae and Streptococcus pneumoniae.
Case report: We present a clinical case of necrotizing pneumonia caused by Sphingomonas paucimobilis in a patient under immunosuppression and with a history of frequent falls. This is, to the best of our knowledge, the first case described in the literature of nec-

rotizing pneumonia by this microorganism. Sphingomonas paucimobilis is a gram negative bacillus with low virulence, which can be acquired both in the community and in the hospital. In the community it is mainly found in the soil and drinking water. Patients with chronic pathology or under immunological suppression are more susceptible to infections by this microorganism, however cases of infection have already been described in patients without known comorbidities.
Discussion: For a long time Sphingomonas paucimobilis was considered a non-pathogenic microorganism, whose isolation had no clinical significance. However, a variety of clinical presentations, from meningitis, catheter-associated bacteraemia, ventilator-associated pneumonia, urinary tract infection, among others, have been described. Therefore, we aim to make a brief review of the literature on Sphingomonas paucimobilis, an emerging microorganism with increasing clinical importance and, simultaneously, to illustrate a clinical presentation not yet described of infection by Sphingomonas paucimobilis.

Keywords: *Necrotizing pneumonia. Sphingomonas paucimobilis. Immunosuppression.*

PC 061. A BALLOON LAUNCH - FEVER IN A PATIENT WITH HUMAN IMMUNODEFICIENCY VÍRUS

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Introduction: HIV weakens the body's immune defenses by destroying CD4 lymphocytes. After the initial infection, most patients enter a prolonged and asymptomatic phase, characterized immunologically by a progressive decline in the CD4 count. Over time, opportunistic infections and malignancies become increasingly common, imposing an exhaustive and thorough differential diagnosis.
Case report: 38 years old male patient, non-smoker, with HIV infection diagnosed about 3 years ago and with antiretroviral therapy instituted 3 weeks before admission. He was admitted with fever, irritating cough, partial respiratory failure, elevated inflammatory parameters and multiple nodular lesions dispersed bilaterally on chest X-ray, with differential diagnoses of bacterial, fungal infection, pulmonary tuberculosis or metastatic malignancy. He started antibiotics with levofloxacin empirically, then escalated to meropenem, amikacin and linezolid, however without reversing his fever. Computed tomography of the body, collection of bronchoalveolar lavage, lung biopsy by bronchofibroscopy, bone biopsy and myelogram were performed. All anatomopathological results were compatible with malignant melanoma. All the microbiological examinations were negative (with the exception of cultures for koch bacillus) and given that the fever started 3 weeks after the institution of antiretroviral therapy, the hypothesis of diagnosis of Immune Reconstitution Syndrome was admitted in a patient with probable miliary/disseminated tuberculosis, so anti-bacillary therapy was started. After 2 weeks of anti-bacillary drugs, still without fever resolution, he started oral chemotherapy with melphalan, prednisone and thalidomide, directed to melanoma, with consequent clinical improvement and resolution of the febrile condition, maintaining partial respiratory failure.
Discussion: Fever remains a common symptom in HIV-infected patients regardless of the stage of disease progression, so the differential diagnosis of associated pathologies should take into account the patient's immune status. Although treatment with antiretroviral medication has had a significant impact on the overall survival of most patients, the approach to febrile syndrome in this population continues to be of significant complexity.

Keywords: *HIV. Fever. Melanoma. Tuberculosis.*

PC 062. AN OCCASIONAL FIND

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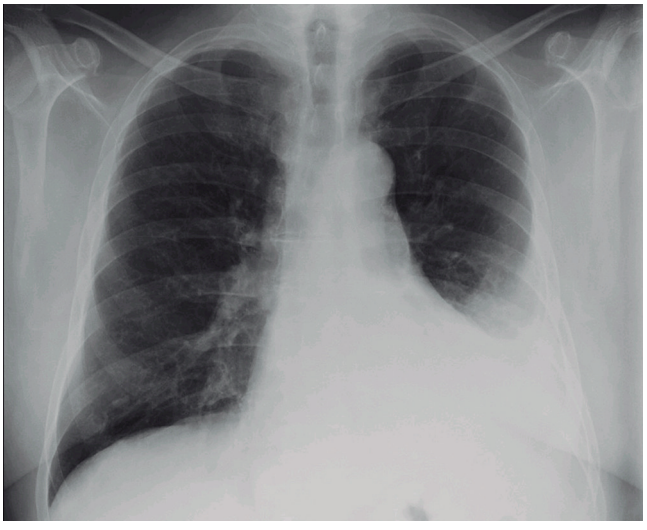
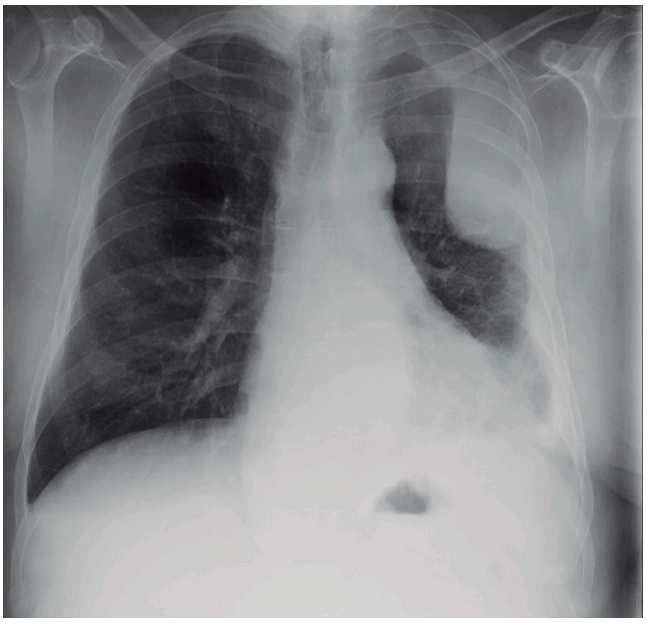
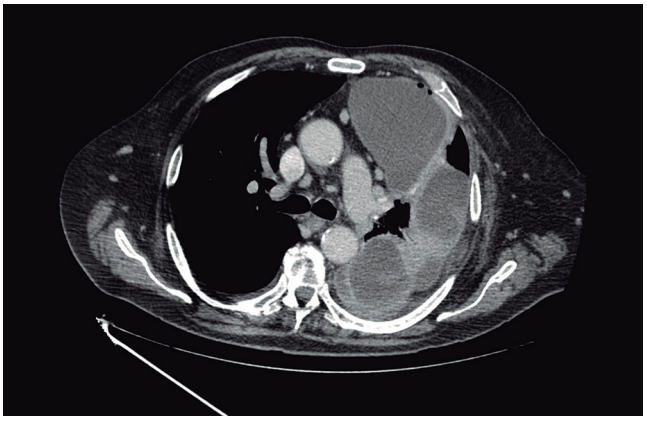
Introduction: Pleural infection is a common clinical condition, with increasing incidence and high morbidity and mortality. Treatment is essentially based on antibiotics, pleural drainage (with the addition of fibrinolytics and recombinant DNase) and surgical approach when necessary when there isn´t resolution with medical therapy. Epithelioid hemangioendothelioma (HE) is a rare tumor (specially of primary origin of pleura), of vascular origin.
Case report: Male, 75-years-old, history of diabetes mellitus, atrial fibrillation, dyslipidemia and arterial hypertension. He went to the emergency department for pleuritic chest pain with one day of evolution, aggravated in the supine position. He denied dyspnea, orthopnea or other symptoms. On lab workup there was leukocytosis, neutrophilia and increased C-reactive protein. Blood gases analysis showed mild hypoxemia and hypocapnia. Chest X-ray showed left blunting of the costophrenic angle with image with superior concavity, compatible with pleural effusion that was corroborated with chest ultrasound that demonstrated free pleural effusion (± 1,000 mL). Diagnostic thoracentesis demonstrated an exudate (pH-7.06, ADA-24.8 IU/L) with neutrophilic predominance (73%). A diagnosis of parapneumonic pleural effusion (category 3 of ACCP classification and class 5 of the Light) a chest tube was placed and antibiotic therapy was started with Piperacillin/Tazobactam. Due to the obstruction and lack of drainage, the drain was removed and a new one was introduced after 4 days with intrapleural fibrinolytic. A new thoracic ultrasound was performed with evidence of septated pleural effusion with posterior loculation, so a 3rd thoracic drain was placed at this location with instillation of alteplase the day after. Chest CT showed a large left pleural effusion, with loculation, with enhancement of pleural layers and thick areas with nodular appearance. One of these loculations had a subscapular location and given the impossibility of placing a chest tube by mobilizing the scapula, a needle aspiration was performed with the output of approximately 200 cc of hematic pleural fluid. Given the impossibility of resolution after placement of 3 chest tubes, intrapleural instillation of alteplase and maintenance of fever, the patient was proposed for surgical approach. In surgery, the presence of several loculations was observed, filled with clots and defibrinated blood. Complete left pleural decortication was performed with good expansion of the lung. Considering that there was a massive and circumferential pericardial effusion, it was decided to make a pericardial window on the left. In the pathological evaluation, the result showed the presence of chronic collagenizing pleuritis, with epithelioid hemangioendothelioma of the pleura and chronic collagenizing pericarditis.







Discussion: This case describes an occasional finding of a rare vascular tumour. Although it can affect several organs, the lungs are the main organ affected. The treatment of choice is surgical approach with resection when possible. In the remaining cases, palliative pleural decortication is performed. Chemotherapy and radiotherapy, despite being used, have few demonstrated benefits and clinical responses, except for clinical case reports. HE can be classified as low/intermediate malignancy, with clinical behavior ranging from benign hemangioma to angiosarcoma.

***Keywords**: Pleural infection. Hemangioendothelioma. Surgery. Decortication.*

PC 063. COLO-PLEURAL FISTULA

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Introduction: Colo-pleural fistulas are rare and are associated with a high mortality rate when they are not diagnosed in time. Most of the time these communications occur as a result of pancreatitis or subphrenic abscess. Its diagnosis should be suspected when microorganisms from the intestinal flora are isolated in the pleural cavity.
Case report: The authors present a case of a 51-year-old patient, with the following personal history: ex-alcoholic and ex-smoker; chronic liver disease; chronic alithiasic pancreatitis; peripancreatic subfrenic collection in 2013 needing percutaneous drainage guided by CT; splenectomy in 2011 due to trauma to the spleen following a fall. Since 2018, the patient has required several hospitalizations at the pulmonology service due to a chronic abscess in the left lower lobe. Taking into account the recurrence of infectious episodes with various microbiological isolations (among which Klebsiella pneumoniae, Acinetobacter baumannii, Enterococcus faecalis, Escherichia coli, etc.), he was referred to observation at the Thoracic Surgery department and a lower left lobectomy was performed in October 2019. The surgical report of this intervention described the identification of food traces at the lobectomy surgical site. After being discharged from the episode of this intervention, the patient returns to the emergency room with complaints of purulent fluid loss from the previous site of insertion of the chest drain. A chest CT was then performed and documented a transdiaphragmatic communication between the left hypochondrium and the left pleural cavity (fistulization), so the patient was transferred to General Surgery Service. In this service, he undergoes a first intestinal transit evaluation exam with contrast that does not demonstrate the presence of fistulous pathways, but in a second evaluation after an attempt to close the fistula through colonoscopy, the contrast showed persistence of fistulization from the splenic angle of colon to the supradiaphragmatic level. He was then proposed for surgery in which the portion of the colon with orifice and fistula was visualized and resected. Since that intervention and six months after the last hospital discharge, the patient (who had a history of eight hospitalizations in the last two years due to recurrence of infections in that lower left lobe) remains without any visits to the emergency room.
Discussion: In this case, the diagnosis is extremely rare but the patient's personal and surgical history, combined with isolations of intestinal flora in respiratory samples, could have raised the suspicion of the existence of this fistula earlier in the course of the patient's hospitalization history. However, although late, the diagnosis and closure of the fistula allowed control of the focus and resolution of the condition.

***Keywords**: Colo-pleural fistula.*

PC 064. BOERHAAVE SYNDROME: A SUCCESSFUL CONSERVATIVE STRATEGY

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Introduction: Spontaneous esophageal rupture (Boerhaave syndrome) is one of the most lethal disorders of the gastrointestinal tract. Diagnosis should be prompt and the approach should be preferably surgical and/or endoscopic, with a conservative attitude reserved for some cases with small ruptures.
Case report: Male patient, 62 years-old, smoker (5 pack-years). With no relevant past medical history. The patient went to the Emergency Department (ED) complaining of left low back pain that appeared after two vomiting episodes. The physical examination was unremarkable. Chest radiography and analytical evaluation did not indicate any significant changes. The patient was medicated with analgesic therapy and discharged. On the following day, the patient returned to the ED because of clinical worsening with left pleuritic chest pain. Physical examination revealed decreased vesicular breath sounds in the lower half of the left hemithorax and cervical subcutaneous emphysema. His ABG revealed hypoxemic respiratory failure (p02 58 mmHg). A new investigation revealed significant changes compared to the tests performed the day before. Blood tests showed increased inflammatory markers (leukocytes 17 × 10^9/L, PCR 142 mg/L), altered liver function (AST 76 UI/L, ALT 103 UI/L) and increased D-dimers (1,023 ng/mL). Chest radiography showed a left basal hypotransparency with gas-

fluid level and hypertransparency areas, suggesting the presence of air in the mediastinum and subcutaneous tissue. A chest CT-angiogram was performed, which revealed a pneumomediastinum surrounding the descending segment of the thoracic aorta and esophagus; cavitation with gas-fluid level between the lingula and the lower left lobe and moderate left pleural effusion. A thoracentesis was performed, and a chest tube placed. The pleural fluid (PF) was turbid, with empyema characteristics (leukocytes 19,935 cells/mm^3, 99% polymorphonuclear, glucose 14mg/dl, LDH 1,444 U/L, pH7.1, total proteins 4g/dl) and amylase 518 U/L. A spontaneous esophageal rupture was confirmed by upper gastrointestinal endoscopy, which identified an 8-10 mm hole perforation in the distal third of the esophagus. A clip and esophageal stent were placed, which migrated to the gastric cavity on the 2nd day. A nasojejunal probe was placed and ceftriaxone and clindamycin were instituted. The patient was admitted to the Intermediate Care Unit with mediastinitis and an extensive lung abscess secondary to Boerhaave syndrome. He was transferred to the Surgical ward on the 8th day. The tests that were previously carried out, namely, bacteriological and mycobacterial of the PF, blood cultures, Legionella and Pneumococcal antigens were negative. Clinical deterioration was observed, with fever and an increase of the inflammatory parameters. An Enterococcus faecalis and Escherichia coli were identified in the PF. Antibiotic therapy with meropenem, gentamicin and amikacin was initiated, with clinical and radiographic improvement. The chest tube was removed on the 31st day of admission. During the hospitalization length, a conservative strategy was constantly adopted having the case been discussed multiple times with Thoracic Surgery specialists of the referral hospital.
Discussion: It should be noticed that a conservative therapeutic strategy may be appropriate even in patients with more severe clinical presentations. In this case, despite the early placement of a stent, it did not have the intended effect, so an expectant attitude was adopted with satisfactory outcomes.

Keywords: *Boerhaave syndrome. Spontaneous esophageal rupture. Mediastinitis. Lung abscess.*

PC 065. SPONTANEOUS PULMONARY HEMORRHAGE IN A PATIENT WITH EXUBERANT PULMONARY EMPHYSEMA

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Introduction: Hemoptysis may suggest different etiologies. The authors present the case of a patient with exuberant pulmonary emphysema that favored the formation of a probable mycetoma and consequent spontaneous pulmonary hemorrhage.
Case report: Male patient, 56 years old, ex-smoker (70 UMA). Lives in a humid house with mold on the walls. In January 2019, the patient begins to experience fatigue and cough with mucopurulent sputum occasionally streaked with blood. Chest CT revealed exuberant emphysema predominantly in the upper lobes. Admitted to the emergency room in August 2019 for massive hemoptysis. The patient was tachypneic, with a GCS of 15. His blood tests presented hemoglobin of 11.9 g/dL, with no irregularities in the coagulation or inflammatory parameters. The chest CT showed a 5 cm, thin-walled cavity, already visible on the previous CT, now filled with a soft tissue mass, revealing the Monod sign, suggestive of pulmonary mycetoma. In the first 48 hours, there was an increasing need for supplemental O2. Oro-tracheal intubation was performed and bronchofibroscopy (BF) was then carried out. Examining the bronchial tree, live blood was visualized bilaterally without active haemorrhage. Blood cultures, bacteriological and mycobacteriological examination of secretions, hyphae examination, and cytologic smears were negative. The patient was transferred to a central hospital for surgical therapy, which was delayed due to clinical instability. Another BF was performed, including endotracheal aspirate and bronchoalveolar lavage (BAL). Bacteria culture tests revealed a Serratia marcescens, this finding was interpreted in the context of a ventilator-associated pneumonia, and mycobacteriology and mycology examinations were negative. Aspergillus fumigatus precipitins and the BAL and serum galactomannan were negative. The diagnosis of mycetoma was acknowledged based on the imaging characteristics and epidemiological context. The patient underwent antibiotic and antifungal therapy with clinical and imaging improvement and was discharged waiting for elective surgery.
Discussion: The authors highlight this case, bestowing great importance to a thorough clinical history, identifying inhaled risk factors, as well as a meticulous diagnostic investigation. Despite the absence of laboratory validation, the patients' medical history, the radiology variations and the exclusion of other causes supported the diagnosis.

Keywords: *Haemoptysis. Pulmonary emphysema. Mycetoma. Aspergillus.*

PC 066. PNEUMOCYSTOSIS IN NON-HIV IMMUNOCOMPROMISED PATIENTS – LET'S TALK ABOUT PROPHYLAXIS?

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Introduction: Pneumocystosis is an emerging problem in immunocompromised individuals not infected by the human immunodeficiency virus (HIV), being associated with significant morbidity and mortality. While for HIV patients, transplanted patients or those with hematological neoplasms there are specific and universally accepted recommendations regarding the prophylaxis of Pneumocystis jirovecci pneumonia, the same is not true for patients immunocompromised by other causes, for which there is still a lack of consensus regarding prophylaxis.
Case report: Male, 55 years old, with a history of silicosis and glioblastoma multiforme, surgically removed, undergoing concomitant chemotherapy and radiotherapy and under prolonged corticosteroid therapy. He was admitted for dyspnoea, chest pain with pleuritic characteristics, dry cough and notion of fever. He presented with hypoxemic respiratory failure and radiologically there was an evident bilateral worsening of the reticulo-nodular pulmonary pattern compared to previous exams. A computed tomography scan of the chest was performed, which identified worsening of pre-existing nodular lesions, in number and dimensions, the presence of some tree in bud lesions in the upper lobes and new lung masses with central necrosis and air bubbles inside. Initially, the hypothesis of tuberculosis associated with silicosis was considered more likely, not excluding the possibility of pulmonary metastasis. The patient was then submitted to bronchofibroscopy with bronchoalveolar lavage, with both mycobacteriological and cytological examination negative, but the DNA test for Pneumocystis jirovecii was positive, and a diagnosis of pneumocystosis was established. Treatment with cotrimoxazole was initiated, with good clinical evolution, and a recommendation was made to carry out a secondary prophylaxis after the end of the treatment.
Discussion: Pulmonary disease due to interstitial diseases, associated with cancer and corticosteroid therapy, is a favorable environment for opportunistic infections. This case highlights the importance of the debate about the possible need for prophylaxis in this type of risk groups, in the sense of moving towards the creation of guidelines.

Keywords: *Pneumocystis jirovecii. Prophylaxis. Immunocompromised patients. Individuals not infected by HIV.*

PC 067. FUNGI SURPRISE - INVASIVE CANDIDA GLABRATA WITH EMPYEMA

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Introduction: Invasive candidiasis (IC) is increasing in prevalence, mostly because of the growing number of immunocompromised patients and those with multiple underlying diseases but also because of the widespread use of broad-spectrum antibiotics. Mortality remains high, around 70%. Candida glabrata is one of the major pathogenic non-albicans Candida species, being the second most usual cause of candidemia in Europe and America. The most common ways for the yeast to reach the pleural cavity are haematological spread, contiguous lung infections, complications of pre-existing chronic empyema, oesophageal-bronchial fistula or repeated thoracentesis. There seems to be a male predisposition. Risk factors are not clearly defined but one can point the immunocompromised status, as in transplanted patients, prolonged use of glucocorticoids, diabetes, haemodialysis, malignancy or current chemotherapies, recent abdominal or thoracic surgeries. The difficulties in the diagnosis delays the target therapy worsening prognosis.
Case report: The authors present a case of an 83 years-old man, current smoker (120 pack-years), diagnosed with chronic pulmonary thromboembolism, cerebrovascular disease with past history of left hemisphere ischemic stroke with associated carotid atheromatosis and vascular dementia. Previous history of prostatic cancer treated with radiotherapy. Recently hospitalized with acute respiratory failure due to acute infectious tracheobronchitis, complicated with atelectasis and acute-on-chronic pulmonary thromboembolism, treated with amoxicillin/clavulanate and discharged with oxygen therapy. Two days after was readmitted to the emergency department with worsening dyspnea. He presented cyanotic, tachypneic, peripheral arterial saturation of 75% in room air, normal blood pressure; the breath sounds were diminished on the right lung field. Blood tests showed elevated C-reactive protein of 33.7 mg/dL and negative procalcitonin. Arterial blood gases showed respiratory acidemia and normal lactate level. On imaging there was consolidation of the right lower lobe with associated effusion. SARS-CoV2 PCR result was negative. After a period of non-invasive ventilation and optimization of medical therapy, the patient stabilized and was admitted to the pulmonology ward. Therapy with piperacillin/tazobactam and linezolid was started. Diagnostic thoracocentesis was performed and the pleural fluid was compatible with empyema and extensive loculation in the thoracic ultrasound. The patient underwent videothoracoscopic debridement during which an abscess in the right lower lobe was visualized, draining to the pleural space. Two chest tubes were left in place. Candida glabrata was isolated on the pleural fluid and pleural biopsies, and Prevotella buccae and Atopobium parvulum on the pleural fluid only. All other microbiologic results were negative, as well as viral serologies. Caspofungin and amoxicillin/clavulanate were started according to susceptibility tests: his clinical evolution was favorable and transition to oral voriconazol was made.
Discussion: According to the literature, fungal empyemas are mostly related to nosocomial infections and thoracic or abdominal surgeries, which was the case with our patient. Candida' empyemas are a rare entity, with high mortality. Our case report highlights the importance of its diagnosis, since directed therapy is essential for its resolution and impact on mortality, especially in polymorbid old patients. Fungigrams are essential in Candida glabrata isolates due to frequent resistance to fluconazol.

Keywords: *Empyema. Candida. Candida glabrata. Caspofungin.*

PC 068. PREGNANT ASTHMATICS: AMBULATORY MANAGEMENT AND HOSPITAL ADMISSIONS

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Introduction: Asthma is the most common respiratory disease during pregnancy (2-13%), causing hospital admissions and maternal-fetal complications when poorly controlled.
Objectives: Evaluate the ambulatory management and control; causes and outcomes of hospitalization; obstetrical outcomes of pregnant asthmatics.
Methods: Retrospective review of the medical records of pregnant asthmatics admitted to our Pulmonology Department during 2004-2019.
Results: During 2004-2019, sixty pregnant women were hospitalized in the Pulmonology Department, 70% of whom due to exacerbation of asthma and 22% had more than one hospital admission. The mean age was 28 ± 6 years. The mean gestational age was 23 ± 9 weeks and 50% of the admissions occurred during the second trimester of pregnancy. About one fourth of the patients were smokers or former smokers. One third were never medicated or discontinued asthma medication during pregnancy. Regarding ambulatory asthma control previously to hospital admission, 82% had uncontrolled disease, with several emergency department visits, 5% had partially controlled asthma and only 13% presented controlled disease. Hospital admissions were due to undertreatment or non-compliance (57%), acute bronchitis (24%) and pneumonia (19%). Acute respiratory failure was present in 83% of the cases. In the past 16 years, no significant variation was seen in the main causes of asthma exacerbation or the number of hospital admissions – 14 admissions in 2004-2008 (2.8/year), 13 admissions in 2009-2013 (2.6/year) and 15 admissions in 2014-2019 (2.5/year). Obstetrical complications occurred in 5 cases: pre-eclampsia; obstetric cholestasis; placental abruption; prelabour rupture of membranes; and fetal distress with the need for urgent cesarean section. No relationship with asthma medication was established in any case. Concerning obstetrical outcomes, eutocic delivery occurred in 69%, cesarean section in 31%, with one case of low birth weight to report.
Conclusions: Hospital admissions for asthma in pregnancy did not decrease in the past 16 years, with undertreatment and non-compliance remaining the main cause. Considering the evidence of adverse outcomes of asthma exacerbations during pregnancy related to undertreatment and non-compliance and the evidence supporting the safety of usual doses of inhaled corticosteroids and long-acting beta-2 agonists, the reduction of asthma medication should be avoided during pregnancy. Hence, we still need to increase awareness of the general public and healthcare providers for the improved maternal-fetal outcomes with successfully controlled asthma.

Keywords: *Asthma. Pregnancy. Therapeutic. Exacerbations. Control. Education.*

PC 069. BRONCHIECTASIS IN PATIENTS WITH ASTHMA – A REAL-LIFE STUDY

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Introduction: Asthma and bronchiectasis are two pulmonary diseases that often coexist. It is known that bronchiectasis can contribute to the asthma severity and control, making its recognition crucial in these patients.
Objectives: To analyse the clinical features associated with bronchiectasis in patients with asthma and related outcomes.
Methods: Retrospective observational study with patients followed in the outpatient asthma clinic of a tertiary hospital, between

	With bronchiectasis *n*=34	Without bronchiectasis *n*=55	*p*-value
Baseline and clinical features			
Age, years	57.91±15.84	57.96±15.01	0.989
Gender (female)	25(73.5)	40(80)	0.487
Body mass index, kg/m^2	28.32±6.13	30.16±5.89	0.170
Smoking history			
Non-smoker	32(94.1)	45(90)	0.696
Former smoker <10 packs-year	2(5.9)	5(10)	
Asthma severity			
Mild	2(5.9)	10(20)	0.186
Moderate	15(44.1)	20(40)	
Severe	17(50)	20(40)	
Time from diagnosis of asthma, years	30±16.5	34.9±20.1	0.243
Atopy	12(35.3)	27(54)	0.092
Rhinosinusitis	22(64.7)	35(70)	0.610
Nasal polyposis	5(14.7)	7/14)	0.928
GERD	16(47.1)	16(32)	0.163
Chronic sputum	20(58.8)	3(6)	**<0.001***
Functional, analytic, and microbiologic features			
FEV_1/FVC	64.75±12.72	69.34±12.01	0.097
FEV_1, %	73.02±19.34	79.09±20.84	0.181
FVC, %	89.46±14.24	90.50±17.28	0.774
Positive bronchodilator response test	23(67.6)	24(48)	0.075
FeNO, ppb	18[8.5-41]	23[17-42.5]	0.168
Blood eosinophils, cells/uL	145[80-210]	230[140-390]	**0.014***
Total serum IgE, UI/mL	66.9[18.1-132]	75.9[28.85-248]	0.320
Inflammatory phenotype			
Type 2	20(58.8)	44(88)	**0.002***
Non-Type 2	14(41.2)	6(12)	
History of positive sputum culture	6(17.6)	2(4)	0.057
Outcomes			
History of admission due to asthma exacerbation	9(26.5)	11(22)	0.637
≥1 exacerbation in the last year	14(41.2)	17(34)	0.503
Number of exacerbations in the last year	0[0-1] (0; 7)	0[0-1] (0; 6)	0.328
≥1 Emergency Department visits in the last year	12(35.3)	9(18)	0.072
Number of Emergency Department visits in the last year	0[0-1] (0; 7)	0[0-0] (0; 6)	0.067
≥1 admission in the last year	6(17.6)	2(4)	0.057
Number of admissions in the last year	0[0-0] (0; 7)	0[0-0] (0; 2)	**0.036***
Cycles of oral corticoid therapy in the previous year	0[0-1] (0; 7)	0[0-1] (0; 6)	0.162
Cycles of antibiotic therapy in the previous year	0[0-1] (0; 7)	0[0-0] (0; 4)	**0.015***

Data are presented as n(%) or mean±standard deviation or median[range] (minimum; maximum); *p<0.05

Factors	OR (95% CI)	*p*-value
Chronic sputum	0.996(0.993-0.999)	0.008*
Blood eosinophils, cells/uL	0.016(0.002-0.116)	<0.001*

*p<0.05. The inflammatory phenotype was excluded because this variable did not present statistical significance in the logistic regression model.

Figure PC 069

January 2019 and June 2020. Patients with confirmed asthma who carried out at least one high resolution thoracic computed tomography between 2016-2020 were included. Those with bronchiectasis explained by other etiologies were excluded. We analysed demographic, clinical, analytic, and functional data, and outcomes according to the presence or absence of bronchiectasis.
Results: 84 patients were included. The results are summarized in the following tables.
Conclusions: In asthmatics, the coexistence of bronchiectasis was associated with lower levels of blood eosinophils and the presence of chronic sputum. Patients without bronchiectasis had predominantly type 2 inflammatory phenotype, while those with bronchiectasis presented both phenotypes. The presence of bronchiectasis seems to predispose to more severe exacerbations with hospital admission and more cycles of antibiotics.

Keywords: *Asthma. Bronchiectasis. Clinical features. Outcomes.*

PC 070. SERIOUS ASTHMA EXACERBATION IN AN INTENSIVE MEDICINE SERVICE

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Introduction: Acute asthma that conditions admission to an Intensive Care Unit (ICU) is a serious situation. In the last decades, admission rates to the ICUs for this reason have decreased, with few studies on the approach and mortality in this context.
Objectives: To evaluate the approach of patients with severe asthma exacerbations admitted in an Intensive Medicine Service (IMS) and their clinical evolution.
Methods: Analytical, cross-sectional, retrospective study of patients diagnosed with asthma exacerbation admitted in an IMS from 1/1/2017 to 1/31/2020. The following variables were analyzed: sex, age, history of asthma, comorbidities, previous hospitalizations, precipitating factors, vital parameters on admission, arterial blood gases, treatment (outpatient and inpatient), mean time of invasive mechanical ventilation (IMV), hospitalization length, complications, hospital mortality rate and 28 days after discharge.
Results: During the considered period, 14 patients with a diagnosis of acute asthma were admitted, in a total of 16 hospitalizations: 10 in the ICU and 6 in the Intermediate Care Unit. There was a predominance of females (56.3%), with a mean age of 52.6 ± 17.1 years, and asthma starting in adulthood (76.9%). Relevant comorbidities: arterial hypertension (43.8%), grade I obesity (27.3%). Five were smokers. Three patients were on step 5 of GINA. One patient had several hospitalizations in the IMS in the previous year due to acute asthma (one with IMV). The precipitating factors for exacerbation were: poor therapeutic adherence (n = 5), infection (n = 5), unknown (n = 5), allergic reaction (n = 1). Eight patients started symptoms hours before going to the hospital. In the emergency department, the mean respiratory rate was 27.3 ± 6.1cpm, the heart rate was 104.8 ± 23.4 bpm, 5 patients were unable to communicate, 3 were able to communicate by sentences, 3 had a Glasgow scale < 10. In gasometry at admission, the mean pH was 7.31 ± 0.18, the PaCO2 was 47.2 ± 20.1 mmHg, the PaO2 123.5 ± 125.2 mmHg, HCO3- 21.2 ± 4.0 mmol/L (mean FiO2 of 37.9 ± 20.5%). Patients undergoing IMV had a pH of 7.20 ± 0.18 (p = 0.010) and PaCO2 of 57.5 ± 21.5 mmHg (p = 0.015). The average eosinophils in peripheral blood was 472 ± 399.9/μL (3.8 ± 3.2%). The average APACHE II score was 19.7 ± 12.6. In addition to pharmacological therapy, nine patients received IMV (mean period of intubation of 4.3 ± 2.7 days) and seven required conventional oxygen therapy. Complications during hospitalization: ventilator-associated tracheobronchitis (n = 2), pneumothorax (n = 1), pneumomediastinum (n = 1). The average length of hospitalization in the ICU was 3.8 ± 3.2 days and the hospital stay was 7.3 ± 4.6 days. In ventilated patients, hospitalization was longer (5.3 ± 3.0 days in the ICU, p = 0.009; 9.2 ± 5.4 days in the hospital, p = 0.044). The mortality rate was 25% in these patients hospitalized in an IMS (44.4% of ventilated patients); the causes of death were anoxic encephalopathy due to cardiorespiratory arrest (n = 3) and septic shock (n = 1). In the 28 days after discharge from the ICU, mortality rate was 8.3%.
Conclusions: The need for IMV is an indicator of potentially life threatening asthma, conditioning prolonged hospital stay and important mortality. In this study, we identified that the majority of the patients had respiratory acidosis and hyperoxia, and are already in respiratory exhaustion. Early diagnosis and performance are important because it is susceptible to reversibility and reduces mortality.

Keywords: *Asthma exacerbation. Intensive Care Unit. Invasive mechanical ventilation.*

PC 071. MONITORING DISEASE PROGRESSION IN SEVERE NON-ALLERGIC ASTHMA PATIENTS ON DUPILUMAB - A CASE SERIES

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Introduction: Dupilumab is a monoclonal antibody that inhibits interleukin (IL)-4 and IL-13 by blocking the IL-4 receptor. It has been recently approved in Europe for treatment of type 2 severe asthma patients refractory to maximal optimized therapy. Until now, in Portugal, it is only available for these patients through an early access program. As far as the authors know, there are no studies in Portugal evaluating the effect of this biological treatment on disease control.
Methods: Data on demographic information, symptoms, inhaled and oral corticosteroid therapy, follow-up questionnaires (CARAT, EuroQoL-5D and ALQ), peripheral blood (PB) eosinophil count and number of exacerbations were collected, before and four months after the beginning of Dupilumab. Analyses were performed using SPSS (Version 26.0.0.0). Descriptive statistics were described using median, mean and standard deviation (SD). The Wilcoxon Matched-Pairs Signed-Ranks Test was used for the comparison of different parameters before and four months after the beginning of Dupilumab. A value of $p < 0.05$ was considered statistically significant.
Results: Among the four patients included in the study, 75% were female. The median age was 40 years (minimum 20; maximum 68). Two patients lacked positive response to previous biological treatments, one was only eligible for Dupilumab amongst all the other available biological agents and the other patient started Dupilumab due to asthma aggravated by severe nasal polyposis. The mean initial Immunoglobulin E was 66.25 IU/mL (SD 51.43). The mean PB eosinophil count before and four months after the beginning of Dupilumab was 363 cells/μL (SD 532) and 425 cells/μL (SD 625), respectively (p = 0.273). Only one patient was on systemic corticosteroid therapy (30mg/day of Deflazacort); the daily dose remained the same four months after the beginning of Dupilumab. Two patients had normal initial pulmonary function tests, but an improvement of FEV1, FVC, FEV1/FVC and DLCO observed on the fourth month evaluation was noticed. One of these patients had a fractional exhaled nitric oxide (FeNO) of 148 ppb before Dupilumab, with a decrease verified on the fourth month evaluation (FeNO 19 ppb). Although no statistically significant differences were obtained when comparing the symptoms and quality of life scores before and after the beginning of Dupilumab, an improvement was verified on the fourth month evaluation: CARAT (11.00 (SD 6.38) vs. 17.75 (SD 8.77)); upper airway section of CARAT (3.75 (SD 2.75) vs. 7.50 (SD 3.87)); EuroQoL-5D (11.50 (SD 2.52) vs. 9.25 (SD 2.63)); ALQ (17.25 (SD 2.36) vs. 14.50 (SD 6.35)); visual analogue scale (40.00% (SD 21.21) vs. 63.75% (SD 26.26)). The mean monthly ratio of exacerba-

tions was 0.33 in the year prior to the beginning of therapy and 0.06 four months after the beginning of therapy (p = 0.061). No adverse effects were registered on the fourth month appointment.
Conclusions: In this case series, treatment with Dupilumab revealed a tendency towards a better overall symptomatic control, an improvement in type 2 comorbidities (rhinosinusitis and nasal polyposis) and a reduced ratio of exacerbations in type 2 severe asthma patients, including in those with previous failure to other biological agents, with a positive safety profile.

Keywords: *Severe asthma. Biological agents. Dupilumab.*

PC 072. CLINICAL EXPERIENCE WITH BENRALIZUMAB IN A SEVERE ASTHMA OUTPATIENT CLINIC

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Introduction: Benralizumab is a monoclonal antibody against the IL-5 receptor α found on the surface of eosinophils, leading to apoptosis. It is recommended as an add-on maintenance treatment for severe and uncontrolled eosinophilic asthma, along with inhaled corticosteroids and long-acting β agonists. Benralizumab is available since 2019 in Portugal and limited data exist on its efficacy in clinical practice.
Objectives: The aim of this study is to evaluate the efficacy of benralizumab as an add-on therapy to improve asthma control in real life patients with non-controlled severe asthma.
Methods: A prospective observational study was conducted to evaluate the effectiveness of benralizumab in improving severe eosinophilic asthma for 8 months. The following were assessed: disease control and quality of life, using Control of Allergic Rhinitis and Asthma Test (CARAT), Asthma Life Quality Test (ALQ), EuroQoL-5D and Visual Analogue Scale (VAE) scores; the impact on biomarkers in type 2 asthma such as peripheral eosinophilia (eos), the frequency of exacerbations and lung function. Patients performed the global evaluation of treatment effectiveness with the GETE scale.
Results: In our department, 10 patients were being treated with benralizumab for an average of 9.3 ± 6.1 months [1-24 months], 40% were male and the mean age was 53.2 ± 17.3 years. Before starting on treatment, they had an average count of 574 ± 397.4 eos/μL in peripheral blood, IgE 139.6 ± 176.7, FeNO 122.66 ± 118.1 ppb, FEV1 1.7 ± 0.7 L (62 ± 26.7%) e CARAT 14.6 ± 3.6. Five of those patients completed 8 months of treatment and were evaluated at that time. 40% were male, the mean age was 56.2 ± 14.4 years and total treatment duration of 13 ± 6.4 months. In the 8 past months before starting biological treatment, they had an average count of 826 ± 399.6 eos/μL, FeNO 173.5 ± 154.1 ppb, FEV1 1.8 ± 0.7 L (60.1 ± 21.7%), CARAT 16.4 ± 3.4, EuroQoL-5D 10.25 ± 1.7, EVA 50.5 ± 12.2%, ALQ 15.8 ± 1.3 and 2.0 ± 0.7 exacerbations. Data at 8 months of therapy showed a statistically significant reduction in the number of eosinophils in peripheral blood (34 ± 46.7 eos/μL, $p < 0.05$) and frequency of exacerbations (0.4 ± 0.5, $p < 0.05$). The remaining parameters showed a slight improvement not statistically significant.
Conclusions: At 8 months treatment, there was a statistically significant decrease in the number of peripheral eosinophils and frequency of exacerbations. These results support the effectiveness and safety of benralizumab reported in previous clinical trials. The small sample size in this study may have limited the analysis of other variables. Overall, benralizumab shows improvement in asthma control, quality of life and perception of the disease across patients with severe, uncontrolled eosinophilic asthma.

Keywords: *Asthma. Monoclonal antibodies. Benralizumab. Biomarkers.*

PC 073. SMOKING CESSATION DURING HOSPITAL ADMISSION

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Introduction: Smoking is one of the main worldwide preventable causes of illness, disability and death, being essential to implement measures of prevention and smoking cessation (SC). Hospital environment is generally propitious to SC for several reasons such as a legal ban on smoking in hospital facilities, greater vulnerability of patients facing acute illness and the continuous contact with healthcare professionals. Studies reveal SC rates between 14 and 70% after inpatient intervention and during follow-up after hospital discharge.
Objectives: To evaluate the effectiveness of intensive SC intervention during hospital admission for acute respiratory disease and 6-month follow-up after discharge.
Methods: Prospective study that included patients admitted in Pulmonology Service at Hospital Centre of Tondela-Viseu, due to acute respiratory disease, active smokers and who consented to join the SC counseling program, between January and December of 2019. All participants filled out a form questionnaire about sociodemographic characteristics and smoking habits. During the first 48 hours of admission, intensive intervention was applied, with counseling for SC and with a minimum of 2 visits, depending on the length of stay. After discharge, they were referred to consultation and observed at 1, 3 and 6 months.
Results: The study included a total of 30 patients, 86.7% male, with a mean age of 58.6 ± 13.6 years. Most had primary education (56.7%). 46.7% were retired, 36.7% were active and 16.6% were unemployed. 53.3% had no daily physical activity. 1/3 of the patients were admitted for exacerbation of chronic obstructive pulmonary disease or asthma, 1/3 for pleural pathology, 26.7% for disease related to previous lung cancer and 6.7% for pneumonia. The median length of stay was 10 ± 11 days. As for smoking history, the mean smoking time was 40.3 ± 14.4 years, median smoking load 40 ± 26 pack-year units and median number of cigarettes smoked daily at admission of 6.5 ± 7. The average level of nicotine dependence by the Fagerström test was 4.3 ± 2.8. None of the patients accepted SC pharmacological therapy during hospitalization. After hospital discharge, 11 lost contact or missed the appointment (included in the group of unsuccessful SC). 19 patients were seen in consultation, 11 of whom maintained SC at 6 months, determining an overall SC rate of 36.7%. There was a statistically significant difference in the SC successful group regarding the motivation to quit smoking and the Richmond test, as well as in the practice of daily physical activity ($p = 0.029$), compared to the group of unsuccessful SC. These groups did not obtain a significant difference regarding age, sex, education level, employment status, years of smoking, number of cigarettes smoked daily, smoking load and Fagerström test.
Conclusions: Behavioral counseling, even without targeted pharmacological therapy, during hospitalization for acute respiratory disease, together with regular follow-up after discharge, contribute to an increase in the SC rate. These results reflect the importance of maintaining consistent SC programs within hospitalized patients.

Keywords: *Smoking cessation. Hospital admission. Acute respiratory disease.*

PC 074. WHAT DO HEALTH PROFESSIONALS KNOW ABOUT SMOKING CESSATION?

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Introduction: Smoking has a pandemic expression, representing the main cause of avoidable illness and death. In Portugal it is consid-

ered by the Directorate General of Health (DGH) as a Priority Health Program: The National Program for Smoking Prevention and Control which proposes as a priority measure the training of health professionals (HP) in the area of smoking cessation (SC).
Objectives: To evaluate the knowledge about SC in a population of participants in the first SC course at the Hospital Vila Franca de Xira (HVFX).
Methods: Open and anonymous survey, collected on September 13, 2019, at the beginning of the hospital's first SC course, which included the following variables: gender, age, professional class, years of professional experience, smoking habits and knowledge about smoking and SC. Statistical analysis of the data was performed in Microsoft Excel 2016®.
Results: 41 HP participated and answered the survey, with an average age of 32.3 years old and a predominance of female gender (75.6%; n = 31). Most of the participants were physicians (82.9%; n = 34), with 6 nurses (14.6%) and 1 psychologist (7.1%). In the subgroup of physicians, 19.5% (n = 8) were general practitioner (GP), 29.3% (n = 12) general interns and 34.1% (n = 14) residents of GP (14.6%; n = 6), pneumology (12.2%; n = 5), psychiatry (4.9%; n = 2) and otorhinolaryngology (2.4%; n = 1). It was found that 75.6% (n = 31) of participants had less than 10 years of professional experience and 17.1% (n = 7) had more than 20 years. Regarding smoking, only 12.2% (n = 5) of participants were ex-smokers and none is an active smoker. Within the subgroup of ex-smokers (n = 5), the average age was 40 years old, with a prevalence of female gender (n = 4) and nurses (n = 4). Concerning knowledge about SC, it was found that 51.2% (n = 21) never had formation in SC during their professional career, but 63.4% (n = 26) reported to have knowledge about behavioral approaches use in a program of SC and 90.2% (n = 37) report to know the symptoms of smoking deprivation. However, 65.9% (n = 27) have no experience in prescribing therapy.
Conclusions: In a population motivated by knowledge about SC, more than half never had any formal training on the subject and almost two thirds had no experience in the treatment of smoking. Although this sample is very small, it is consistent with the conclusions of the published report DGH in 2018 about the subject and continues to suggest that training on smoking and its treatment is still very incipient in Portugal, justifying more training and information on smoking treatment.

***Keywords**: Smoking cessation. Health professional.*

PC 075. THE IMPORTANCE OF SMOKING HABITS IN PRE-HOSPITAL CARE - A DESCRIPTIVE ANALYSIS

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Introduction: Emergency medical and resuscitation vehicles (VMER) belonging to the National Institute of Medical Emergency (INEM) constitute the different pre-hospital care teams in Portugal. They are activated in life-threatening situations (emergent occurrence - P1) by completing guiding algorithms. Contact with patients in the pre-hospital care takes place in a stressful environment and often the gathering of information is scarce to the detriment of clinical severity.
Objectives: To assess the impact of smoking on the population with complaints compatible with priority P1.
Methods: A retrospective observational analysis of 9 months, between December of 2019 and august of 2020, of service of an operator was performed at VMER - Hospital de São José and at VMER - Hospital Beatriz Ângelo with a total of 209 services. Victims under the age of 18 were excluded. Information on smoking habits, past medical history and usual medication was collected through direct interview or consultation of documentation at the activation site. A descriptive statistical analysis of categorical variables was carried out using IBM SPSS Statistics 25® statistics platform. Parametric tests were used as necessary. Statistical significance was considered when Pearson < 0.05.
Results: 195 victims were included, 53.8% (n = 105) with an average age of 65.69. About half of the victims (49.2%, n = 96) had a history of smoking habits. Of these, 61.5% had active smoking habits (n = 59). Thirty nine percent (n = 76) had at least one known respiratory disease; the most prevalent were COPD, Asthma, Interstitium disease and bronchiectasis. In the population with previous respiratory pathology, about 60% (n = 44) had a history of smoking habits. Of the victims rescued with the diagnosis of COPD (n = 36), most had a smoking history, 81% (n = 29), and 13 maintained smoking habits ($p < 0.05$). In the population of smokers and ex-smokers (n = 96), 23% of services were due to dyspnoea (n = 22) and 16% due to chest pain (n = 15) [$p < 0.05$]. In victims without smoking habits, only six were due to dyspnea and 12% (n = 12) due to chest pain.
Conclusions: Smoking remains a frequent habit of the population that has complaints that meet criteria for P1 priority. These data suggest that smoking is a clear risk factor for high-severity clinical situations with the need for pre-hospital care emergencies. They are also in accordance with the known data from related to increased cardiovascular risk and respiratory pathology with smoking habits. Therefore, it's imperative the introduction of more effective strategies for the prevention of smoking as a public health measure and the encouragement of smoking cessation by the assisting medical teams is urgent.

***Keywords**: Pre-hospital care. Smoking.*

PC 076. PLEURAL EOSINOPHILIC EFFUSION – A RARE PRESENTATION OF MESENTERIC PANNICULITIS

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Introduction: The differential diagnosis of eosinophilic pleural effusion (> 10% eosinophils) is extensive, the most common causes being pleural irritation (by pneumothorax, hemothorax or pleural procedures), malignancy and infection. Mesenteric panniculitis is a chronic inflammatory disease of the mesentery adipose tissue, that is rare and generally benign. Its pathogenesis is not well understood, but it can appear as a paraneoplastic syndrome. Rare cases have been reported with ascites and pleural effusion.
Case report: 38-year-old woman, textile worker, observed in the emergency department due to pleuritic chest pain and epigastric pain with 5 day evolution, associated with asthenia and anorexia, without weight loss or other respiratory symptoms. History of autoimmune thyroiditis, without any usual medication. No history of trauma, surgery or previous thoracentesis. She was subfebrile, eupneic, with 98% peripheral saturation, but semiology was compatible with bilateral pleural effusion, confirmed by chest radiography. Laboratory analysis showed anemia and mild eosinophilia (Hgb 10.5 g/dL, 500 eos/μL), elevated CRP (4.56 mg/dL) and D-dimers (4,694 μg/L), almost normal ESR (21 mm/H). Gasimetry revealed respiratory alkalosis. Thoracic angio-CT excluded PTE and relevant parenchymal changes. Diagnostic thoracentesis showed cloudy yellow fluid, exudate, with predominance of polymorphonuclear cells, 62% eosinophils, and negative bacteriological, mycobacteriological and cytological study. Pleural biopsy was performed by medical thoracoscopy, which revealed pleuritis with angiogenesis and macrophagic infiltration. Bronchoscopy was normal. Abdominal CT scan revealed moderate volume ascites, increased density and thickening of mesenteric tissue with intercalated nodules and two lymph nodes with about 4 mm of short axis. PET/CT, endoscopic digestive study and gynecological evaluation excluded the presence of malignancy. Septic screening was negative and there was no improvement with empirical antibiotics. The

autoimmune study and echocardiogram were also normal. After exclusion of neoplastic, infectious and autoimmune pathology and review of CT images by a radiologist, the hypothesis of mesenteric panniculitis was raised. Corticosteroid therapy with intravenous methylprednisolone 40 mg/day was introduced, with significant clinical improvement. The patient completed 3 months of deflazacorte at home, in a weaning scheme, with resolution of symptoms, pleural effusion and abdominal CT. During follow-up there were no recurrence of symptoms.
Discussion: In this clinical case, the presence of eosinophilic pleural effusion was the first clue for an extensive diagnostic investigation. The importance of excluding malignancy is emphasized since it can be associated with either pleural effusion or mesenteric panniculitis. This case is presented due to the rarity of presentation and the diagnostic challenge it represented, highlighting the importance of a multidisciplinary assessment.

Keywords: *Eosinophilic pleural effusion. Mesenteric panniculitis.*

PC 077. PRIMARY PLEURAL SYNOVIAL SARCOMA: A RAPIDLY PROGRESSIVE ENTITY ASSOCIATED WITH COMPLICATED PLEURAL EFFUSION

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Introduction: Acidosis of the pleural fluid directs the diagnostic hypotheses of a pleural effusion under study for empyema, complicated parapneumonic effusion, esophageal perforation, tuberculosis or malignancy.
Case report: 67-year-old man admitted with pain on his left hemithorax/hypochondrium and emetic cough. A left pleural effusion of unknown etiology was found. He had metabolic syndrome, chronic kidney disease, chronic obstructive pulmonary disease of smoking etiology and exposure to asbestos. Thoracentesis revealed pleural fluid compatible with exudate and pH < 6.80, so a chest drain was placed and broad-spectrum antibiotics were initiated. Chest computed tomography showed diffuse thickening of the left pleura and a nodular lesion of obtuse angles in the left upper lobe, suggesting pleural origin. An increase in the tumor markers Neuron Specific Enolase and Cyfra 21.1 was highlighted. Transthoracic biopsy deemed possible adenocarcinoma of extrapulmonary origin. The patient maintained a gradual clinical worsening, requiring daily pleural lavages. Microbiological exams were sterile, except for a blood culture with the isolation of multi-resistant Klebsiella pneumoniae, assumed in the context of late nosocomial pneumonia. The case was discussed with the Thoracic Surgery team, considering the hypothesis of pleural mesothelioma. The patient underwent video-assisted thoracoscopy, where signs of pleural carcinomatosis were observed, with biopsy of large stony pleural masses. A fusiform cell neoplasia, immunoreactive for B Cell Lymphoma-2 (bcl-2) compatible with biphasic synovial sarcoma was identified. The t(X;18) translocation was not identified in the genetic study. Positron emission tomography (PET-CT) showed extensive left pleuro-pulmonary infiltration, with extension to the homolateral chest wall, without extrathoracic foci. The patient had a prolonged hospital stay of 81 days, in which the need to stabilize his comorbidities prevailed. Due to the extent of the disease and his performance status, he had indication for palliative radiotherapy and chemotherapy. The patient, along with his family, refused admission to a Palliative Care Unit. He was discharged from the hospital, with optimized analgesia and palliative oxygen therapy, and died at home with his family.
Discussion: Primary pleural synovial sarcoma is a malignant disease that represents less than 0.5-1% of all pleuro-pulmonary neoplasms. It occurs mainly in adolescents and young adults. Primary synovial sarcoma of the pleura, with extension to the chest wall, in a sexagenarian patient is extremely rare. Less than ten cases of synovial sarcomas involving the chest wall are described. Chromosomal translocation t(X;18) is associated with more than 90% of cases, which was not found in this patient. The ideal treatment for synovial pleural sarcoma has not yet been established. Multimodal therapy including surgery, chemotherapy and radiotherapy has been used. Radical surgical resection is the standard option, similar to that used for other soft tissue sarcomas. Adjuvant radiotherapy is generally recommended after incomplete resection. The patient presented three factors that adversely affected survival: tumor size greater than 10 centimeters, incomplete resection and impossibility of adjuvant therapy. The importance of optimizing the hospital-home bridge is emphasized, in order to provide the best end-of-life care for patients with rapidly progressive neoplasms and low survival expectancy.

Keywords: *Synovial sarcoma. Pleural effusion. Acidoses in pleural fluid.*

PC 078. INAUGURAL PLEURAL EFFUSION IN RENAL CELL CARCINOMA - AN UNUSUAL CASE

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Introduction: Renal cell carcinoma (RCC) presents in 30% of the patients with advanced, metastatic disease, often reaching the lung. Pleural metastases are unusual, and most frequently secondary to pulmonary involvement, by hematogenous dissemination. Isolated pleural metastases are extremely rare and can be associated with venous spreading through Batson Plexus. Pleural effusion (PE) cytology is essential during the investigation of exudates, since the majority have malignant origin. However, it has low diagnostic sensitivity (60%), slightly higher with a second sample. The diagnostic yield of closed pleural needle biopsies is only 40%, since pleural lesions tend to be located in the costo-phrenic sinus and diaphragm. Despite the combination of these two procedures, about 20% of pleural effusions remain undiagnosed. In malignant effusions, medical thoracoscopy has a diagnostic yield greater than 90%.
Case report: A 67-year-old man presented to the emergency department with dry cough, pleuritic pain and dyspnoea, during the prior week. He denied other respiratory or urinary symptoms. Physical examination showed decreased breath sounds on the right side of the chest. The laboratory panel showed increased CRP and the arterial blood gas, mild hypoxemia. Chest X-ray showed a massive right-sided pleural effusion, confirmed by thoracic ultrasonography witch also identified a suspicious pleural nodule. Thoracentesis was performed with drainage of 1,500 mL of citrus exudative PE. Cytology contained high cellularity, with polymorphonuclear predominance and absence of malignant cells. Semiflexible medical thoracoscopy was performed under local anesthesia and revealed multiple white implants covering the parietal pleura, which were biopsied, and small vegetative lesions on the visceral pleura. The histological analysis revealed infiltration by malignant epithelial neoplasia, with an immunohistochemical study consistent with metastatic RCC. Bronchofibroscopy showed a necrotized endobronchial lesion, occluding the intermediate segment. Its histological study was unspecific and the bronchial aspirate showed no neoplastic cells. Finally the CT-scan showed several right pleural nodular lesions, mainly located in the base; endobronchial lesion in the right inferior lobar bronchus; and heterogeneous mass in the left kidney. He was transferred to the urology department and began systemic therapy with sunitinib.
Discussion: The inaugural presentation of renal cell carcinoma with pleural effusion, as in the present case, is extremely uncommon and the cytological study is often inconclusive. Medical thoracoscopy presents high diagnostic performance in the study of exudate pleu-

ral effusions, and should therefore be considered in the initial approach of a pleural effusion with unknown etiology.

Keywords: *Medical thoracoscopy. Renal cell carcinoma. Pleural effusion.*

PC 079. SPONTANEOUS PNEUMOTHORAX AFTER CHEMOTHERAPY FOR HODGKIN LYMPHOMA

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Introduction: Pneumothorax is a rare complication of chemotherapy with a reported incidence in literature of less than 1% and is commonly associated with chemosensitive tumours (such as germ-cell tumours, lymphomas and sarcoma). Usually occur 2-7 days after chemotherapy and can be unilateral or bilateral. The mechanism of development of pneumothorax is not clearly understood yet. Young age, Hodgkin Lymphoma and radiotherapy are predisposing factors. Management requires rapid placement of chest tube that leads to some authors suggesting the inclusion of this entity amongst oncologic emergencies.
Case report: A 36-years-old woman was sent to the emergency department, transferred from the residence´s area hospital, with mediastinal tumefaction, axillary adenopathy and dyspnea with two months evolution. She was a puerperal woman with dystocic delivery by cesarean section 2 weeks before and since then she reported night sweating and marked asthenia. She was in smoking cessation during pregnancy and had history of gestational diabetes. From the study performed at the hospital of origin, there was a homogeneous opacity of the left pulmonary field compatible with large pleural effusion with pulmonary collapse and contralateral deviation of the mediastinum and probably adenopathic mass in the superior mediastinum. The histology of the excisional biopsy of left axillary adenopathies diagnosed Nodular Sclerosis Classical Hodgkin lymphoma. She was submitted to diagnostic and evacuator thoracentesis that revealed the pleural effusion was an exudate, with cloudy aspect, negative microbiology and immunophenotyping compatible with previous diagnosis. She was admited at Hematology service for staging and therapeutic approach. She underwent a FDG PET Scan for staging that was compatible with a high metabolic grade lymphoma, with supra and infra-diaphragmatic ganglionar involvement, with mediastinal bulky mass and pleural, pericardial and peritoneal effusion. It was an IVB stage, for which reason she started chemotherapy with an ABVD scheme (Doxorubicin, Bleomycin, Vinblastine and Dacarbazine). Due to recurrence of left pleural effusion, she was submited to thoracostomy with underwater seal drainage. During the first week under chest drainage, she presented a good evolution and kept daily drainages. On the 3rd day of the second half of the first cycle of the ABVD scheme, the radiological control showed a hydropneumothorax, so aspiration was placed in the chest drainage system. The radiological control also made it possible to identify a reduction in the dimensions of the mediastinal mass. After more than 2 weeks of drainage, there was almost complete resolution of the pneumothorax and vigilance and relative rest were maintained, with stability even 5 days later when the next chemotherapy cycle was started.
Discussion: There are some case series of pneumothorax after cytoreductive chemotherapy. Considering the evolution and the exclusion of other causes for hydropneumothorax, this was assumed to be a complication of chemotherapy. Despite the rarity of this entity, the evolution was favorable, probably due to the rapid therapeutic approach. This case serves to alert to this rare but possible adverse effect of chemotherapy. Treatment is directed at pulmonary re-expansion.

Keywords: *Pneumothorax. Chemotherapy.*

PC 080. ETIOLOGY OF PLEURAL EFFUSION - CASE SERIES OF A TERTIARY REFERENCE CENTER

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Introduction: The etiology of pleural effusion can cover a wide number of causes, including both benign and malignant pathologies. The main conditions associated with pleural effusion are congestive heart failure, pneumonia, cancer and pulmonary embolism. During the etiological study of the pleural fluid, the identification or exclusion of these causes is of great importance, in order to allow a correct and timely clinical and therapeutic orientation.
Objectives: To identify the main etiologies of pleural effusion, in a large Central Hospital, over a period of four months.
Methods: Clinical and laboratory data were collected from patients with pleural effusion, who underwent diagnostic/evacuating thoracentesis, placement of a chest tube or medical thoracoscopy, at the Pneumological Techniques Unit. Data were for the period from 01-04-2019 to 31-07-2019.
Results: 47 patients were included, with a median age of 77 years. 25/47 of the patients were female. 12/47 performed diagnostic thoracentesis, and in 17/47 evacuated thoracentesis was performed concomitantly and in 14/47 a chest tube was placed; in the remaining 4/47, the collection was performed during medical thoracoscopy. 41/47 revealed to be exudates; in the 6 transudates the etiology was cardiac and hepatic. The effusion associated with malignant pathology was found on 28/47. On 12/28, the cell block and immunohistochemical study of the pleural fluid, contributed to establish the inaugural diagnosis of malignant pathology: 7/12 with a profile compatible with pleural involvement by lung adenocarcinoma, in 3/12 due to lymphoproliferative disease and in 2/12 for ovarian carcinoma. In one case, the study of pleural fluid did not allow the diagnosis of lung cancer to be established, which was carried out in the course of performing a transthoracic lung biopsy. In the remaining cases, there was an association with previous malignant pathology underlying the pleural effusion: 5/16 breast carcinoma, 5/16 hematological disease, 2/16 adrenal carcinoma, 2/16 endometrial carcinoma, 1/16 hepatocellular carcinoma and parotid carcinoma. On 13/16, chemical pleurodesis was performed. With regard to the non-malignant etiology, 6/18 were associated with heart failure, 4/18 chronic kidney disease under hemodyalisis, 3/18 meta-pneumonic etiology, 2/18 post-traumatic etiology, 1/18 associated with post traumatic etiology, sarcoidosis, cardiac amyloidosis and acute pancreatitis. In the cultural exams, no germs were identified in any of the samples.
Conclusions: The study of pleural effusion is of great importance in terms of its etiological clarification and therapeutic guidance, since in most cases it establishes the diagnosis or identifies the underlying pathology. The high median age of the patients included may justify the significant number of malignant pathologies found.

Keywords: *Pleural effusion. Thoracentesis. Thoracoscopy. Exudate. Immunophenotyping.*

PC 081. A RARE FORM OF PRESENTATION OF MALIGNANT MELANOMA

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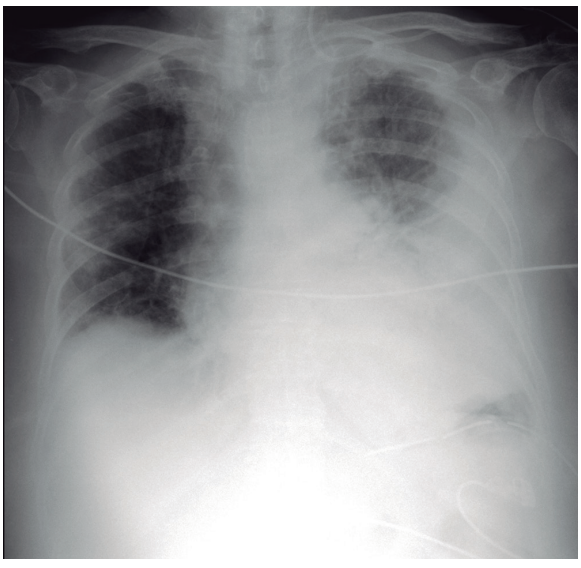
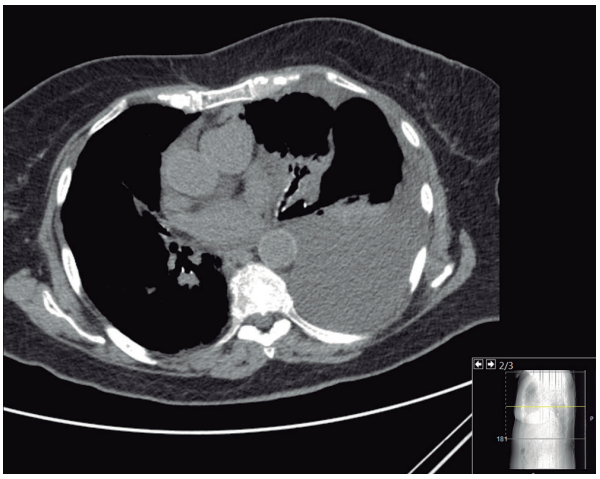
Introduction: Melanoma is a malignant tumor and its incidence has been continuously increasing worldwide when compared to other neoplasms. It commonly originates from the skin and less frequently from the retina, digestive tract, liver, upper respiratory tract, lung, urethra, and prostate. Although pleural metastasis of melano-

mas from the skin can occur, primary pleural melanoma is an extremely rare neoplasm, only described in nine cases. There are no established diagnostic criteria for primary pleural melanoma, however, Jensen and Egedorf proposed six criteria for primary pulmonary melanoma that may be appropriate.

Case report: An 82-year-old female, non-smoker, retired (cook), diagnosed with idiopathic NSIP under mycophenolate mofetil, with no personal history of melanoma, goes to the emergency department for precordial pain and back pain with three days of evolution, dry cough, and dyspnea. On physical examination, she was hemodynamically stable, apyretic, with no signs of respiratory distress, with pulmonary auscultation showing abolished vesicular murmur in the lower-left portion and inspiratory crackles predominantly on the right. No suspicious skin or eye changes have been documented. Of the complementary diagnostic tests, PCR was 4.98 mg/dL, no alterations in renal function were observed, NTproBNP was 173 pg/mL; arterial blood gas analysis (FiO2 21%) with hypoxemia and chest X-ray showing hypotransparency in the lower-left portion, delimited by an upper concavity line, compatible with pleural effusion. She was admitted to the pulmonology department, with a pleural effusion of undetermined etiology and suspicion of pneumonia in an immunocompromised patient, for which empirical antibiotic therapy with piperacillin/tazobactam was started, with no documented isolations in cultural exams. Computed axial tomography of the chest and abdomen showed a large left pleural effusion, adenopathy in group 7 with 15 mm, and areas of consolidation with air bronchogram. Bronchofibroscopy showed evidence of extrinsic compression in the left lower lobar bronchus. She underwent four thoracentesis during diagnostic and due to recurrence of the pleural effusion, however, the pleural biopsies were not conclusive. Pleural fluid was suspected of neoplasia, however, the sample had low cellularity. It was proposed for pleural biopsy and pleurodesis by VATS documenting thickened pleura, aspiration of sero-hematic content from the pleural locus, and observation of intra-pleural encephaloid type content in posterior basal topography that was sent for pathological anatomy. She was transferred to the intensive care unit due to hemodynamic instability and acute partial respiratory failure, consistent with a nosocomial respiratory infection, and started meropenem and linezolid. After being transferred to the intermediate care unit, under high-flow nasal oxygen therapy, there was a progressive clinical worsening, with the patient dying after forty days of hospitalization. The anatomopathological result of the intrapleural tumor and pleural biopsies was compatible with malignant melanoma. Extrathoracic involvement was not documented, and the hypothesis of primary pleural malignant melanoma was considered.





Discussion: This clinical case reports an extremely rare presentation of malignant melanoma with primary pleural involvement. Although it may be difficult to distinguish primary or metastatic pleural melanoma, the patient had five of the six criteria by Jensen and Egedorf. The prognosis of this pathology is reserved.

Keywords: *Primary malignant melanoma. Pleural effusion.*

PC 082. PANCREATOPLEURAL FISTULA - AN UNUSUAL CAUSE OF PLEURAL EFFUSION

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Introduction: Pleural effusion (PE) is a common clinical condition associated with numerous pulmonary, pleural or extra-pulmonary pathologies. Clinical semiology, imaging characteristics of PE and analysis of pleural fluid contribute to the etiological diagnosis in 75% of cases. In other situations, the differential diagnosis may become more challenging with the need for other complementary means of diagnosis or biopsy.

Case report: The authors present a case of a male patient, 71 years old, with active smoking and alcoholics habits, previous occupational exposure to asbestos in shipbuilding for about 25 years and with previous diagnosis of obstructive pulmonary disease chronic, obstructive sleep apnea syndrome and chronic pancreatitis of alcoholic etiology. The patient went to the emergency department with a condition characterized by progressive worsening dyspnea along 10 days and tiredness for medium efforts. He denied fever, chest pain or abdominal complaints. The objective examination revealed dyspnea, with peripheral saturations between 90-92%, and decreased breath sounds in the left hemithorax on pulmonary auscultation, without other major changes. Complementary diagnostic tests included chest X-ray, which demonstrated a bilateral PE with greater extension on the left and, in the laboratory evaluation, there was a slight increase in inflammatory markers. Thus, it was decided to admit the patient to the etiological investigation of pleural effusion. During hospitalization, diagnostic and evacuating thoracentesis was performed on the left side, whose analysis of the pleural fluid revealed exudate characteristics, highlighting the considerable increase in amylase levels. Tumor markers were investigated and chest CT was also performed to exclude lung cancer, given the patient's history of long-term exposure to asbestos and active smoking. For further investigation and due to recurrent pleural effusion to thoracentesis, an abdominal CT scan revealed the presence of acute necrotizing pancreatitis complicated by pancreaticopleural fistula, confirmed by Magnetic Resonance Imaging. As

a conservative medical treatment, he was given therapy with octreotide, a proton pump inhibitor and enteral nutrition, as well as other supportive measures, presenting a favorable clinical evolution over about 1 month of hospitalization. After hospital discharge, the patient was followed up by every 2 months with analysis and image exams, presenting gradual clinical, analytical and imaging stabilization in total of 5 to 6 months until then.
Discussion: This case reflected a rare cause of Pleural effusion, with an atypical presentation of complicated pancreatitis of pancreaticopleural fistula, noting the absence of gastrointestinal symptoms and signs. This entity is associated with extensive, unilateral and recurrent pleural effusions. The therapeutic approach includes conservative, endoscopic or surgical treatment, and often requires multidisciplinary teams for a personalized therapeutic decision.

***Keywords**: Pleural effusion. Pancreatic-pleural fistula. Thoracentesis. Pleural fluid. Conservative treatment.*

PC 083. REEXPANSION PULMONARY EDEMA – A RARE SEQUENCE OF 3 CLINICAL CASES

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Introduction: Reexpansion pulmonary edema (RPE) is a rare complication that can arise after treatment of secondary pulmonary collapse due to pleural effusion, pneumothorax or atelectasis. The authors present a rare sequence of three cases of RPE diagnosed in an emergency context during SARS-CoV2 pandemic phase.
Case reports: Case 1: Male, 25 years old, active smoker of cigarettes and cannabinoids. Admitted in emergency department (ER) due to dyspnea and right chest pain with 6 days of evolution, followed by palpitations, dry cough and isolated fever peak. Hypertensive pneumothorax was diagnosed (left side) and treated with oxygen therapy and placement of a chest tube (passive drainage). Chest X-ray and control ultrasound shown complete expansion. One hour after the procedure, patient starts tachycardia, dry cough, and severe respiratory failure, unresponsive to oxygen therapy. Chest ultrasound with B lines and chest X-ray with scattered alveolar opacities in the left. RPE was assumed and treatment with CPAP + oxygen therapy was initiated. After clinical stability, he was transferred to intermediate care unit, where he was removed from treatment with positive pressure and oxygen therapy, followed by the patient going into acute respiratory failure, needing orotracheal intubation and invasive mechanical ventilation (IMV). Case 2: Male, 34 years old, non-smoker, admitted in ER for tiredness and right chest pain with 3 days of evolution. Diagnosis of total pneumothorax (right-side) was made. Oxygen therapy and chest tube placement (passive drainage) were initiated, with complete expansion in control chest X-rays. Two hours after the procedure, he developed agitation, anxiety and right chest pain, so he was medicated with benzodiazepine and analgesia which resulted in improvement. Control X-ray shown small apical pneumothorax and alveolar opacities in the right pulmonary field. It was assumed that the diagnosis was RPE and the patient was admitted to the Pulmonology Service, where there was a progressive clinical deterioration, with the need of 60% FiO2 for 95% of SPO2. Case 3: Male, 53 years old, obese, smoker, with multiple cardiovascular comorbidities and alcoholic liver disease. Sent to ER due to dyspne, cough and increased abdominal circumference with 1 month of evolution and progressive worsening. In ER he was diagnosed and treated for acute pulmonary edema. Also noted a large pleural effusion (right side), treated with paracentesis and thoracentesis (total of 4,500 ml). Three hours after the procedure, there was a progressive worsening with dyspnea and severe respiratory failure. Chest X-ray was repeated, which showed apicocaudal alveolar opacities (left side). Pulmonologist's opinion was requested and the diagnosis of RPE was assumed, with the need for progressively higher FiO2 and later escalation to CPAP and then BiPAP. All patients ended up needing admission to the Intensive Care Unit. Patient 1 needed IMV and surgical correction of the pneumothorax, while patient 2 completed a 3-day stay in the unit, without the need for IMV. The patient in case 3, even under IMV and aminergic support, died in the unit.
Discussion: EPR is a rare clinical entity, but the recognition is essential for early diagnosis, prevention and timely treatment.

***Keywords**: Pulmonary edema. Reexpansion. Pneumothorax. Pleral effusion.*

PC 084. FROM THE ULTRASOUND SCREEN TO THE FINDINGS OF THE MEDICAL THORACOSCOPY

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Introduction: Medical thoracoscopy (MT) is a well-established technique for diagnosing and treating pleural disease. Thoracic ultrasound has, in recent years, gained prominence in pneumology and its applicability in the study of the pleural cavity has already been proven. Recent publications argue that the patient should always be evaluated with thoracic ultrasound prior to MT. With the ultrasound assessment, it is possible to characterize the pleural effusion in more detail, identifying septations or loculations, estimating the volume of the effusion, and studying the distribution of the fluid with the patient in the position he will assume during the procedure. Thus, ultrasound assists in the decision of which is the best site for the approach to the pleural cavity - the safest and the one that allows, more easily, to explore the entire pleural cavity. Additionally, with ultrasound is often possible to visualize small pleural nodular lesions that are difficult to identify on radiography or even on chest CT, and this information can guide a technique that aims to perform biopsies for diagnostic purposes.
Case reports: Here we present two cases in which the use of chest ultrasound helped in the diagnostic workout, providing information of great value. These are also two evident examples of the parallelism that can be established between the two techniques, observing in thoracoscopy the direct translation of the previously identified echographic findings. Case 1: An 84-year-old man, with no history of exposure to pneumotoxic agents, presented with pleuritic chest pain and worsening dyspnea. Chest radiography showed moderate volume pleural effusion, without other evident abnormalities. Complementary chest ultrasound demonstrated a large free pleural effusion, with internal echoes, and with a prominent multilobulated pleural mass in the costophrenic angle. MT was performed and documented a large, multilobulated necrotic pleural mass, with morphology and location overlapping the echographically assessed. Case 2: 56-year-old man, smoker of 45 UMA, construction worker, presented with complaints of dyspnea limiting his work activity. Pulmonary auscultation revealed a marked decrease in breath sounds at the right lung base. Chest radiography showed a large volume pleural effusion, without other major changes. A chest ultrasound was performed showing free, large-volume, pleural effusion, with no internal echoes, and identifying a well-defined nodule and thickening foci in the diaphragmatic pleura. MT was performed and documented, in the diaphragmatic pleura, in a location consistent with the echographic findings, a larger pleural nodule, associated with diffuse thickening and micronodularities of the diaphragmatic pleura and at the level of the costophrenic angle.
Discussion: When assessing a pleural effusion of unknown etiology, thoracic ultrasound provides data with a relevant impact on the diagnostic process, complementing the information provided by

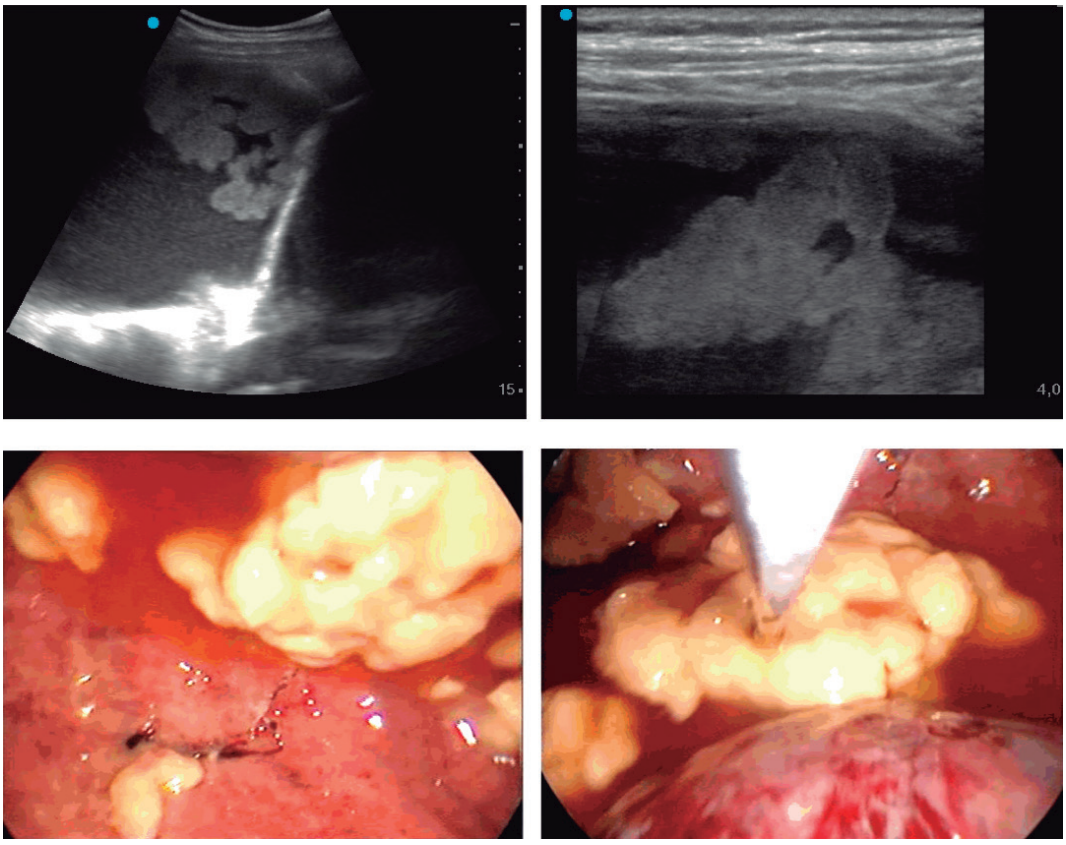

Figure PC 084A

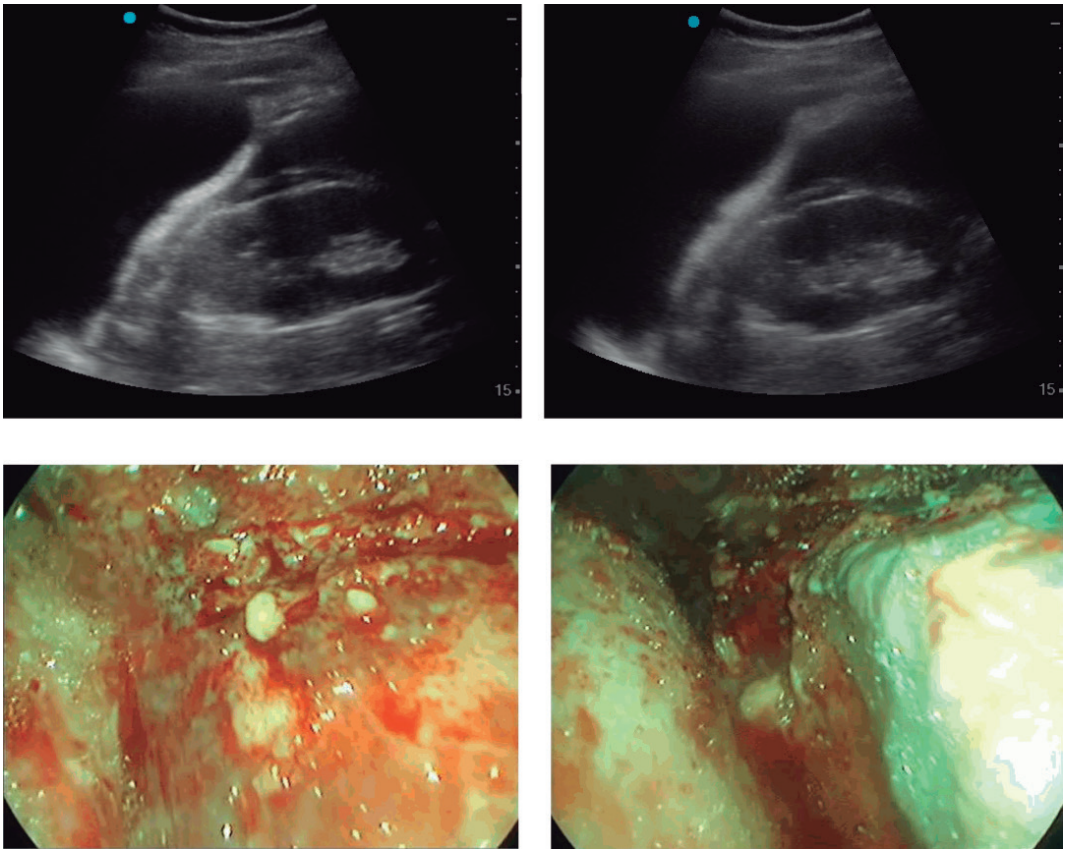

Figure PC 084B

chest CT that is widely used in the study of patients with pleuropathy. These cases reflect the yield of this echographic evaluation, reflecting the transposition of images from the ultrasound screen to the findings of thoracoscopy.

***Keywords**: Thoracic ultrasound. Medical thoracoscopy. Pleural disease.*

PC 085. ENDOBRONCHIAL TUMOURS IN THE PAEDIATRIC POPULATION: THE ROLE OF BRONCHOSCOPY

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Introduction: Tracheobronchial tumours are extremely rare in the paediatric population, accounting for 0.2% of all cancers in this range of age. Because of their low prevalence in this age and the absence of specific signs and symptoms, tracheobronchial tumours are often not suspected or misdiagnosed.
Case reports: Case 1: Twelve-year-old child, with a previous history of prematurity and obliterans bronchiolitis associated with adenovirus (pulmonary function test (PFT) (01.2018) FVC 54.7% and FEV1 43%)). The patient was diagnosed with a community acquired pneumonia with clinical resolution with antibiotics in 03.2018. After this event, he complained of aggravating exertional dyspnoea for a year. PFTs revealed a worsening of lung spirometric values (FVC 38% and FEV1 22%). Chest x-ray showed a consolidation of the middle third of the right hemithorax. Posteriorly, a low-dose thoracic computer tomography (CT) demonstrated an endobronchial lesion occluding the intermediate bronchus associated with partial segmental collapse and a diffuse mosaic attenuation pattern. Rigid bronchoscopy revealed a lobulated, vascularized, obstructive lesion of the intermediate bronchus. It was submitted to mechanical debulking and laser fotocoagulation with recuperation of bronchial patency. After the procedure, symptomatic and a lung function improvement were seen. The biopsy yielded a positive result for low grade mucoepidermoid carcinoma. The PET-CT revealed no distance metastasis. The case was discussed in the multidisciplinary meeting (MDT) and, because of its lung function, the patient was not a candidate for surgical treatment and it should be revaluated this treatment option with growth and probable increase in lung function. After also discussing other therapeutic options with a paediatric oncological reference centre in Paris, it was decided surveillance with periodic bronchoscopy for identification of local recurrence. Posteriorly, there was the need of perform laser fotocoagulation for suspected recurrence in two of three endoscopic revaluations. To date, thoracic and abdominal CT did not reveal signs of local or distance disease progression. Case 2: Ten-year-old child with a previous history of allergic asthma, was admitted for evaluation and treatment of 1-year history of recurrent pneumonia/respiratory infections. Chest X-ray showed an apparent right lower lobe collapse. CT scan demonstrated endobronchial lesion, with contrast enhancement immediately after the apical segment of the right lower bronchus associated with lung collapse. Bronchoscopy revealed an ovoid and vascularized lesion occluding the entrance of the right basal pyramid. It was submitted to mechanical debulking and laser fotocoagulation with existing of mucopurulent material and recuperation of bronchial patency. The procedure was complicated with mild haemorrhage, controlled with cold saline. Biopsy resulted in a typical carcinoid tumour. After the MDT, the patient was proposed for surgical treatment.
Discussion: These clinical cases demonstrate the importance of a high clinical suspicion for the diagnosis of endobronchial tumours in case of recurrent infections or aggravating lung function in the paediatric population. The bronchoscopy is a fundamental and safe procedure for the diagnosis, treatment and surveillance of tracheobronchial tumours. Accordingly to the literature, the lesion debulking may have an important role in the patient symptomatic improvement, as a bridge for other treatments and in patients with no clinical conditions for definitive treatments.

***Keywords**: Bronchoscopy pediatrics. Endobronchial tumours.*

PC 086. USEFULL ON-SITE MACROSCOPIC QUANTITATIVE EVALUATION OF EBUS-TBNA SAMPLES

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Introduction: Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is a minimally invasive diagnostic test with a high diagnostic yield. In this procedure, abundance of material and optimal specimen acquisition are key. Rapid on-site cytology examination (ROSE) during EBUS-TBNA is generally not recommended, however, in an attempt to provide immediate feedback to the operator, the intervention pneumology team of IPO Coimbra started to classify macroscopically every lymph node sample in terms of abundance. The main objective of this study was to clarify whether this on-site macroscopic evaluation of EBUS sample abundance was related to histology results, namely diagnostic samples or lymph node representativeness and herefore any helpfull for clinical practise.
Methods: Retrospective study of patients undergoing EBUS-TBNA in the year of 2018. Patient demographic variables, procedure variables and histologic reports were analised. Macroscopic evaluation of material abundance in EBUS reports was described in four categories “Insufficient”, “Sufficient”, “Good” and “Excellent”. Histological evaluation of samples was divided in three categories according to histologic reports: “Inadequate”, “Dubious” and “Adequate/Diagnostic”. Statistical analises was made by SPSS.
Results and conclusions: 134 EBUS-TBNA were conducted in the year of 2018, only 121 procedures were included, corresponding to 117 patients. From a total of 288 lymph node stations sampled, 202 were classified as “Excellent”, 55 as “Good”, 22 as “Sufficient” and 9 as “Insufficient”. Adequate/diagnostic histological results were present in 11.1% of “Insufficient” samples, 40.9% “Sufficient” samples, 76.4% “Good” samples and 88.1% of “Excellent” samples. This was a statistically significant and therefore of high clinical importance since it is a fast, cheap and easy method that gives immediate feedback to the operator. This evaluation immediate macroscopic evaluation should influence the procedure, namely, obtainnig additional passes trying to achieve na “Excellent” sample and thereby potentially lowering nondiagnostic rates.

***Keywords**: EBUS-TBNA. On-site quantitative macroscopic evaluation. Rose.*

PC 087. ICU OUTCOMES OF PULMONARY EMBOLISM: A RETROSPECTIVE ANALYSIS OF 10 YEARS

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Introduction: Pulmonary embolism (PE) remains an important cause of mortality. Patients classified as intermediate-risk or high-risk often require intensive care unit (ICU) admission.
Objectives: Describe PE admissions in the ICU; identify possible factors associated with poor outcomes.
Methods: Retrospective analysis of medical records of patients diagnosed with intermediate-risk or high-risk PE between 2010-2019.
Results: We included 101 patients, of which 33.7% were males, with a mean age of 61.1 ± 1.81 years. Moderate or strong predisposing factors for PE were found in 58.6% of the patients; the most common were congestive heart failure/atrial fibrillation (n = 15), fracture/orthopaedic surgery (n = 10) and neoplasia (n = 10). Forty

patients (39.6%) were obese, and a quarter had diabetes and chronic pulmonary disease. At admission, 81.5% of the patients were hypoxemic and 23 required mechanical ventilation (MV). Vasopressors were needed in 25.7%. Almost half (45.5%) of the patients were classified as high-risk; of those, 67.4% received thrombolytic therapy. Median APACHE II and SAPS II scores were 12 and 30, respectively, and both were significantly higher in non-survival patients ($p < 0.001$; $p = 0.001$). The median ICU stay was 2 days (1.5 days for non-survivals), and hospital stay was 13 days (4 days for non-survivals). Mortality rate was 11.9% (21.7% in high-risk patients). The need of invasive MV ($p < 0.001$), vasopressors ($p < 0.001$), higher lactate values ($p = 0.009$) and shorter ICU ($p = 0.005$) and hospital ($p = 0.001$) stays were associated with increased mortality.
Conclusions: Hemodynamic instability, refractory hypoxemia and high lactate values seem to be predictors of poor outcomes in PE. Mortality was higher in the first days after ICU admission.

Keywords: *ICU. PE.*

PC 088. OUTCOMES OF THORACIC TRAUMA AND CORRELATION OF C-REACTIVE PROTEIN TO TRAUMA SEVERITY

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Introduction: Trauma is a leading cause of morbidity and mortality.
Objectives: To correlate thoracic trauma with inflammation status and outcomes.
Methods: We performed a retrospective analysis of adult patients with thoracic trauma admitted to our Intensive Care Unit (ICU) between 2016-2019. For statistical analysis we used SPSS® 25. Exclusion criteria: period trauma-admission > 72h and trauma-death < 72h. Thirty-eight patients were included (82% male, mean age of 50 (SD ± 20)), most had blunt trauma (92%). The causes were: road accident (53%), fall (32%) and others (15%). The median thorax Abbreviated Injury Scale (t-AIS) was 3 (1-5), the median Emergency Trauma Score (EMTRAS) was 2 (0-9) and 8 patients had haemorrhagic shock. The ICU mortality was 5.3%.
Results: The types of radiological thoracic injury were: contusion (39%), atelectasis (37%) and flail chest (18%). Flail chest was associated with more invasive ventilation (IMV) days (median 17 (IQ95 9-24) vs 5 (IQ95 2-13), U 11, p 0.009) and longer ICU length of stay (ICU-LOS) (median 13 (IQ95 9-24) vs. 6 (IQ95 5-12) days, U 66.5, p 0.01). Atelectasis was associated with more IMV days (median 12 (IQ95 7-22) vs 5 (IQ95 2-10), U 22, p 0.009). We analysed the association of the severity of trauma with the highest C-reactive protein (CRP) value of the first 4 days (mean 189 mg/L, SD ± 102). Microbiological isolates were found in 24% of patients with a mean CRP of 286 mg/L (SD ± 114) which was higher (t (36) = -3.88, $p < 0.001$) than the rest (CRP of 158 mg/L, SD ± 76). CRP correlated with t-AIS (r (36) = 0.40, p 0.012) and pO2/FiO2 ratio (r (36) = -0.60, $p < 0.001$).
Conclusions: We highlight the impact of the type of thoracic injury on the outcomes and how CRP is related to the trauma severity.

Keywords: *Thoracic trauma. Intensive care. Reactive C protein.*

PC 089. MAJOR PULMONARY SURGERY IN PATIENTS WITH COMPROMISED LUNG FUNCTION

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Introduction: The risk stratification of lung resection is fundamentally based on the results of pulmonary function tests. In patients considered to be at risk, major surgery is generally denied, opting for potentially less curative therapies.
Objectives: To evaluate the postoperative outcomes of major lung surgery in a group of patients deemed high risk.
Methods: We performed a retrospective review of clinical records of all patients submitted to lobectomy, bilobectomy or pneumonectomy in a 3-year period in a reference thoracic surgery unit. The patients were then divided in two groups: group A composed of patients with normal preoperative pulmonary function and group B included patients with impaired lung function, defined as forced expiratory volume in the first second (FEV1) and/or diffusion capacity for carbon monoxide (DLCO) ≤ 60%.
Results: A total of 234 patients were included, 181 (77.4%) in group A and 53 (22.6%) in group B. In group B, patients were younger, had more smoking habits, were more often associated with chronic obstructive pulmonary disease (COPD), when the surgery was motivated by primary lung cancer this group had a more advanced clinical stage of the disease. Patients in group B were also more frequently submitted to thoracotomy. In the postoperative period, patients in group B had longer hospital stay, longer chest drainage time and greater need for oxygen therapy at home, however, no statistically significant difference was noted in morbidity or mortality.
Conclusions: Major thoracic surgery can be safely performed in select patients considered to be high risk for resection by pulmonary function tests. A potentially curative surgery should not be denied based on respiratory function tests alone.

Keywords: *Pulmonary function tests. Impaired lung function. Surgical risk. Thoracic surgery. Lobectomy. Bilobectomy. Pneumonectomy.*

PC 090. THORACIC SURGERY IN PATIENTS WITH CHRONIC PULMONARY ASPERGILOSIS

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Introduction: Pulmonary aspergillosis is caused by infection by the fungus from Aspergillus spp, which is clinically divided in subgroups. Chronic pulmonary aspergillosis is characterized by nodular or cavitary lesions with 3 months duration in non-immunosuppressed patients with confirmed aspergillus infection. Aspergillomas are single lesions with no or mild symptoms with no progression over a 3 month period. Surgical treatment is an individualized option and, given the rate of other comorbidities, surgical conditions need to be carefully taken into account.
Objectives and methods: A retrospective cohort analysis was performed including all patients with histological aspergillosis diagnosis submitted to thoracic surgery between August 2010 and August 2020 at Centro Hospital Universitário de São João. The main aim, despite patient characterization, is to assess the early surgical results and after 1 year follow-up.
Results: In the 10 year period, 25 patients were submitted to surgery due to chronic aspergillosis - 12 patients (48.0%) with aspergilloma, 8 (32.0%) with chronic pulmonary aspergillosis, 3 (12.0%) with sub-acute invasive aspergillosis and 2 (8.0%) with chronic cavitary pulmonary aspergillosis. Seventeen (68.0%) were male, with a mean age of 48.2 ± 12.2 years. The main presenting symptoms were hemoptysis or hemoptoic spumtum in 12 patients (48.0%), constitutional symptoms (n = 4, 16.0%), while 5 patients had no symptoms (20.0%). The main cause for surgery referral was hemoptysis (n = 12, 48.0%). Twelve patients (48.0%) had tuberculosis sequelae, 10 (40.0%) bronchiectasis and 7 patients had immunossupresion (3 with hematologic malignancy, 2 with diabetes, 1 with pharmacological immunosuppression and 1 with HIV). Median time from diagnosis to surgery was 9 months (0-83). Most patients were submitted to thoracotomy (n = 23; 92.0%) and the remaining to video-assisted thoracic surgery – 20 lobectomies, 5 atypical resections, with 1 patient requiring left pneumectomy. From patients undergoing lobectomy

or atypical resection, 12 did left upper lobe, 6 right superior lobe and 6 left inferior lobe surgery. Most patients had no surgical complication (n = 13, 52.0%). The most frequent complications were prolonged air leak (n = 5), nosocomial infection (n = 3). Median time at hospital was 8 days (4-98). Two patients died, 1 in the immediate post-op and another after 47 days at the hospital. Out of the patients who were previously on antifungal therapy, median time of treatment after surgery was 1 month (1-24). From the patients with recurrent immunoglobins evaluation (n = 8), only 1 had an increase of IgG of Aspergillus. There were no relapses of aspergillosis on the first year after surgery on patients who kept outpatient following.
Conclusions: Surgery should be considered on the treatment of patients with chronic pulmonary aspergillosis, presenting acceptable morbidity and mortality profiles. There were no early relapses on our sample.

Keywords: *Aspergillus. Thoracic surgery. Infection.*

PC 091. IGG4 TUMOR WITH PLEURAL EFFUSION IN THE POSTOPERATIVE PERIOD

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Introduction: IgG4-related disease (IgG4-RD) is an autoimmune fibro-inflammatory disease and isolated lung disease is a rare phenomenon. IgG4-RD is characterized by the invasion of IgG4-positive cells into various organs and sometimes is associated to increased serum IgG4. Wedge biopsy is recommended to make a definitive histological diagnosis. Variable radiological appearances have been described such as solid or ground glass lesion mimicking primary pulmonary malignancy. IgG4-RD also frequently mimic interstitial lung disease. IgG4-RD has been described in association with malignancies included lung cancer but it remains unclear whether IgG4-RD increases the risk of malignancy.
Case report: A 76-year-old male, former smoker, developed cough sometimes associated to blood-tinged sputum. The computed tomography (CT) of the chest presented an irregular mass in the left hilum (47 × 23 mm) and fibrobronchoscopy showed an extrinsic compression of apical segment of left lower lobe bronchi. The transbronchial lung biopsy was suggestive of IgG4-RD. The patients started corticotherapy. 6 months later the TC scan showed enlargement of the mass (50 × 22 mm). The positron emission tomography revealed high accumulation of FDG in the mass with the maximum standardized uptake value 4.6. The patient was discussed in a multidisciplinary group, and because of the relapse under corticotherapy he underwent a lower left lobectomy and systematic lymph node dissection. A wedge biopsy was impossible to perform because the central location of the mass in closeness to secondary carina. He was discharged after 2 days without complications. Pathological findings revealed no malignancy and confirm the diagnosis of IgG4-RD. After 2 months the patient complains about dyspnea and swelling of the surgical incision. The CT scan showed an important left pleural effusion. IgG4-RD was associated to pleural effusion and has been included as a differential diagnosis of idiopathic pleural effusions. In our patients the pleural effusion may be a consequence of a recent intervention or a relapse of DA-IgG4. The patient was re-operated but the pleural biopsy was inconclusive. After 1 month of hospital discharge, the patient was asymptomatic without any signs of relapse.
Discussion: IgG4-RD is a newly recognized condition and many questions remain unanswered: does IgG4-RD increase the risk of malignancy? What is the best treatment, the surgical indications and the best surgical procedure for these patients? The differential diagnosis between IgG4-RD and lung cancer require a wedge biopsy to make a definitive diagnosis

Keywords: *IgG4-related disease. Thoracic surgery. Lung cancer.*

PC 092. THE PERCENTAGE WAS ONLY 1%

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Case report: We presented a 56-year-old male, non-smoker, asymptomatic with a previous diagnosis of rectal adenocarcinoma in 2015 submitted to chemotherapy and radiotherapy that ended in January 2016. He started a surveillance program and in July 2019 the computed tomography (CT) of the chest showed a nodular lesion with a maximum diameter of 11 mm in the left inferior lobe. He did two transbronchial lung biopsies without enough material for a diagnosis. The positron emission tomography revealed high accumulation of FDG only in the nodule. The remaining exams were normal. The patient underwent a wedge resection and a systematic lymph node dissection performed by video assisted thoracic surgery, without any complications. Pathological findings revealed a diffuse large B cell lymphoma (DLBCL) without evidence of other lesions such carcinoma (primary or metastatic). The patient completed six cycles of chemotherapy R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone). There was no evidence of relapse after 6 months of surgery.
Discussion: Primary pulmonary lymphoma (PPL) is an extremely rare entity that represent 0.5-1% of primary malignant lung tumors and 3-4% of extranodal non-Hodgkin lymphomas. PPL refers to a heterogenous group of diseases that includes diffuse large B cell lymphoma (DLBCL). DLBCL accounts for just 10% of PPL. The diagnosis requires an anatomopathological examination (monoclonal lymphoid proliferation) and no evidence of extrathoracic lymphoma at the time of diagnosis and 3 months thereafter. Immunosuppression might be a risk factor for DLBCL development.PPL diagnosis is challenging since the symptoms are generally non-specific and radiologic findings are frequently misdiagnosed as lung abscess, primary lung cancer or lung metastasis. CT-guided needle biopsy is frequently inconclusive but excisional biopsy often leads to the final diagnosis. The best treatment (surgery vs chemotherapy vs surgery followed by adjuvant chemotherapy) remains indeterminate. Any individual up to stage IIE (Ann Arbour/Costwolds staging system) with complete resection is surgical candidate. R-CHOP is the first line treatment DLBCL and Zhang et al reported high rates of complete response in primary pulmonary DLBCL. DLBCL is a recognized condition but the best treatment, the surgical indications and prognosis remains undefined. All the lesions that can mimic a lung cancer must undergo a differential diagnosis and staging investigation in order to not postpone any treatment, including surgical treatment.

Keywords: *Primary pulmonary lymphoma. Diffuse large B cell lymphoma. Lung cancer. Thoracic surgery.*

PC 093. PULMONARY HAMARTOMA - CLINICAL CASE

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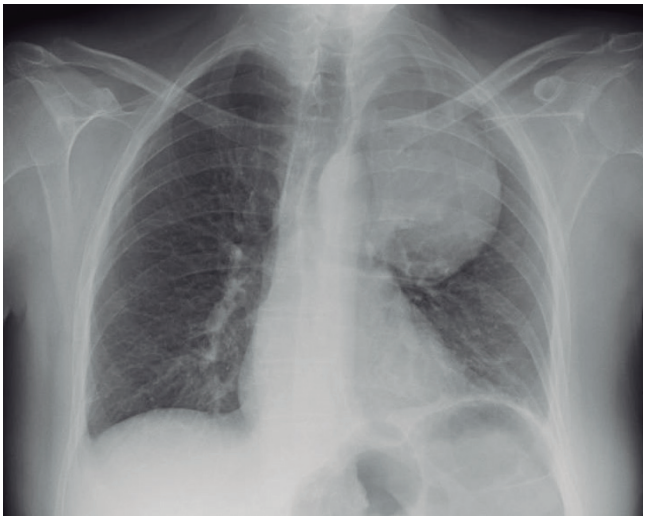
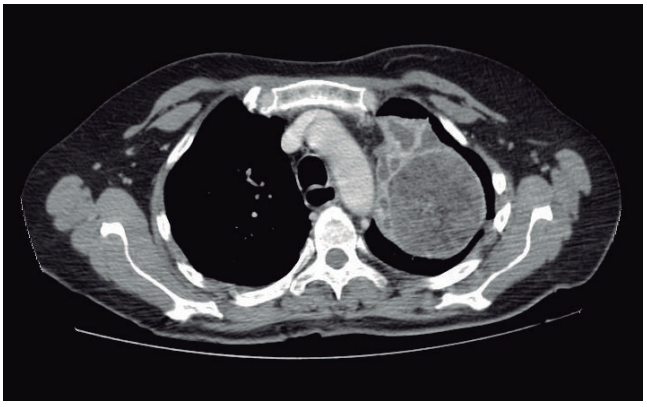
Introduction: Pulmonary hamartomas, although rare, are the most frequent benign tumor lesions of the lung. They are more common in males, with a peak incidence at age 50. Most hamartomas are peripheral and asymptomatic lesions, discovered accidentally on chest radiography. Central hamartomas can cause bronchial A obstruction leading to atelectasis, obstructive pneumonia, cough, sputum and/or chest pain. Surgery is indicated for central, large or rapidly growing lesions, as well as for symptomatic patients.
Case report: We present the case of a 59-year-old non-smoker, with a personal history of schizophrenia and without other known pathologies. She was hospitalized for a 5-day course of fever, cough with sputum, sometimes hemoptoic, and dyspnea for medium exer-

tion. Chest radiography showed a nodular image of well-defined limits in the upper lobe of the left lung. A chest CT scan was performed, which revealed a large, heterogeneous/expansive mass of well-defined limits, 6.5 cm in diameter, with some scattered millimetric calcifications. Left clavicular adenopathy (13 × 9 mm). Bronchofibroscopy was performed, which showed a lesion that obstructed the opening orifice of the left upper lobe, whose biopsies showed a neoplasm of mesenchymal etiology. The additional characterization by PET demonstrated tenuous avidity for FDG of the LSE mass (SUV max. 3). The respiratory functional study revealed mild obstructive type ventilatory syndrome (FEV1/FVC: 64.3% FVC 91%, FEV1 74%). The patient was referred for chest surgery. She underwent a left upper lobectomy and mediastinal lymphadenectomy. The histology of the surgical specimen revealed chondromyxoid hamartoma. After 6 months of follow-up, the patient is clinically well and without recurrence of the lesion.





Keywords: *Hamartoma. Benign tumor. Surgery.*

PC 094. EMPYEMA TREATMENT: RETROSPECTIVE ANALYSIS FROM SURGICAL CASES

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Introduction: Surgical approach in empyema aims to drain the loculated empyema allowing a good pulmonary re-expansion when conservative approach fails. A small percentage of patients with empyema stage II/III and/or lung abscesses do not respond to conservative therapy. In such cases surgical treatment should not be delayed.

Methods: A retrospective analysis, between 2018 and 2020 (30 months), was performed using clinical reports of hospitalized patients with empyema and lung abscess from a Thoracic Surgery Department. We aim to evaluate the clinical features, pleural effusion (PE) characteristics, microbiological agents and surgical treatment from the patients with empyema admitted in the Thoracic Surgery Department.

Results: 73 patients were selected, 84% male (n = 61), with a mean age of 55 years (minimum 16; maximum 91). The average hospital stay was 12.8 days. The most frequent co-morbidities were: arterial hypertension (33%), diabetes mellitus (19%), dyslipidemia (12%), cerebrovascular pathology (12%) and respiratory pathology (11%). Only 3 patients had lung abscess and empyema at the same time. About 14% (n = 10) had PE with a single locus, the rest being loculated. Microbiological agents were obtained in 48% (n = 35) of patients, in blood cultures, pleural fluid (PF) and/or sputum. The main agents in blood cultures were: Streptococcus pneumonia (n = 5); and in the PF were: multisensitive Staphylococcus aureus (n = 5), Klebsiella pneumonia (n = 3), Streptococcus intermedius (n = 3), multidrug-resistant Staphylococcus aureus (n = 3) and Mycobacterium tuberculosis (n = 3). The anaerobic bacteria found were: Fusobacterium nucleatum, Finegoldia magna, Parvimonas micra, Actinomyces odontolytices and Atopobium parvulum. Fungi were only encountered in one PE - Candida glabrata. Cultures were positive in 69% of empyemas. Patients with abscesses didn't have any etiological agent. Surgical treatment was performed in 96% of the patients (n = 73) and the majority were subjected to video-assisted thoracoscopic surgery (VATS) (66%, n = 48). Only in 29% (n = 21) was necessary to perform open thoracotomy. It was performed 41 pleural debridements, 22 decortications, 5 pulmonary resections (2 together with decortication and 3 with debridement) and 10 pleurectomies. 3 patients maintained a conservative treatment. All patients started empirical antibiotics prior to the surgical procedure with subsequent target therapy according to the sensitivity tests. No patients died during surgical procedure or hospitalization.

Conclusions: Performing VATS in empyema cases allows pleural fluid to be drained, collection of better cultural samples compared to thoracentesis, and performance of surgical techniques which aim pulmonary re-expansion without the need for open surgery, which were all noted in most of our patients. VATS success rate is high, with low rate complication. Conversion from VATS to open thoracotomy is simple. Etiological agents aren't always possible to be found in empyema or lung abscesses cultures; nevertheless we were able find that about 50% of our patients have obtained positive cultures. The duration of the antibiotic prior to surgery might also have influenced the final prognosis.

Keywords: *Empyema. Antibiotic treatment. Video-assisted thoracoscopic surgery. Thoracotomy.*

PC 095. ACQUIRED COMMUNITY PNEUMONIA – RELATIONSHIP BETWEEN AETIOLOGICAL AGENT IDENTIFICATION, STEP-UP IN ANTIBIOTIC THERAPY AND MORTALITY

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Introduction: Acquired community pneumonia (CAP) is an important cause of morbidity and mortality all over the world. Streptococcus pneumoniae remains as the leading agent identified, but aetiological diagnosis cannot be reached in 30-65% of the cases. In-hospital mortality, in Portugal, is around 20.4%.

Objectives: To evaluate the impact of aetiological agent identification on antibiotic therapy step-up and on mortality.

Methods: Retrospective study of inpatients with CAP diagnosis in the Pulmonology Service in a tertiary hospital between January 1st, 2018 and December 31st, 2018.

	With microbiological isolation	Without microbiological isolation	*p-value*
	n=52 (26,9%)	n=141 (73,1%)	
Previous year hospitalization (%)	14 (26,9)	37 (26,2)	0,924
Antibiotic therapy step-up (%)	10 (19,2)	19 (13,5)	0,321
In-hospital mortality (%)	4 (7,7)	17 (12,1)	0,388

Figure PC 095

Results: In total, 193 patients were analysed. Male gender was predominant, corresponding to 66.8%. The mean age was 65.8 years (± 16.1 years), 27 being the minimum and 93 the maximum age. Patients were mainly independent (79.8%). CURB65 at admission was low to intermediate risk (0-2) in 79.1% and high risk (3-5) in 20.9%. Aetiological agent identification was possible in 26.9% (n = 52). Streptococcus pneumoniae was the main microorganism identified, in 66%, followed by Haemophilus Influenza in 13.2% and Influenza viruses in 11.2%. Urinary antigens were the main identification source, in 51.9% and it was achieved at patients' admission. In the remaining cases, aetiological agent identification was achieved at a median period of 6 days, 2 being the minimum and 24 the maximum of days. The median antibiotic therapy duration was 7 days, with minimum of 5 and maximum of 35 days. In-hospital mortality was about 10.8%. The mean age of patients that died in hospital was statistically higher than the mean age of patients with hospital discharge (64 ± 15.9 vs 78 ± 12.0; p < 0.01). Moreover, 33.3% of patients that died in hospital had the presumption or the diagnosis of metastatic lung cancer, 19% had severe chronic obstruction pulmonary disease and 14.3% had worsening of the underlying interstitial disease.
Conclusions: Aetiological agent identification did not significantly influence antibiotic therapy step-up or in-hospital mortality. Late microbiological identification may have conditioned antibiotic therapy step-up.

Keywords: *CAP. Aetiological identification. Mortality.*

PC 096. RESPIRATORY INFECTION DUE TO PSEUDOMONAS AERUGINOSA COMPLICATED BY BACTEREMIA: ANALYSIS OF FACTORS WITH AN IMPACT ON PROGNOSIS

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Introduction: Pseudomonas aeruginosa is a microorganism capable of causing severe respiratory infection, especially in hospitals and in those patients with weakened defense mechanisms. This agent has harmful mechanisms capable of defeating the innate and adaptive defenses of the immune system. In the natural history of this infection, the identification of the agent in the bloodstream (bacteremia) heralds a worse outcome.
Objectives: To characterize respiratory infections due to Pseudomonas aeruginosa complicated by bacteremia and to identify factors associated in a worse prognosis.
Methods: A retrospective descriptive study with an analytical component was conducted. We identified all hospital admissions due to respiratory infection that presented with Pseudomonas aeruginosa bacteremia in adults patients during 2 years period. We obtained demographic data from the identified cases. We extracted the characteristics of the primary respiratory focus. We explored the presence of contributing factors, namely, iatrogenic immunosuppression or pathologies that compromise the immune system. We registered the antimicrobial resistance patterns of the isolated agent. The criteria for microbial resistance followed the guidelines of the European Committee on Antimicrobial Susceptibility Testing. We assumed the occurrence of in-hospital all-cause death as the primary outcome. We developed a logistic regression model for factors associated with this outcome. We selected p-value < 0.050 for statistical significance. We used the institution's software to access clinical files and statistical processing was performed using IBM SPSS version 19.0.
Results: We obtained a sample of 33 cases. The majority (22 cases, 66.7%) were male. The mean age was 75.4 years (standard deviation 10.6). The primary focus was due to: pneumonia (28 cases; 84.8%), acute tracheobronchitis (4 cases; 12.1%) and lung abscess (1 cases; 3.0%). All had criteria for nosocomial infection. Predisposing factors included: active chemotherapy (7 cases, 21.2%), diabetes mellitus (6 cases; 18.2%), alcoholism (5 cases; 15.2%). There was antimicrobial resistance "in vitro" identified in 10 cases (41.7%), namely piperacillin-tazobactam (9 cases; 27.3%), ceftazidime (5 cases; 15.2%), ciprofloxacin (3 cases; 9.1%), meropenem (2 cases; 6.1%). Mortality reached 60.6% (20 cases). Comparing the patients whose outcome was death with the remaining, we found a higher proportion of men (80.0% versus 46.2% p = 0.044). The end of the logistic regression model identified male gender as a factor associated with the occurrence of in-hospital death (odds ratio 7.8 p = 0.034).
Conclusions: Respiratory infections due to Pseudomonas aeruginosa with the presence of bacteraemia have a high in-hospital mortality rate. Men had a worse prognosis.

Keywords: *Pseudomonas. Respiratory infections.*

PC 097. TWO NEIGHBORS WITH CHRONIC PULMONARY ASPERGILLOSIS: A CASE OF PUBLIC HEALTH?

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Introduction: Aspergillus spp. is an ubiquitous mold responsible for about 60% of fungal infections in immunocompromised individuals. The spectrum of clinical presentation is variable, and pulmonary manifestations can take different forms, depending on structural pulmonary changes and the degree of host immunosuppression. Chronic pulmonary aspergillosis (CPA) is a presentation most frequently encountered in patients with previous structural injuries. Two clinical cases of CPA are submitted at a time when there was greater incidence or suspicion of such cases in a Pulmonary Disease ward.
Case reports: Case 1: Female, 62 years old, former smoker, with history of right lobectomy due to sequelae of cavitated pulmonary tuberculosis and type 2 diabetes mellitus. She was referred to the Pulmonology consultation with recurrent respiratory infections, complicated by hemoptysis. Chest computed tomography (CT) showed cylindrical bronchiectasis, with mucous filling, and centrilobular micronodules, with greater expression in the right lower lobe. Flexible bronchoscopy (FB) was performed and directed bronchial lavage (DBL) undertaken with identication of Aspergillus terreus (predominantly), Aspergillus fumigatus (AF) and Aspergillus fusarium sp. and the research of Galactomannan antigen on DBL was positive with index 2.1. The patient also had high AF-specific IgG, negative AF-specific IgE and normal total IgE. Mycobacteriological, bacteriological and cytological tests of DBL and serology for human immunodeficiency virus (HIV) were negative. Chronic pulmonary aspergillosis was diagnosed and the patient started treatment with

voriconazole with clinical improvement. Case 2: Male, 61 years old, former smoker, with sequelae of pulmonary tuberculosis, COPD and Parkinson's disease. He was hospitalized due to a waisting syndrome, productive cough with recent worsening and massive hemoptysis. Chest CT scan revealed the presence of cavitation in the right upper lobe with associated densification and subpleural opacities in the right lower and upper left lobes. FB was performed, which revealed generalized inflammatory signs and abundant mucopurulent secretions. The patient also had high AF-specific IgG and total IgE. Mycobacteriological, bacteriological and cytological exams of the DBL and HIV serology were negative. Upon presentation of criteria suspicious for CPA and isolation of filamentous fungus in respiratory samples (with posterior identification of Aspergillus niger in the DBL), the patient was started on therapy with voriconazole with clinical improvement. The patient was presented to the Thoracic Surgery team.
Discussion: CPA is an uncommon disease in which the most common presentation is chronic cavitary pulmonary aspergillosis, with aspergilloma and Aspergillus nodule being less frequent. The diagnosis requires a progressive clinical course of more than 3 months, with at least one cavitation (with or without aspergilloma) or thoracic nodules, direct evidence of infection or immunological response to Aspergillus and exclusion of alternative diagnoses. We emphasize the importance of early diagnosis of CPA since the absence of treatment translates in a high mortality rate at 5 years (75-80%). During the simultaneous hospitalization of these patients, it became known that they lived in the same building and the ocorrence was reported to the Public Health Department for further investigation in order to identify a potential harmful focus of fungal growth in their home environment.

***Keywords**: Aspergillus. Chronic pulmonary aspergillosis. Public health.*

PC 098. BEYOND A BRONCHOLITH, AN UNEXPECTED RESIDENT

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Case report: A female autonomous patient, 60 years of age, exsmoker since 2004 (3 pack-years), employed as a beautician was referred for pulmonology consultation due to symptoms of dyspnea, wheezing and cough for over 3 years. Besides cardiac arrythmia treated with bisoprolol, there was no other relevant medical past. The patient was previously evaluated in Surgery consult for diaphragmatic eventration with complaints of gastroesophageal reflux and dyspnea in this context, having been submitted to surgical correction in May 2017. Due to the persistent complaints of dyspnea, non-productive cough and night wheezing, the patient was evaluated by internal medicine and cardiac disease was excluded. The patient underwent chest computed tomography (CT) in 2018 where a imagiological pattern suggestive of broncholith was observed in the apical segment of the left lower lobe. In this context, the patient was referenced for further evaluation in pulmonology consultation. Reviewing past radiological exams evidenced the presence and stability of the observed pattern, at least since 2015. Respiratory function tests revealed a decrease in carbon monoxide diffusion capacity and none else of notice. Videobronchofibroscopy was performed allowing for the visualization of a whitish endobronchial vegetation in the apical segment of the left lower lobe, subsegment B6b, causing its complete obstruction. It's biopsy results evidenced necrosis, dystrophic calcification and the presence of yeast, branched and septate structures with morphology compatible with Aspergillus (Grocott +) - findings compatible with aspergilloma. Serological IgE as well as Aspergillus specific IgG and IgE were negative. Further assessment by rigid bronchoscopy was considered warranted and allowed for the excision and apparent repermeabilization of the subsegment. On follow-up, the lesion presented a decrease in the CT scan and endoscopic reassessment. In the absence of evidence of invasive disease, a conservative approach was adopted in follow-up. The patient is now under surveillance in pulmonology consultation with no evidence, to this day, of systemic disease and with symptomatic improvement.
Discussion: The endobronchial aspergilloma is a rare manifestation of infection by Aspergillus spp. Patients may be asymptomatic or report respiratory or constitutional symptoms. Past history of pulmonary disease is common among these patients. Radiologically, it may present as a mass that may resemble a neoplasm. The role of serologies and bronchial lavage is uncertain in this entity and findings in bronchofibroscopy are variable, ranging from yellowish-white plaques to whitish nodules. Currently there is no consensus on the correct therapeutic approach for this disease.

***Keywords**: Aspergillus. Endobronchial aspergilloma. Broncholith. Dyspnea. Cough.*

PC 099. HISTOPLASMOSIS – A DISEASE OF THE IMMUNOCOMPROMISED?

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Introduction: Histoplasmosis is a fungal infection caused by the dimorphic fungus Histoplasma capsulatum. In endemic areas the reservoirs are frequently contaminated soils but also bat and birds droppings. Infection spreads through the inhalation of spores in contaminated places and it mainly behaves as an opportunistic infection. The clinical presentation is very variable, it goes from asymptomatic infection to progressive disseminated infection culminating in death, if not properly treated.
Case report: We present the case of a 56-year-old man, sent in 2017 to an Internal Medicine consultation for etiological clarification of an asymptomatic splenomegaly with several years of evolution. This organomegaly was detected in 2014, as an incidental finding on an abdominal CT scan. Imaging control revealed a progressive dimensional increase over the years. In this first consultation, the individual had hepatosplenomegaly, without adenomegaly, without pruritus but with leukopenia and thrombocytopenia. There was reference to heavy drinking habits in the past, with no relevant family history, however with a history of frequent trips to Asian countries (India and Indonesia). Throughout the etiological study we had HIV negative and exclusion of Gaucher disease, Fabry, visceral Leishmanniosis, tropical splenomegaly and Niemann-Pick. Increased SACE and β2 microglobulin were also observed. Thoracic CT was performed, with emphysematous changes and multiple mediastinal ganglion formations and topography of the celiac, splenic and gastric trunk. In 2019, he started a follow-up in Pulmonology consultations due to dyspnea associated with productive cough and for a suspected diagnosis of asthma in a smoking patient. From the initial study, pulmonary function tests showed an obstructive pattern with a positive response to a bronchodilator, SACE of 140 and chest CT showed pulmonary emphysema, mediastinal nodes without adenomegaly criteria, fibrous streaks in the right pulmonary apex, emphysema bubbles and striation at the level of the pleural contour. A flexible bronchoscopy was performed observing several nodular lesions dispersed throughout the trachea and in the initial third of the left main bronchus, which were biopsied. Pathological anatomy revealed necrotizing granulomas, associated with fungal infection, with morphological and histochemical characteristics compatible with histoplasma. He was also observed by otolaryngologists who biopsied changes in the larynx that were compatible with infection by histoplasma. After consulting the process, information was found about the presence of granulomas in the bone marrow. A diagnosis of progressive disseminated histoplasmosis was assumed, affecting

the lung, pharynx, larynx, bone marrow and with associated splenomegaly. The patient was admitted in the hospital in the pulmonology department and underwent treatment with intravenous amphotericin B for 14 days, with good response to treatment. He continued treatment with oral itraconazole, without complications, until the next Pulmonology consultation.
Discussion: We intend to draw attention to the emergence of cases of disseminated histoplasmosis in immunocompetent patients, especially in non-endemic areas. The appropriate treatment of acute phase and later its maintenance allows controlling the disease in most situations.

Keywords: *Histoplasmosis. Immunocompetent. Hepatosplenomegaly.*

PC 100. CLINICAL CHARACTERISTICS OF PULMONARY MYCOBACTERIUM ABSCESSUS IN ADULT PATIENTS

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Introduction: Mycobacterium abscessus complex is a group of multidrug-resistante non-tuberculous mycobacteria and commonly causes pulmonary infection in immunocompromised adults. It is of rapidly growing. The treatment is usually composed by a set of antibiotics like macrolide, cotrimoxazol, amikacin and moxifloxacina. In this study, we intend to characterize the clinical manifestations in a sample of Portuguese patients.
Methods: Review of clinical files of 13 patients with Mycobacterium abscessus complex lung infection followed at Centro de Diagnóstico Pneumológico Dr. Ribeiro Sanches, Portugal, between January 2004 and December 2018.
Results: There was 46% male ind this sample. In 84% of th cases (n = 11), the main radiological pattern was diffusely nodular, with moderate to severe bronchiectasis; in the other two cases, one has a diffuse linear pattern and the other one a a lobar consolidation. Immunossupression was seen in 73.9% (n = 14) of the cases: 11 due to immunossupressive medication (corticotherapy, chemotherapy and azathioprine) and the other 3 to HIV infection. Three patients died from the Mycobacterium abscessus infection, and it was reported macrolide resistance in all of them. In the other hand, in only one of the other 16 cases we observed macrolide resistance.
Conclusions: With this study, it seems like the Mycobacterium abscessus complex group tends to affect more immunocompromised people and patients with bronchiectasis, and macrolide resistance seems to be linked to a poor prognosis.

Keywords: *MDR-TB (multidrug-resistant tuberculosis). Bacteria.*

PC 101. ADDISON'S DISEASE: TUBERCULOSIS OLD FRIEND

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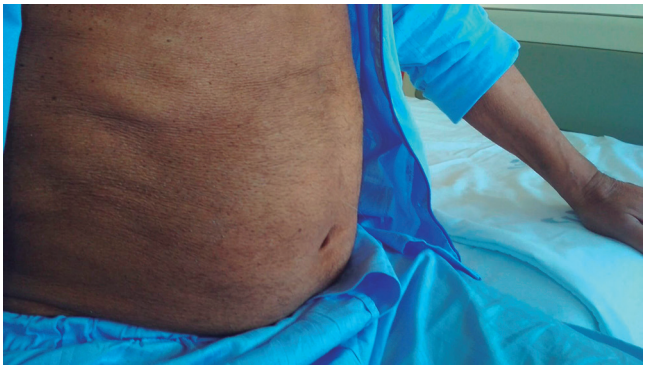
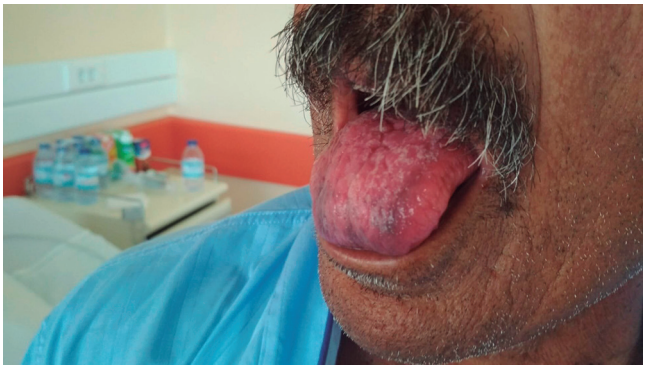
Introduction: Addison's disease or primary adrenal insufficiency was first discovered in 1855 by Thomas Addison in patients with tuberculosis, being at the time the main etiology of this disease. Nowadays, in developed countries, autoimmunity is the main cause, but tuberculosis remains a frequent etiology, comprising 7 to 20% of cases. Tuberculous adrenalitis results from hematogenous spread of the Koch bacillus, with bilateral affectation. Most symptoms and signs are nonspecific, delaying the diagnosis. Hyperpigmentation of the skin and mucous membranes help reach the diagnosis, and it is common to find hyponatremia, hyperkalemia and hypercalcemia.
Case report: 63 years old, male, retired as a gardener. History of arterial hypertension, dyslipidemia, alcoholism and smoking (75 Pack-year). He referred to the ER of Faro Hospital with complaints in the last 3 months of asthenia, anorexia, nausea and weight loss of 18 kg in this period, in addition to presenting in the last month fever, cough with mucopurolent expectoration and dyspnea (mMRC 2). In the physical examination there was deterioration of the general condition with normal pulmonary auscultation. Analytically with PCR of 53 mg/L, without leukocytosis, with hyponatremia and hyperkalemia. A thoraco-abdominal-pelvic CT scan was requested, revealing "bilateral apical parenchymal densifications, some nodulariform with spiculated contours, observing foci of cavitation", in addition to "enlargement of the dimensions of the adrenal glands, on the left with thickening of both arms, and on the right with an hypodense mass, measuring 54 × 18 mm on the axial axis, of undetermined etiology ". We opted for admission in the Pulmonology Service, in a respiratory isolation room, and collected sputum for mycobacteriological examination. The result of the direct examination was positive, and antibacillaries were started, with the regimen Rifampicin, Isoniazid, Pyrazinamide and Ethambutol. In the first days of hospitalization the patient had worsening asthenia, hypotensive profile, periods of disorientation and maintained hyponatremia after sodium replacement. Excessive hyperpigmentation was also observed in non-exposed areas and a bluish tongue, which he reported presenting several months ago. Due to the suspicion of adrenal insufficiency, a new laboratory study was requested, showing very low cortisol levels, elevated ACTH, hypercalcemia, in addition to decreased renin and aldosterone levels. This data confirmed Addison's disease, and a corticosteroid therapy was started with hydrocortisone and fludrocortisone. The patient showed a progressive improvement in his general condition, being discharged after 3 weeks of hospitalization, sent to Respiratory diseases center and Endocrinology consultation.





Discussion: This is an interesting case recalling that, although the incidence of tuberculosis has decreased in recent decades, it remains an important cause of Addison's disease in developed countries. In these situations, the destruction of the adrenal gland is gradual and the disease only becomes clinically apparent when about 90% of the cortical tissue is affected. For this reason, the

damage is usually irreversible, with no recovery of function after the onset of antibacillaries. On the other hand, treatment with rifampicin increases the metabolism of cortisol, which can aggravate the clinical presentation of the patient, something that was verified in the described case.

Keywords: *Tuberculosis. Addison's disease. Hyperpigmentation. Adrenal gland.*

PC 102. SEVERE HEPATOXICITY TO ISONIAZID - CASE REPORT

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Introduction: Drug-induced liver injury (DILI) has been reported in 5-28% of people treated with anti-TB drugs. Majority of the reports have used an elevated alanine (ALT) or aspartate transaminase (AST) of 3 times upper limit of the normal range (ULN) with symptoms attributable to liver injury or 5 times ULN of ALT or AST without symptoms to define hepatotoxicity. Despite decades of use and a large number of patients exposed to anti-TB drugs worldwide, pathogenesis underlying hepatotoxicity is poorly understood. For most TB drugs, the relationship between dose and toxicity is unknown, except for hepatotoxicity being associated with high-dose PZA (> 40 mg/kg daily). Risk factors for DILI are age, gender (woman are more susceptible), malnutrition, alcohol intake, chronic liver disease and IV drug abuse. Large studies reported that symptomatic transaminase elevation (5x the ULN) occurred in 0.1% of treatment initiations.
Case report: We present a case of a 76 years old woman, with a past medical history of rheumatoid arthritis (RA), obstructive sleep apnea syndrome, arterial hypertension and depression. The patient had no respiratory symptoms and was referred for a pneumology appointment by her rheumatology doctor to investigate for LTBI before starting her biological treatment for her RA, which was being treated with prednisolone 15 mg and hydroxychloroquine sulfate 400 mg for the past 5 years. Chest radiography showed fibrotic lesions (sequelae) compatible with past TB infection. Mantoux tuberculin skin test (TST) was < 5 cm and IGRA (Interferon Gamma Release Assay) was also negative. She started treatment with isoniazid (300 mg). She was admitted to the hospital 1 month later, after feeling unwell and with a 2-day history of jaundice. The patient was icteric with no signs of encephalopathy. Abdominal examination showed epigastric tenderness. Her laboratory values showed increased total bilirubin 30.6 mg/dL, Aspartate aminotransferase (AST) 1,007 U/L, Alanine aminotransferase (ALT) 2,257 U/L, Alkaline phosphatase (ALP) 553U/L, Ammonia 128 umol/L – compatible with a hepatocellular pattern. Isoniazid and Hidroxicloroquine were suspended, and the patient did a 7-day corticosteroids course and started ursofalk 250 mg 3id with clinical improvement. Serological studies, including tests for hepatitis A, B, C, E viruses, cytomegalovirus, HIV, Epstein-Barr virus, herpes simplex viruses 1 and 2, gave negative results. Furthermore, markers related to autoimmune hepatitis were negative. α1-antitrypsin and ceruloplasmin were normal. Ultrasound results of the abdomen were normal. MRI showed liver of heterogeneous characteristics, noting a micronodular pattern, translating acute liver disease in progress. No ectasias or flow obstruction. She was discharged from the hospital after 25 days, with almost normalized values of total bilirubin, AST, ALT and ALP.
Conclusions: Drug-induced liver injury (DILI) is ultimately a clinical diagnosis of exclusion. The regression of isoniazid hepatotoxicity usually takes weeks (recovery is achieved in most patients). In summary, efforts to eradicate tuberculosis by treating LTBI will expose a greater number of patients to the risk of potentially serious hepatotoxic effects of antituberculosis drugs, since the choice of effective safe alternative antituberculosis drugs is limited. Individual's risk of DILI should be weighed and close surveillance is needed in patients being treated for latent TB.

Keywords: *Isoniazid. Hepatotoxicity. Tuberculosis.*

PC 103. EXTRAPULMONARY TUBERCULOSIS: STILL A CHALLENGE

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Introduction: Tuberculosis (TB) is an infectious disease that can affect any organ and remains a major global public health problem. Although patients with tuberculosis typically present with pulmonary TB, 20% of all cases are extrapulmonar.
Case report: A 57-year-old Caucasian male, non-smoker and without alcohol consumption in the last 10 years. History of diabetes mellitus and dyslipidemia. No recent trips abroad. The patient developed chronic pelvic pain, sometimes with testicular irradiation, dysuria, urinary frequency and nicturia within 3 years. In the last year, he presented with urinary urgency and intermittent hematuria. After multiple admissions to the hospital, those complaints were interpreted in the context of acute renal colic or acute cystitis. Urinalysis always presented erythrocyturia and leukocyturia; several urine samples without bacterial growth. He was empirically medicated with multiple antibiotics cycles without relief of lower urinary tract symptoms (LUTS). In urology consultations follow-up, he underwent a CT urogram which revealed renal lithiasis and active inflammatory signs in the left kidney. To exclude neoplasia, multiple prostate and bladder biopsies were performed, compatible with benign prostatic hyperplasia and chronic prostatitis; and with erosive and follicular cystitis, respectively. In addition, he was referred to the nephrology consultation for workup of stage 2 chronic kidney disease. Renal/bladder ultrasonography was also performed showing dimensional reduction of right kidney, calyces ectasia and large renal echogenic images suspected of staghorn calculi; bladder showed diffuse and irregular parietal thickening. The patient presented to emergency department for the complaints previously described, associated with fever and weight loss of 10 kg, with about three months of evolution. He denied nocturnal hypersudoresis or respiratory symptoms. Physical examination was unremarkable. Laboratory data showed normochromic normocytic anemia, creatinine 1.2 mg/dL, elevated liver injury markers and elevated inflammatory parameters. HIV, hepatitis and syphilis tests were negative. He was hospitalized and started levofloxacin therapy, urine cultures (3 samples) with mycobacterial screening were requested. Direct smears revealed acid-fast bacilli (1-9/100 fields) and the rapid molecular rifampicin resistance test identified Mycobacterium tuberculosis complex sensitive to rifampicin, which was later confirmed by the cultural drug-sensibility test. Anti-tuberculosis drugs were started (classic HRZE regimen), with apyrexia after 48 hours and a substantial clinical improvement. Chest-CT was requested revealing countless punctiform bilateral nodules, suggestive of miliary tuberculosis (TB). Bronchofibroscopy was performed and pulmonary TB was also confirmed. Currently, he is on 81st day of anti-TB drugs, with no adverse effects and complete resolution of LUTS.
Discussion: Genitourinary TB is a relatively uncommon form of extrapulmonary tuberculosis, especially in developed countries. It is one of the most serious forms due to nonspecific symptoms and consequent delay in diagnosis. Thus, the authors intend to alert to the importance of considering this diagnosis in the presence of a persistent sterile pyuria, with no resolution of the symptoms after antibiotic therapy.

Keywords: *Tuberculosis. Extrapulmonary tuberculosis.*

PC 104. CLINICAL CHARACTERISTICS AND LUNG FUNCTION DECLINE OF R334W MUTATION-ASSOCIATED CYSTIC FIBROSIS

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Introduction: Cystic Fibrosis (CF) is the most common autosomal recessive life-threatening disorder among the white population. It is associated with mutations in the CFTR gene causing dysfunction of the CFTR protein. Even though somewhat prevalent in Portugal, the R334W mutation is infrequen worldwide and its impact on the clinical characteristics and lung function decline of the patients is poorly described.
Methods: Data from patients followed in the referral centre for Cystic Fibrosis of the Coimbra Hospital and University Centre were retrospectively studied. Data collection included variables as gender, age at diagnosis, genotype, chronic infection with Pseudomonas aeruginosa, lung function (FEV1) on admission and evolution, ward admissions due to respiratory exacerbation and lung transplantation. Lung function decline was obtained through linear correlation analysis for each patient (excluded when spirometric control of less than 1 year and censored on transplantation). Statistical analyses were performed using IBM SPSS Statistics for windows, version 24 (IBM Corp., Armonk, N.Y., USA).
Results: Twenty-two patients with cystic fibrosis were included, ten of whom presenting the mutation R334W (R334W group - 5 homozygotes and 5 heterozygotes R334W/ΔF508). Five of the latter were male, compared to 4 of the 12 homozygotes for ΔF508 (ΔF508 group - ΔF508/ΔF508). Chronic infection with Pseudomonas Aeruginosa occurred in 7 patients from the R334W group and in 6 of the ΔF508 group. Age at diagnosis was significantly higher among patients in the R334W group (median 23 years vs 2 years, $p < 0.01$). Patients in the R334W group showed a median of 1 ward admission due to exacerbation (min. 0 (4 patients), max. 18), compared with 3 admissions in the ΔF508 group (min 0 (1 patient), max. 59) ($p > 0.05$). Median FEV1 (% predicted) at diagnosis was 69.2% in the R334W group and 87.2% on the remainder. The median FEV1 rate of decline was of 102 mL/yr in R334W population (n = 8) vs 84 mL on the ΔF508 group (n = 12, $p > 0.05$). Four patients were submitted to lung transplantation during follow-up.
Conclusions: The R334W mutation is associated with a significantly delayed diagnosis of cystic fibrosis, tending towards adulthood, when compared with ΔF508 homozygosity. Colonization with Pseudomonas Aeruginosa is frequent in both populations. In this sample, statistically significant differences on lung function and hospitalizations could not be found. Further research, with more extensive sample, is needed.

***Keywords**: Cystic fibrosis. Respiratory function tests. Genetic association study.*

PC 105. TYPE 1 POLYSOMNOGRAPHY, ANTHROPOMETRIC DATA AND CARDIOVASCULAR DISEASE

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Introduction: Obesity is a risk factor for numerous diseases, namely obstructive sleep apnea (OSA). Morover, the distribution of body fat is an additional risk factor, which prompted a study of its characteristics and its correlation with the sleep variables studied in our population.
Objectives: To describe the population using level 1 polysomnography and establish correlations between the study variables neck, abdominal and hip circumference and the presence of cardiovascular disease.
Methods: We performed a descriptive and retrospective study of data from patients who underwent level 1 polysomnography in 2018. We collected anthropometric data and variables from the sleep study. The patients were considered to have OSA if they had RDI > 5. χ^2 association tests and correlation tests were used, and statistical significance was set to $p < 0.05$. The IBM SPSS Statistics version 25® program was used for statistical analysis.
Results: A total of 162 type 1 polysomnographies were performed. The mean age of the patients was 53.3 years (± 12.3) and 57.4% of the patients were male (n = 93). They had a mean BMI of 30.6 (± 7.4), mean neck circumference of 44.1 (± 32.2), mean abdominal circumference of 108.2 (± 16.7) and mean hip circumference of 111.5 (± 12.5). There prevalence of hypertension was 54.3%; 9.3% of patients had coronary disease and 20.4% had DM. Of these, 90 (55.56%) had OSA; 63.3% of the patients were male, with a mean BMI of 32.6 ± 7.66. These patients had a mean neck circumference of 42.5 ± 5.01, a mean abdominal circumference of 112.72 ± 13.96 and a mean hip circumference of 114.37 ± 13.07; 34.4% of patients had a positive ESAP. A total of 68 (75.55%) patients were hypertensive, 7 (7.8%) had a history of stroke, 11 (12.2%) had known coronary heart disease and 28 (31.1%) had DM. For PSG variables, we registered a mean RDI of 19.5 ± 16.19, mean saturation of 93.43 ± 2.61, mean minimum of 77.63 ± 12.1, mean ODI of 29.54 ± 21.1, mean T90 of 12.16 ± 21.64%, mean snoring of 6.85 ± 9.38, mean time in supine position of 37.2 ± 32.4%. A positive correlation was found between BMI and abdominal (r = 0.868) and hip (r = 0.838) circumference, T90 (r = 0.353) and ODI (r = 0.38), and a negative correlation was identified with mean saturation (r = -0.375). Of all anthropometric data, the abdominal circumference has the strongest correlation (r = -0.428) with mean saturation, ODI (r = 0.466), T90 (r = 0.421) and RDI (r = 0.382). Time spent in supine position did not correlate with any other variable. There was a correlation between the T90 percentage and coronary heart disease (r = 0.314) and BMI (r = 0.353).
Conclusions: This study showed that circumference values are good indicators of obesity, which are easy to obtain, without additional costs, and that they correlate with the sleep respiratory disturbance index. As such, they must be considered as well as other risk factors for OSA in order to better establish the importance of performing a polysomnography.

***Keywords**: Type 1 polysomnography. Cervical perimeter. Abdominal perimeter and hip perimeter. Hypertension. Coronary disease and dm.*

PC 106. PREDICTIVE FACTOS FOR OSA IN COPD

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Introduction: The overlap syndrome is characterized by the presence of chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA) and is associated with higher morbidity and mortality and poor life quality.
Objectives: To compare COPD patients with and without OSA and determine the predictive factors for overlap syndrome.
Methods: Retrospective analysis of COPD patients with and without OSA under non-invasive ventilation (NIV), between January 2018 and June 2019. A comparative analysis was performed and the predictive factors for overlap syndrome were determined.
Results: In total 94 COPD patients were identified, of which 74.5% (n = 70) were male and mean age was 71.36 ± 11.5 years and mean body mass index (BMI) was 29.2 ± 5.9Kg/m^2. Most patients were classified as group B (35.1%, n = 33) or D (51.1%, n = 48) according to the GOLD classification, with a mean FEV1 value of 43.9%. The preferred ventilation mode was bilevel ST (90.4%, n = 85). The overlap syndrome was present in 51.1% (n = 48) of the subjects (mean

AHI 26.5/h). We found statistically significant differences between patients with and without overlap syndrome, regarding age (mean 68.7 vs 74.2 years, p = 0.018), BMI (30.5 vs 27.9kg/m^2, p = 0.04) and percentage of sleep time with oxygen saturation below 90% (T90) (78.4% vs 20.5%, p < 0.001). Regarding blood gas values before NIV initiation, we found statistically significant differences in PaO2 values (61.8 mmHg vs 70.2 mmHg, p = 0.03), but no differences in PaCO2 or bicarbonate values were seen. Furthermore, no differences in comorbidities, smoking load, pulmonary function, exacerbations or hospital admissions were observed. A multivariate analysis showed a positive association between BMI, FEV1 value, T90 and the AHI value (F (3.5) = 6.43, p = 0.001).
Conclusions: This analysis showed that patients with overlap syndrome are younger, obese, have greater degree of hypoxemia and nocturnal desaturation compared to those with isolated COPD. Nocturnal desaturation was a predictive factor for overlap syndrome. On the other hand, there were no differences in terms of exacerbations or hospital admissions, which could be related to treatment with NIV. As expected, the BMI was a predictive factor for OSA (AHI value), as well as greater FEV1 values.

Keywords: *Overlap syndrome. COPD. Obstructive sleep apnea.*

PC 107. IMPROVEMENT IN CHRONIC PAIN CONTROL ASSOCIATED WITH CPAP THERAPY IN PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA SYNDROME

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Introduction: Continuous positive airway pressure (CPAP) therapy is the mainstay of treatment for obstructive sleep apnoea syndrome (OSAS). Individuals with OSAS suffer from significant sleep fragmentation, with detrimental impact in their quality of life. This problem is often compounded by the coexistence of other morbidities with painful manifestations, which further aggravate the quality of sleep. Reciprocally, reduced sleep efficiency has also been linked to heightened neuralgic sensitivity, hence propagating the cyclicity between poor sleep and great pain. This study addresses the possibility of an effect of CPAP therapy in pain levels in patients suffering from chronic pain (CP).
Methods: A longitudinal prospective study design was employed. A sample of 82 subjects was obtained by convenience from Sleep Pathology Consultations at a multidisciplinary centre dedicated to Sleep illness. Inclusion criteria were suffering from sleep apnoea syndrome, irrespective of undergoing CPAP treatment, and CP of any aetiology, requiring chronic medication with analgesics and/or analgesic adjuvants. Following enrollment, patients with and without CPAP treatment were monitored over the following months regarding type, frequency and dosing of painkiller intake.
Results: The majority of patients were female (n = 50) and of age ranging from 50 to 70. The majority suffered from pain of either neurosurgical (n = 18) or orthopaedic (n = 28) aetiology, whilst in a minority this was due to an auto-immune condition or deemed secondary to a psychiatric disorder. Most patients suffered from pain in the World International Organisation scale step 2 (and thus were under partial opioid agonists and non-steroid anti-inflammatory drugs), whilst 10% required high-dose opioid treatment. A strong correlation was found between CPAP treatment and a reduction in daily analgesic use (r = 67.3; p < 0.001). This improvement was observed regardless of follow-up in Chronic Pain Consultations or treatment with opioids. Interestingly, patients treated with analgesic adjuvant medication such as pregabaline or gabapentine showed a low negative correlation (r = 42.91; p < 0.001) with improvement with CPAP therapy. Lastly, a lack of improvement was observed in pain of psychogenic aetiology.
Conclusions: This study showed a positive effect of CPAP therapy in patients suffering from CP and OSAS by demonstrating a reduction in painkiller intake. Correction of sleep events by CPAP therapy could have led to lessened degrees of nightly sympathetic arousal and lesser sleep fragmentation. This is in line with the rationale of a contribution of iterative sympathetic nervous system activation to the amplification of neuralgic afferent signaling pathways. Furthermore, it could help explain the finding of the refractoriness of psychogenic pain to CPAP therapy benefit, as it is likely to have a more significant cortical (rather than autonomic) pathophysiology. The beneficial effect of analgesic adjuvants was unique among classes of pain medications. These could have been responsible for reducing the magnitude of improvement with CPAP treatment, as previous studies have pointed to an intrinsic ability to improve sleep in patients with some forms of CP. Nevertheless, it is also possible that these findings could be in relation with the severity or underlying aetiology (e.g., nevralgic) of pain in patients taking adjuvants.

Keywords: *Obstructive sleep apnoea syndrome. Continuous positive airway pressure. Chronic pain.*

PC 108. TRANSOESOPHAGEAL ECHOCARDIOGRAM IN HIGH-RISK RESPIRATORY FAILURE PATIENTS: A WAY TO MAKE IT POSSIBLE

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Introduction: Transoesophageal echocardiography (TEE) provides unique diagnostic information. An effective procedure depends on patient compliance, requiring sedation or general anaesthesia. Although spontaneous breathing sedation avoids risks and logistical requirements of tracheal intubation, it increases the risk of respiratory failure and may be unsuitable for high-risk patients.
Case report: A 31 years old woman with previous medical history of cystic fibrosis, chronic respiratory failure and end-stage kidney disease secondary to amyloidosis. She was on active list for combined lung-kidney transplantation and was under 16 hours day domiciliary non-invasive ventilation (NIV) in pressure support modality, altering between facial and nasal mask, long-term oxygen therapy (2 L/min) and hemodialysis. She was hospital admitted due to fluid overload and fever of unknown origin, characterized by high temperature peaks during haemodialysis sessions. Blood cultures isolated a Methicillin-susceptible Staphylococcus aureus and transthoracic echocardiogram showed a mass in the right atrium in relation to the hemodialysis catheter. Mass characterization through TEE was mandatory. The patient was submitted to TEE under spontaneous breathing sedation with NIV in pressure support mode (Philips Respironics Trilogy 202), using patient's domiciliary nasal mask ResMed Mirage™ FX. Monitoring during TEE included non-invasive blood pressure and pulse oximetry, and sedation was performed with midazolam with a target Richmond Agitation Sedation Scale (RASS) of -3. For procedure performance, she was positioned in left lateral decubitus and a mouthpiece was placed to allow TEE probe insertion. Initial ventilator settings were set at 22 cmH2O inspiratory positive airway pressure (IPAP), 6 cmH2O expiratory positive airway pressure (EPAP) and 40% fraction of inspired oxygen (FiO2) and were adjusted during the procedure based on pulse oximetry and tidal volume (Vte). Just before initiation, patient was eupneic with 97% of peripheral oxygen saturation (SpO2). A total dose of 4 milligrams of midazolam were used. Few minutes after initiation, patient's SpO2 fell to 88% and Vte were low (< 100 mL). IPAP was incremented to 24 cmH2O and FiO2 was set at 80% and then 100%, resulting in Vte > 100 mL and SpO2 at 100% till the end of the procedure. Registered air leaks ranged from 30 to 80 L/min. The procedure lasted for 11 minutes and TEE operators did not mention any technical difficulty. Patient remained RASS score -3 all procedure and was alert and calm ten minutes after ending. She tolerated it well and could not recall.

Discussion: The use of NIV as an adjunctive to TEE was already reported as effective in preventing respiratory failure due to sedation. However, all reports used oro-nasal or total face masks. In both cases, the endoscopic probe had overcome a mask port before reaching patient's mouth, conditioning difficulties in introducing and manoeuvring TEE's probe. Although air leak was high due to open mouth, it was compensated with increment in pressure support and FiO2, without impact on patient ventilation. The presented clinical case describes the use of a nasal mask, as well as patient's domiciliary mask, to deliver NIV during TEE examination, and proved its effectiveness. No persistent respiratory failure was observed, the procedure was well tolerated, and no technical difficulties were present.

Keywords: *Respiratory failure. Transesophageal echocardiography. Non-invasive ventilation.*

PC 109. CHARACTERIZATION OF PATIENTS WITH MYASTHENIA GRAVIS ADMITTED TO A RESPIRATORY INTENSIVE CARE UNIT OVER AN 8-YEARS PERIOD

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Introduction: Myasthenia Gravis (MG) is the most common autoimmune disease affecting the postsynaptic structures of the neuromuscular junction. It is characterized by the presence of muscle weakness with intensity fluctuation throughout the day, that affects the eye, bulbar, respiratory and limb muscles. The myasthenic crisis (MC), revealed by life-threatening respiratory muscle weakness, reaches about 15% of patients. Frequently, there is a need to start non-invasive or invasive mechanical ventilation.
Objectives: Retrospective study of patients with MG admitted to a respiratory intensive care unit. Analysis of the diagnostic and therapeutic approach.
Methods: MG patients admitted to a respiratory intensive care unit were analyzed, from January 2012 to September 2020, in order to confirm the characteristics of this population, what are the most frequent reasons for hospitalization, established diagnoses and ventilatory support used.
Results: There were 23 admissions of patients with MG, corresponding to 15 patients (one readmission). Five patients (33.3%) were female and 10 (66.7%) were male. The average age was 62.2 years. The most frequent reason for hospitalization was hypercapnic respiratory failure (RF) (43.5%), followed by hospitalization for post-operative surveillance (30.4%) and hypoxemic RF (26.1%). The average APACHE II score was 17.95. The average ICU delay was 15.2 days, diverted by a prolonged hospital stay of 100 days for septic shock and primary ARDS for pneumonia to the H1N1 Influenza A virus with bacterial overinfection. The main diagnoses were: myasthenic crisis (9 patients- 39.2%), post-operative thymectomy or other thoracic surgery (6 patients- 26.1%), pneumonia in the immunocompromised (4 patients- 17.5%), nosocomial pneumonia (1 patient- 4.3%), post-subcutaneous emphysema - pleural degeneration (1 patient - 4.3%), large cell lung carcinoma (1 patient - 4.3%) and decompensated heart failure (1 patient - 4.3%). In 12 of the 23 hospitalizations (52.2%) the patients underwent invasive mechanical ventilation (IMV) with an average duration of 14 days; in 15 (65.2%) non-invasive mechanical ventilation (NMV) was instituted with an average duration of 4.9 days; of the 15 patients submitted to NMV, it was performed to prevent extubation failure in 21.7%, 17.4% fulfilled NMV in isolation and in 13.0% NMV was used before and after invasive ventilatory support. No patient underwent high flow oxygen therapy. No patient was tracheostomized. Six patients (40.0%) underwent prior thymectomy or during hospitalization, one patient (6.7%) had a thymoma and another (6.7%) had associated Hashimoto's thyroiditis. Four patients died (not adjusted mortality of 17.4%). Their main diagnosis was: locally advanced large cell lung carcinoma associated with superior vena cava syndrome, pneumonia in the immunosuppressed (under mycophenolate mofetil and prednisolone) by Pneumocystis jirovecci, nosocomial pneumonia by Pneumococcus and pneumonia by Pseudomonas aeruginosa. The average age was 73.8 years.
Conclusions: As seen in previous studies, patients with MG hospitalized in the intensive care unit, present increased mortality when associated with sepsis with multiorgan dysfunction and RF in need of IMV. Patients with prolonged IMV, as well as patients who died, had a high APACHE III score on admission.

Keywords: *Miastenia gravis. Neuromuscular disorder. Invasive mechanical ventilation. Non-invasive mechanical ventilation.*

PC 110. UNLIKELY METASTASIS LOCATION OF LUNG CANCER

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Introduction: Masquerade ocular syndrome presents with decreased insidious visual acuity caused by multiple causes, such as neoplastic lesions. The most frequent malignant ocular tumours are metastasis from carcinomas of other organs (most often breast or lung). The ocular compartment most often involved is the uveal tract. As an uncommon metastasis location, the detection of uveal metastasis precedes the diagnosis of lung carcinoma in about 60% of cases. Treatment involves the decision of chemotherapy depending on the primary tumour concomitant in some cases with local radiotherapy.
Case report: 74-year-old man, autonomous, his wife's caregiver, former smoker since the age of 45 (80 pack-year units). With a past medical history of radical prostatectomy in 2007 due to a prostate carcinoma with biochemical recurrence in 2016 for which he underwent radiotherapy and cyproterone with clinical and analytical stability; arterial hypertension and hyperuricemia. He went to the emergency department in July 2020 due to a decrease in visual acuity in the left eye. He was evaluated by Ophthalmology, which detected an evident amaurosis of the left eye and with a uveal nodule in the left eye present at cranial CT-scan, with symptoms and signs compatible with masquerade ocular syndrome, without other cerebral lesions. After being questioned, he also reported progressive (one month) of dyspnoea and right anterior pleuritic chest pain with but which himself had devalued. On examination, he was hemodynamically stable, with no signs of respiratory distress, but with decreased breath sounds in the upper third of the right hemithorax. Upon detection of consolidation in the right thoracic hemicampus on radiography, a chest CT scan was performed which showed an apical pulmonary mass of the right upper lobe (93 × 71 × 60 mm) with pleural and intercostal muscles invasion and multiple ipsilateral pleural nodules. In the abdominal-pelvic segments it was referred multiple hepatic, right adrenal, peritoneal and retroperitoneal and bone (D10 and iliac) metastasis. It was performed a trans-thoracic lung biopsy with detection of non-small cell carcinoma of primary pulmonary origin. Stage IV non-small cell lung carcinoma was then assumed. The patient was discharged and referred for Pneumology, Pneumological Oncology and Oculoplasty, with symptomatic control and without other complications. After 2 weeks due to symptomatic worsening, decrease in appetite, increasing low back and chest pain and weight loss, hospitalization was decided for symptomatic control and decision regarding cancer treatment taking into account the frank worsening of performance status. During hospitalization, he showed progressive clinical worsening, having died after 2 weeks, with no possibility of starting targeted cancer treatment or a more exhaustive study of the ocular metastasis assumed in the left eye.

Discussion: With this clinical case, we intend to present a rare location for metastasis from lung cancer and thus alert to the early detection of primary carcinoma, usually lung or breast, soon after the detection of a uveal lesion compatible with metastasis.

Keywords: *Lung cancer. Metastasis. Masquerade syndrome.*

PC 111. LUNG CANCER, OCCUPATIONAL DISEASE OR BOTH? ABOUT A CLINICAL CASE

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Introduction: Occupational exposure to carcinogens is estimated to contribute 10% of all cases of lung cancer, assuming occupational history an important role. As it requires a long period of exposure and has a long latency period, arising at retirement age, it is important that, in addition to occupational physicians, all physicians fulfill the duty to report an occupational disease when suspected.
Case report: 68-year-old man, admitted to study dyspnea and fatigue with 1 month of evolution. He is an ex-smoker (5 UMA), with obesity, diabetes mellitus, hypertension, hyperuricemia and dyslipidemia, who lives near a quarry, has a fireplace at home and a dog and cat as pets, currently retired, with a occupational history of boiler cleaning technician and locksmith. He had crackles scattered throughout the lung fields and mild hypoxemia. Radiographically with a scattered micronodular pattern. During hospitalization, normal ACE, autoimmunity and proteinogram were found without changes. Computed tomography of the chest with diffuse micronodular pattern with priority hypothesis of sarcoidosis and less likely pneumoconiosis. Functional Respiratory Study with severe restrictive pattern and 6 Minute Walking Test with desaturation. Videobronchofibroscopy without morphological changes, normal BAL without changes. He started oxygen therapy and, on suspicion of sarcoidosis, he was discharged to the Occupational Respiratory Pathology and the Interstitium consultation, awaiting the result of bronchial and transbronchial biopsies. Occupational history was reviewed and exposure to soot, diesel particles and welding fumes was found in the maintenance and cleaning of boilers fed initially with coal and later with oil derivatives, without using any type of PPE. Biopsies concluded mucinous adenocarcinoma, excluding the hypothesis of occupational disease. It was staged as IVa, and, given the rapid deterioration of the baseline state, palliative treatment was privileged.
Discussion: All compounds identified as patient occupational exposures are considered carcinogens for the lung by IARC. Occupational exposure time verified is in line with the time necessary for the characterization of occupational cancer. However, due to the multifactorial etiology of cancer, several factors contributed to the suspicion of occupational disease not being reported, including the medical reasoning focused on treatment and the patient's retired state. Here, the urgent need to disclose the duty to participate an occupational disease by all specialties, clarification of its advantages for scientific knowledge and for the patient and his family and demystification the participation and certification process are highlighted.

Keywords: *Lung cancer. Occupational history. Occupational disease. Work-related cancer.*

PC 112. SOLITARY FIBROUS TUMOR OF THE PLEURA: A GIANT FINDING, A "BENIGN" ENTITY?

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Introduction: Solitary fibrous tumors of the pleura (SFTP) are rare mesenchymal tumor, representing < 5% of all tumors of the pleura. Due to their indolent clinical course, SFTP are usually diagnosed in the later stages of the development. However, around 12% of them are malignant. The therapy of choice is radical surgical tumor removal, namely in case of large mass, due to the compression of the lung, mediastin and vessels.
Case report: The current case discussions a 73-year-old man, referred to our pulmonary department for investigation of fatigue and dry cough, and an abnormal finding in chest radiograph. In the objective examination the patient presents a performance status of 1, eupneic at rest, with decreased breath sounds in the middle and lower third of the left hemithorax. The chest radiograph revealed a hypotransparency occupying the lower two thirds of the left hemithorax. The chest CT revealed on the left hemithorax, a bronchopulmonary lesion (11 × 14 cm), ranging from hilum to costal pleura, without mediastinal nodes with pathological dimensions. On PET CT, this mass did not present appreciable metabolic activity. The patient was submitted to bronchofibroscopy, whose transbronchial lung biopsy revealed fragments of lung parenchyma with small foci of moderate cellularity mesenchymal proliferation, consisting of cells of oval nuclei and occasionally fusiform. Immunohistochemical stains were positive for bcl2 +, CD99 +, STAT6 +, Ki67 + < 1% and negative for Actin, Desmin, EMA, CK19, TTF1, aspects consistent with SFTP. The patient was submitted to left pneumectomy, due to the invasive nature of the lesion, whose histological result confirmed SFTP with 15 × 15 × 8 cm, macroscopically with a heterogeneous aspect. Microscopically, it presented a spindle-cell pattern, with high cellularity, with areas of hemangiopericytoid pattern and numerous vessels in the sclerotic wall. With areas of necrosis and 3 mitosis/10 magnification field. Immunohistochemical study were positive for STAT-6, bcl-2 and focal CD34 and CD99. The patient was discussed in a multidisciplinary meeting, and is currently under close surveillance, given the presence of some characteristics associated with malignancy (tumor size ≥ 10 cm, high cellularity, increased intrapulmonary vasculature and areas of necrosis, despite a proliferative index (Ki67 +) < 1%).
Discussion: The differentiation between benign and malignant PTSD, in order to predict the prognosis, is generally problematic given the lack of established biomarkers, although some case series suggest some criteria. The present case highlights a SFTP with malignant characteristics, requiring a multidisciplinary approach and close surveillance in order to detect disease recurrence.

Keywords: *Solitary fibrous tumor. Pleura. Prognosis.*

PC 113. TYPICAL CARCINOID, RARE TUMOUR IN A RARE LOCATION – CASE REPORT

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Case report: Male, 40 years old, works as a plumber/welder, performance status "0". Personal history: anxious syndrome; hypersensitivity to penicillin. No usual medication. Ex-smoker 30 pack-year. Family history of digestive and gynaecological neoplastic. No changes on physical examination. On 3/2012, he presented two episodes of haemoptysis, in small amounts, with concomitant fever and rhinorrhoea. He underwent thoracic CT-angiography, which showed tissue formation with 1.2cm on the posterior face of the trachea, close to the bifurcation, with suspected oesophageal-tracheal communication. He was sent to the Pulmonology department. Complementary diagnostic and therapeutic tests: Analyses, including autoimmunity, tumour markers, immunoglobulins, and SACE without changes. Ventilatory functional study (5/2012): normal. Chest-CT (6/2012): above the bifurcation of the trachea, a solid nodular image with regular contours is observed; bilaterally small paraquacheal ganglion formations bilaterally. Somatostatin receptor scintigraphy (7/2012): hypercapture focus on tracheal dependence, without others identified. Videobronchofibroscopy (VBF) (05/2012):

irregular, vegetating tumour lesion, located in the posterior aspect of the tracheal spur, with a central position, which was biopsied, revealing hyperplasia of basal cells of the respiratory epithelium. Rigid bronchoscopy (5/2012): reddish, frankly vascularized, irregular neoplastic lesion at the level of the tracheal spur, submitted to biopsies and laser YAG therapy; anatomopathological examination revealed respiratory mucosa with a lamina dissociated by trabeculae and masses of polygonal neoplastic cells, with a mitotic index < 4%, with expression of CD56 and chromogranin: carcinoid tumour of the trachea. Results and treatment: The patient was presented to Cardiothoracic Surgery, with the aim of a curative approach. He underwent surgery on 8/2012, which consisted of resection of the carina with reimplantation of the left main bronchus (LMB) in the trachea and of the right main bronchus (RMB) on the lower right side of the trachea. It was found that, depending on the carina, there was a vegetating lesion, with endophytic growth to the terminus of the trachea and the beginning of the RMB, which spared the origin of LMB; ganglia of groups 4 and 7, with conglomerate, which were excised. Histopathological diagnosis: Carcinoid tumour pTNM T1aN-0Mx, without invasion of the resection margin. Submitted to VBF on 09/2012 and 02/2017, where an area of broncho tracheal anastomosis was observed, with no apparent changes. On 09/09 he was again submitted to VBF, without images compatible with tumour recurrence, with slight hypertrophy of cartilage aspect on the anterior face of LMB; brushed and biopsies, without identification of neoplastic cells. Chest-CT of 7/2019 without endoluminal lesions in the trachea, main bronchi, or changes in the parenchyma suggestive of secondary lesions. The patient remains asymptomatic and has no evidence of disease recurrence in the complementary tests performed.

Discussion: Tracheal tumours are rare entities, representing about 0.3% of all tumours. With this exhibition, the authors intend to highlight the clinical case of a rare tumour, in a rare location and without unambiguous symptoms, alerting to the importance of a timely diagnosis. Resection surgery, despite its complexity, is the treatment of choice in these patients, with a five-year survival rate that varies between 87 and 100%.

***Keywords**: Typical carcinoid. Trachea. Cardiothoracic surgery.*

PC 114. IMMUNOTHERAPY IN PATIENTS WITH LUNG CANCER/HIV POSITIVE – REGARDING TWO CLINICAL CASES

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Introduction: Clinical studies have led to the approval of immunotherapy based on immune checkpoint inhibitors (ICPI) for a variety of cancers. These drugs include anti-PD-1 (nivolumab, pembrolizumab), anti-PD-L1 (atezolizumab, durvalumab, avelumab) and agents associated with anti-cytotoxic T lymphocytes (CTLA-4) (ipilimumab, tremelimumab). Emerging data suggest that ICPI targeting the PD-1/PD-L1 pathway may be safe and effective in patients with HIV and cancer.

Case reports: Case 1: A 68-year-old man, in good general condition, diagnosed with squamous cell carcinoma of the right lung on 12/2018, in advanced stage, by lung metastasis and mediastinal and supraclavicular adenopathies. He showed negative PD-L1 expression in neoplastic cells. Ex-smoker (ceased 1 year before diagnosis) with smoking load of 45 pack-year. HIV positive diagnosed in 2007, under ART, CD4 -370/mm^3; viremia -0. He started therapy with platinum doublet and gemcitabine having performed 6 cycles. Due to disease progression he started Docetaxel, having started Nivolumab in 3rd line, after multidisciplinary meeting with Infectiology. Completed 4 months of therapy without complications. Due to complaints of grade 1 dermatitis and grade 2 colitis, treatment was temporarily suspended. Awaits imaging and clinical examination to assess resumption of therapy. Case 2: A 49-year-old man, in good general condition, diagnosed with advanced squamous cell carcinoma of the lung, with pulmonary and ganglionic metastasis. It showed positive PD-L1 expression in 50% of neoplastic cells. Current smoker with smoking load of 40 pack-year. He was diagnosed as HIV positive in 2003 and is currently on ART, CD4 -420/mm^3; viremia -0. He started 1st line therapy with platinum doublet and gemcitabine, having completed 6 treatments. Imaging control demonstrated the presence of a new pulmonary nodule, in context of disease progression. After a multidisciplinary discussion with colleagues from Infectiology, he started pembrolizumab in the 2nd line, currently in the 4th month of treatment, without complications. Awaits imaging control to assess response to therapy.

Discussion: HIV patients are at higher risk for developing cancer compared to the general population; this risk is partially attributed to comorbidities such as smoking, which was verified in the 2 clinical cases presented. In the past, cancers associated with HIV were indicators of profound immunodeficiency, as occurred in the presentation of Kaposi's sarcoma. With the introduction of retroviral therapy, there was a huge decrease in these presentations, and currently cancer not associated with immunodeficiency states, as in the case of lung cancer, are the most frequent. It is also known that around 80% of patients undergoing immunotherapy experience inflammatory and immunity-related adverse events, and that in patients with HIV and normal CD4 counts, this risk is similar to that of the general population. In the 2 clinical cases presented, there was a joint decision with Infeciology to start immunotherapy. It should be noted that patients remained stable, from the point of view of their immunodeficiency, with undetectable viremia and CD4 counts between 350 and 500/mm3. Further studies are needed to better understand the mechanism of action of immunotherapy in the treatment of lung cancer and concomitant HIV infection.

***Keywords**: Immunotherapy. Checkpoint inhibitors. Lung cancer. HIV.*

PC 115. CHARACTERISTICS AND SURVIVAL ANALYSIS OF ONCOGENIC DRIVEN STAGE IV NON-SMALL CELL LUNG CANCER PATIENTS

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Introduction: The discovery of specific tumor biomarkers and subsequent devlopment of targeted therapies changed the paradigm of non-small cell lung cancer (NSCLC) treatment. This study aimed to analyze and compare characteristics and survival in a cohort of mutated stage IV NSCLC patients.

Methods: Retrospective assessment of patients followed at our institution, diagnosed with stage IV CPNPC between 01-01-2017 and 31-12-2018. Final data collection on 12/31/2019 ensuring a minimum 1 year follow-up interval. Sociodemographic data, ECOG, molecular markers, PD-L1, treatment, therapeutic response and survival were recorded.

Results: Identified 272 patients diagnosed with stage IV NSCLC, 194 (71.3%) underwent genetic study, 77 (39.7%) had positive molecular markers and were selected for evaluation. All had histological diagnosis of adenocarcinoma, mean age 64 years, 39 (50.6%) were female. 46 (59.7%) smokers or ex-smokers with an average smoking load of 50 UMA. Regarding performance status, most presented ECOG 0 or 1, 25 (32.5%) and 38 (49.4%) patients, respectively. The most prevalent mutation was in the KRAS gene, found in 31 (40.3%) patients, followed by EGFR in 24 (31.2%), ALK in 16 (20.8%) and BRAF in 6 (7.8%). 14 (58.3%) patients with an EGFR mutation had a deletion in exon 19. 9 (37.5%) in exon 21 and 1 (4.2%) in exon 18. PD-L1 quantification was possible in 70 (90.9%) patients, of which 22 (31.4%) had a negative result and 27 (35.6%) had a value greater than 50%. KRAs patients were excluded for the assessment of survival and therapeutic response, since there is no targeted therapy for this mutation.

Initial therapy was targeted in 37 (80.4%) patients, 4 (8.7%) did not undergo any treatment, 3 (6.5%) underwent chemotherapy and 2 (4.4%) immunotherapy. In cases where there was progression during the follow-up period, this occurred on average at 9.2 months (minimum of 4 and maximum of 17), and in 31 (67.4%) patients no progression was documented. In the one-year evaluation, 12.5% of EGFR patients had progressed (7.1% exon 19 vs 22.2% exon 21), 43.8% of ALK and 16.6% of BRAF. Of the 46 selected patients, 24 (52.2%) were still alive at the end of the follow-up period, which gives them an overall survival of more than 12.9 months. In the evaluation at 12 months, 27 (56.7%) of these patients survived, by type of mutation we found that 71.4% of EGFR exon 19, 44.4% of EGFR exon 21, 75% of ALK and 50% of BRAF exceeded the 1-year survival barrier.
Conclusions: Mutations were detected in 39.7% of patients with stage IV NSCLC, with a higher prevalence of KRAS followed by EGFR. As described in the literature, in the EGFR mutation group, the most prevalent was the deletion in exon 19, with these patients having better progression-free survival and better overall survival compared to other mutations in the same gene. Apparent survival advantage of patients with ALK mutations, but it is not possible to draw definitive conclusions without a longer follow-up interval.

Keywords: *Non-small cell lung cancer (NSCLC). Tumor biomarkers. Targeted therapy.*

PC 116. A PLEURAL EFFUSION OF CYSTIC APPEARANCE AND LUNG CANCER

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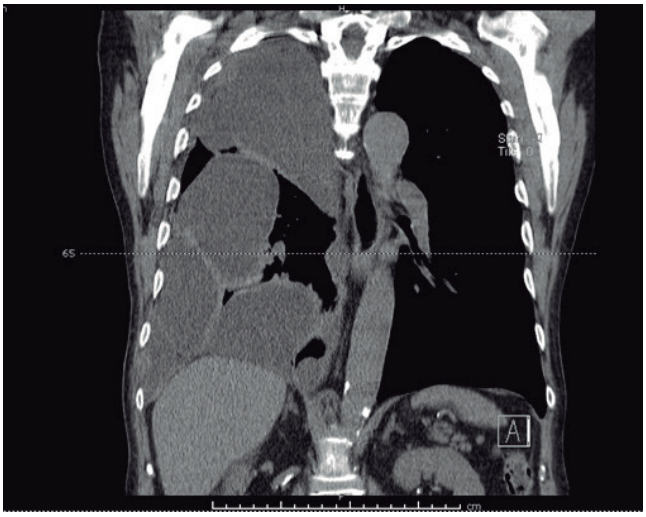
Introduction: Pleural effusion (PE) can derive from infectious and systemic diseases, cardiovascular pathology, trauma, neoplasms or medical interventions. To establish the PEs' etiology a detailed clinical history, imaging characterization and analysis of pleural fluid (PF) characteristics need to be conducted. Even so, this investigation does not always make it possible to reach a definitive diagnosis.
Case report: Male patient, 72 years old, self-employed, smoker (28 pack-years), with toxicophilic habits, namely cannabis and cocaine, with important alcoholic ingestion. The patient had a medical history of bilateral pneumonia and recurrent pleuritis about 40 years ago. In February 2020, the patient suffered a fall from his own height with frontal impact to the chest. Since then, he has presented progressive dyspnoea, with mMRC3, orthopnoea, dry cough, perception of significant weight loss and pain on the right side, below the scapula. The patient was referred to the Emergency Department after a private consultation were a chest radiograph was performed which revealed several large heterogeneous hypotransparencies with defined outlines in the right hemithorax. On physical examination, the patient was hypertensive, BP 190/100 mmHg, HR 85 bpm, polyphonic, RR 25 cpm, with oxygen saturation of 96%. Respiratory movements were asymmetric, with significant decrease of right thoracic expansion. Chest auscultation revealed reduced vesicular breath sounds in the right hemithorax and crackling fervors were heard on the right pulmonary base. Blood tests revealed leukocytosis 20 × 10^9/L, neutrophils 15 × 10^9/L, PCR 3 mg/L, GGT 223 UI/L. Chest CT scan revealed multiple apparent cystic images, involving the pleura adjacent to the rib cage, diaphragm and mediastinum as well as a solid mass (57 × 48 mm) that destroyed the 3rd right costal arch and had a contiguity effect to a thickened parietal pleural on the right apex. The patient was admitted for diagnostic assessment. Thoracentesis and pleural biopsies were performed, and a chest tube was placed. The PF had a turbid aspect, presenting characteristics of a complicated exudate: leukocytes 11,590 cél/mm^3, high proportion of polymorphonuclear cells, 37% lymphocytes, LDH > 1,995 U/L, total proteins 3 g/dL, pH 7.4, glucose < 5 mg/dL, ADA 168 UI/L. Clinical presentation, CT imaging and PF characteristics indicated the probability of a tumor, possibly originated from the lung, however, the etiology of the pleural effusion was not that clear. Previous blood cultures, Legionella and Pneumococcal antigens, atypical pneumonia serologies and Echinococcus granulosus antibodies were negative. Virological testing revealed Hepatitis C. Bacteriological and mycobacterial examinations of the PF and the mycobacterial cultures of the pleural biopsies were negative. Cytological and histological exams did not reveal neoplastic cells. A total of 1,200 cc of serous PF was drained, and the chest tube removed on the 7th day of hospitalization. The patient showed clinical and radiologic improvement, with almost complete pulmonary expansion. Transthoracic needle aspiration of the costal arch lesion was performed, revealing a poorly differentiated lung adenocarcinoma.



Discussion: Contemplating the costal mass with pleural invasion, the authors considered the diagnose of neoplastic disease. However, in this case, there is a need to underline, the atypical radiological presentation of a large and complicated pleural effusion that initially presented itself as a puzzling factor.

Keywords: *Pleural effusion. Lung tumor. Adenocarcinoma.*

PC 117. PREDICTIVE FACTORS FOR SURVIVAL IN SMALL CELL LUNG CANCER

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Introduction: Small cell lung carcinoma (SCLC) belongs to high-grade neuroendocrine tumors, representing 13% of all lung cancers, being prognosis strongly dependent on tumor stage.
Objectives: The purpose of this study was to assess factors that predict a longer survival in SCLC.
Methods: Statistical analysis of 68 patients followed in the Pulmonary Oncology Unit of the Centro Hospitalar Universitário Lisboa Norte was carried out from January 1, 2016, to December 31, 2018.
Results: Forty-eight were male, mean age was 65.9 ± 10 years and 97% of patients had smoking habits (65 ± 31 pack-year). The BMI was 25.1 ± 5.2 kg/m^2, performance status (PS) was 0-1 in 76%. Thirty-nine patients (58%) had stage IV disease, 27 stage III (40%), and one stage IA2. At initial diagnosis, 28% had liver, 19% adrenal, 16% brain (versus 46% during follow up), 15% bone and 12% contralateral lung metastasis. The onset of chemotherapy (CTX) since diagnosis was 26 ± 20 days, with 36% of patients receiving combination therapy with RT. About 82% underwent first-line CTX with platinum-etoposide, 5% with oral etoposide and 13% did not start CTX. The partial

response rate was observed in 53%, complete response in 7%, stable disease in 10%, and progressive disease in 16%. Differences in time to survival were statistically significant in the group receiving combination therapy and in patients who did thoracic RT ($p < 0.01$). Differences were also statistically significant with lower PS and patients without liver, bone, and adrenal metastasis ($p < 0.05$). No statistically significant difference was observed with CNS metastasis. Of the 56 patients who died, the mean survival was 43 ± 31 weeks. Ten patients had a survival longer than 24 months, all with PS 0-1, 80% in stage III, and 70% without CNS metastasis.
Conclusions: PS, stage, CTX/RT, response to therapy, and lack of metastasis in bone, liver, and adrenal may predict greater survival.

Keywords: *Lung cancer. Small cell lung cancer.*

PC 118. MULTIPLE PULMONARY NODULES - AN UNEXPECTED DIAGNOSIS

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CHTMAD.

Introduction: Multiple pulmonary nodules are most often metastatic, but they must be distinguished from a number of inflammatory and infectious diseases. Radiologists and pulmonologists are faced with incidental radiographic findings of pulmonary nodules on a daily basis. Deciding how to manage these findings is very important, with huge impact on treatment and prognosis according to the differential diagnosis.
Case report: Female, 47 yo. Non-smoker. Exposure to parakeets since January 2018. Diagnosis of invasive squamous cell carcinoma in March 2018. Cervico-thoraccio CT scan showed multiple nodularities, with rounded contours, the largest with about 12 mm, of an uncertain nature. The patient was admitted for Hemiglossectomy and proposed for bronchoscopy and transthoracic biopsy. She was sent to a consultation of Pulmonary Oncology. At the consultation the patient presented with dry cough and dyspnea for moderate efforts with about 1 month of evolution. She denied weight loss or other constitutional symptoms, fever or hemoptysis. During the interview it was identified an exposition to since January 2018. At this point, the patient had ceased exposure to birds since hospitalization. Bronchofibroscopy had no changes suspected of endobronchial malignancy; bronchial aspirate was amicrobial. Upon biopsy there was disappearance of dominant nodules, showing only micronodules up to 7 mm centrilobular, with no indication for biopsy at that time. Clinical and imagiological surveillance was decided. The imaging follow-up showed dimensional stability of the micronodules for 9 months, at which point the CT scan revealed an increase in the size of the nodules and cavitation, which led to transthoracic biopsy. Biopsy results revealed benign metastatic leiomyoma. The patient was evaluated by Gynecology, who proposed total hysterectomy with bilateral annexectomy, later revealing uterine leiomyomas. Imagiological reevaluation 4 months after surgery revealed partial response of the nodules.
Discussion: Benign metastatic Leiomyoma (BML) is a rare entity that affects women with a history of uterine leiomyomas, who metastasize to extrauterine sites. The most common site of metastasis is the lung, the most common presentation being multiple pulmonary nodules composed of smooth muscle cells. The diagnosis is usually incidental. The clinical course is usually indolent, and the majority of patients remain asymptomatic. We found only 10 cases in which the presentation of BML occurred in women with an intact uterus. Treatment is not standardized due to the rarity of the disease. Surveillance, oophorectomy or the hormonal treatment are options described in the literature. Lung lesions usually remain stable, with some cases of regression after treatment.

Keywords: *Lung cancer. Benign metastatic leiomyoma. Pulmonary nodules.*

PC 119. SCHWARTZ-BARTTER SYNDROME WITH A SERIOUS REFRACTORY HYPONATREMIA IN SMALL CELL LUNG CARCINOMA

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Introduction: Schwartz-Bartter syndrome, also known as the syndrome of inappropriate antidiuretic hormone secretion (SIADH), has been identified in other solid tumors, but its incidence is higher in small cell lung carcinoma (SCLC). In most cases, the diagnosis is based on a positive laboratory evaluation with no relevant symptoms.
Case report: 56-year-old male, without physical limitations, smoker of 40 packs-years. With no relevant clinical history and no usual medication. Presented in the emergency room of the hospital in his residential area due to sudden low back pain, with progressive intensification, with three days of evolution. The patient was hemodynamically stable, feverless, eupneic and SpO2 94%. Pulmonary auscultation was normal and lower limbs showed no edema. Analytically there were increased inflammatory parameters and severe hyponatremia (Na 118 mmol/L). The chest radiography showed a discoid opacity with a regular outline in apparent contact with the right hilum. The thoracic CT revealed a right supra-hilar mass with 8cm in diameter. The patient was admitted for further investigation which revealed the presence of a stage IV right upper lobe small cell lung carcinoma with hepatic and bone metastasis. The patient was transferred to our hospital, having started chemotherapy with carboplatin and etoposide. During hospitalization despite daily intravenous sodium replacement, severe hyponatremia remained refractory. An analytical investigation was carried out: sodium 107 mmol/L (the lowest value), reduced serum osmolality (216.6 mOsm/kg), inappropriate urinary hyperosmolality (489.3 mOsm/kg) and high urinary sodium excretion (143 mmol/L). Thyroid, renal and adrenal functions were maintained. The diagnosis of paraneoplastic SIADH was admitted. Restriction of water intake, dietary salt enhancement and diuretic therapy with furosemide were instituted. Despite severe chronic hyponatremia, the patient was always asymptomatic. He was discharged with a serum sodium level of 112 mmol/L maintaining the established therapy and regular medical surveillance.
Discussion: The authors underline the unusual clinical presentation of severe refractory and asymptomatic hyponatremia in a patient with SCLC.

Keywords: *Severe hyponatremia. Syndrome of inappropriate antidiuretic hormone secretion. Small cell lung carcinoma. Schwartz-Bartter syndrome.*

PC 120. ROS1 REARRANGED NON-SMALL CELL LUNG CANCER – A CENTER EXPERIENCE

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Introduction: ROS1 rearrangement has been estimated to be present in 1-2% of non-small Cell Lung Cancer (NSCLC). Although most patients initially respond to ROS1 tyrosine kinase inhibitor (TKI) crizotinib, the relapse invariably occurs and therapeutic options upon disease progression are limited. In this work, we report the experience of our center in the treatment of 3 patients with ROS-1 rearrangement NSCLC.
Case reports: Case 1: A 65-year-old male, former smoker (60 pack-year), was diagnosed in December 2014 with stage IV lung adenocarcinoma (pleural metastasis) and treated with chemotherapy

(carboplatin/pemetrexed). Imaging reassessment after 4 months showed disease progression (bone and lung) and new molecular analysis of the pleural fluid revealed ROS1 gene rearrangement. He started targeted therapy with crizotinib (250 mg, 2 times/day) with a sustained response for 34 months. At this time, he developed renal injury and crizotinib was discontinued and changed to ceritinib (750 mg/day). He also maintained prolonged stable disease with ceritinib for 21 months until neurological complaints developed in the context of progression by brain metastases. He performed cranial radiotherapy and started the 3rd line with off-label lorlatinib (100 mg/day). The treatment with this TKI was complicated by side effects at CNS level (auditory and visual hallucinations) with the need to reduce the dose (50 mg/day). Currently, after 3 months of therapy with lorlatinib, imaging studies show sustained brain and thoracic response to therapy. Case 2: A 62-year-old female, non-smoker, with stage IV lung adenocarcinoma (pleural, pericardial and hepatic metastasis) diagnosed in March 2017 and treated with chemotherapy (carboplatin/pemetrexed, 6 cycles), with disease control for 23 months. Subsequently, follow up imaging demonstrated pulmonary progression. Tumor rebiopsy revealed ROS1 gene rearrangement. Based on these findings, she was transitioned to crizotinib (250 mg, 2 times/day) with evidence of a partial response for 12 months. At this time, she experienced multiple side effects to crizotinib, including fatigue, anorexia and gastrointestinal disorders, which led to dose reduction, and further drug discontinuation. She started on 3rd line certinib off-label with partial response ongoing tree months since start of this treatment. Case 3: Female, 76 years old, non-smoking, ROS1 rearranged lung adenocarcinoma, stage IV (pleural metastasis), diagnosed in December 2018. The patient started treatment with crizotinib in the first line (250 mg, 2 times/day) maintaining a partial response currently at 18 months of treatment.

Discussion: In this report, we describe a subset of patients ROS1 rearranged non-small cell lung cancer who benefited from treatment with crizotinib and in which sequential treatment with TKI in disease progression using ceritinib and lorlatinib was associated with prolonged periods of survival.

Keywords: *ROS1. Non-small cell lung cancer.*

PC 121. LUNG CANCER DIAGNOSIS DURING COVID-19 PANDEMIC

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Introduction: During the initial phase of COVID-19 pandemic there was a reorganization of health services in order to avoid their overload and to minimize the contagion risk of new SARS-CoV2 in the population. Additionally, there was a reduction in health-care utilization by patients, particularly the emergency department, as well as a decrease in complementary and diagnostic exams. Thus, the authors would like to analyse the possible indirect effects of COVID-19 in lung cancer diagnosis.

Methods: A retrospective, comparative analysis of the anatomopathological diagnosis of primary lung/pleural cancer in Pedro Hispano's hospital, in the first 6 months of 2019 and 2020 and, particularly, during State of Emergency (SE), from March 18 to May 3 of 2020.

Results: During the first 6 months of 2020, there were 43 cancer diagnosis [18 women, mean age 67.3 ± 9.0], while in the same period of 2019 were diagnosed 67 cases [21 women, mean age 69.7 ± 9.8], which represents a significant decrease of 36% [χ^2 (1) = 5.24, p < 0.05]. During the SE period, there was a significant reduction of 57% in cancer diagnosis in comparison with the same period of 2019 [21 in 2019 versus 9 in 2020; χ^2 (1) = 4.80, p < 0.05]. There was a 22% fall in the number of diagnosis after the SE period when compared to an equivalent period of 2019, but it was not a significant reduction [14 in 2020 versus 18 in 2020; χ^2 (1) = 0.50, p = 0.480]. Comparing the SE period with its equivalent in 2019, there were no significant differences regarding the time elapsed between the first symptoms and the diagnosis [median time in 2019 = 3 months versus median time in 2020 = 1 month; p = 0.99], TNM staging [p = 0.33] or procedure performed for anatomopathological confirmation [p = 1.000], such as bronchofibroscopy [7 in 2019 versus 3 in 2020], transthoracic needle biopsy [13 in 2019 versus 6 in 2020] and pleural biopsy [1 in 2019 versus 0 in 2020].

Conclusions: During SE period, there was a significant reduction in lung/pleural cancer diagnosis. This situation is particularly relevant since diagnostic and treatment delays will play a major role in disease prognosis. The authors consider that this analysis should be extended to the post-pandemic period, thereby understanding the real impact of COVID-19 in cancer detection.

Keywords: *Diagnosis. Lung cancer. COVID-19.*

PC 122. SPONTANEOUS REGRESSION OF A LUNG CARCINOID TUMOUR

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Introduction: Lung carcinoid neoplasms are rare, accounting for ~1% of all thoracic malignancies. Spontaneous regression of neoplastic disease is referred as "the partial or complete disappearance of the tumour, in the absence of all treatment or in the presence of therapy which is considered inadequate to exert a significant influence on neoplastic disease". It is indeed a rare phenomenon for primarily thoracic malignancies.

Case report: We report a case of a 79-year-old, fully independent woman, with a history of second-hand smoke exposure, undergoing extensive study for Pulmonary Hypertension, suspected after transthoracic heart ultrasound, at Cardiology Department. She had a history of type 2 Diabetes Mellitus, dyslipidemia and primary arterial hypertension. The patient was submitted to a thoracic CT scan showing a 12 mm nodule in the right lower lobe, with spiculated margins, suspicious for malignancy. She was then referred to Thoracic Oncology department and underwent further study, with a flexible bronchoscopy showing no endobronchial lesions and PET scan showing increased FDG uptake in the referred nodule only (SUV 2.4). She underwent Transthoracic Needle Biopsy (TNB) with non-conclusive results. The follow-up CT scan revealed lesional progression, with 18x15 mm, and the patient was again submitted to TNB, which reported "morphologic and immunophenotypic aspects that favour the discrete and focal involvement by a neuroendocrine well-differentiated neuroendocrine tumour (carcinoid tumour)", with Ki67 < 2%. Pulmonary function tests revealed a mild obstruction with favourable response to inhaled bronchodilator, allowing for surgical resection. Nevertheless, the patient has refused to be submitted to surgery. She kept follow-up at our outpatient clinics and the subsequent CT scan revealed a "solid irregular nodule in the right lower lobe, measuring 12 mm without dimensional progression", after which a watchful waiting approach was initiated. The lesion showed consistent shrinking, to the longer axis of 10 mm. After 3 years of follow up, it was observed a complete nodule remission, with a CT scan reporting "in the current study, (...) at right lower lobe topography, we do not perceive nodular images".

Discussion: For this patient, over a 3-year follow-up period, we observed complete imaging resolution of a lung carcinoid tumour, with no endobronchial translation, and low metabolic activity. This phenomenon was previously described by Venkatram et. al., 2017. We hypothesised TNB may have lead to antigenic exposure and en-

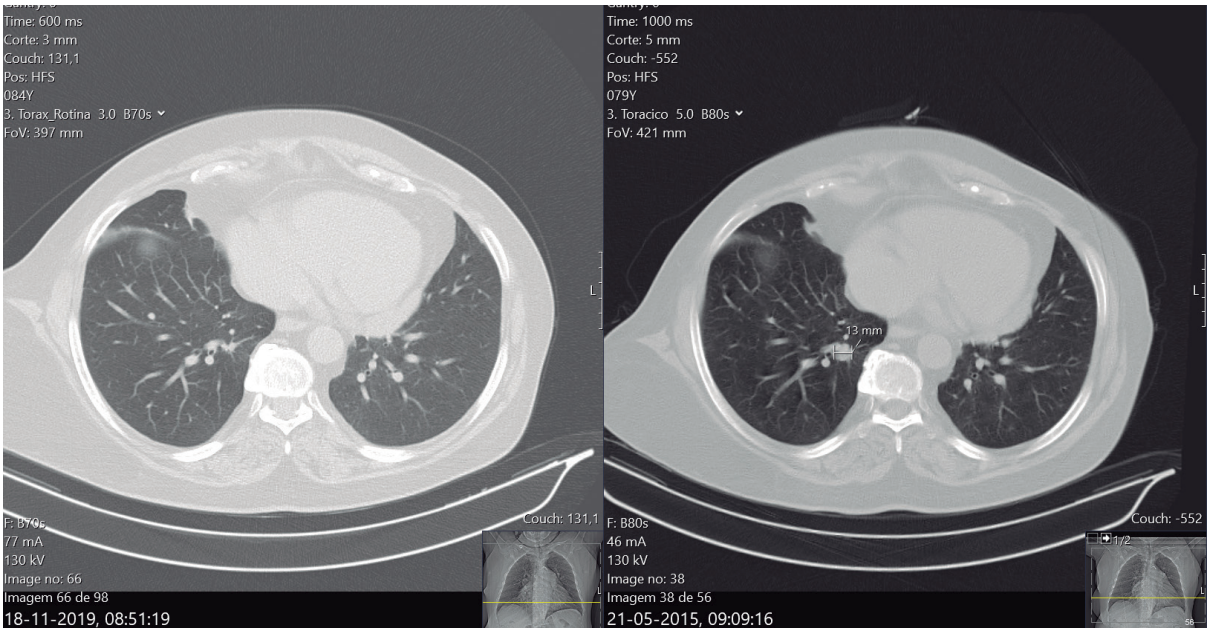

Figure PC 122

hanced the immune response against the tumour, resulting in resolution of the lesion.

***Keywords**: Lung neoplasm. Carcinoid tumour. Spontaneous regression.*

PC 123. LUNG ADENOCARCINOMA WITH COMPOUND MUTATION OF EGFR – THE ROLE OF RETREATMENT WITH 1ST-LINE TYROSINE KINASE INHIBITOR

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Introduction: Identifying sensitizing mutations in non-small cell lung carcinoma (NSCLC) allowed the development of target therapy with benefits in terms of response rate and progression free survival compared to chemotherapy (CT). However, despite a good initial response, the disease progresses invariably. Afatinib is an irreversible tyrosine kinase inhibitor of epidermal growth factor receptor (EGFR). In recent studies it was demonstrated its efficacy in rare EGFR mutations.
Case report: 69 years old female, non-smoker, with no relevant past medical history. Diagnosed with lung adenocarcinoma of right middle lobe, staging cT2N0M0, with compound EGFR mutation (exon 18 G719X e exon 20 S7681), ALK negative and PD-L1 negative. Underwent lobectomy and lymph node dissection. Anatomopathologic result revealed lung adenocarcinoma, G2, staging IIIA [pT4N0(0/2) R0M0], without linfovascular invasion. It was started on one cycle of adjuvant chemotherapy with Cisplatin and Vinorelbine. Admitted to the hospital due to neutropenic fever. The study revealed a right inferior lobe consolidation later confirmed to be adenocarcinoma relapse by bronchoalveolar lavage citology. The patient was presenting ECOG 2. 1st line palliative systemic treatment with Gefitinib 250 mg PO qd with good tolerance and stable disease as the best response. Nine months later, the patient presented asymptomatic progression of disease. The search for T790M resistance mutation was negative initially on liquid biopsy and later by tissue biopsy. Gefitinib was maintained. Four months later, the patient presented progression of lung disease with symptomatic worsening and respiratory insufficiency. Chemotherapy was initiated with Carboplatin and Pemetrexed, 3 cycles, presenting disease progression as best response. Multidisciplinary group decided off-label palliative treatment with Afatinib, which was started at the dose 40 mg PO qd, however due to G3 diarrhea it was reduced to 30 mg PO qd. Since the beginning of the treatment the patient reported a significant symptomatic improvement with respiratory insufficiency resolution and improvement of functional performance status, currently ECOG 1. Awaits imagiologic reavaliation.
Discussion: The treatment of NSCLC with compound EGFR mutations remains uncertain. There is evidence that supports the use of Afatinib in these cases, as 1st line or as a retreatment. In this case, due to absence of T790M resistance mutation and absence of response to CT, the option to use Afatinib revealed to be clinically significant.

***Keywords**: Adenocarcinoma. EGFR mutation. Gefitinib. Afatinib.*

PC 124. PEMBROLIZUMAB MONOTHERAPY AS FIRST-LINE THERAPY FOR ADVANCED NON-SMALL-CELL LUNG CANCER – A REAL LIFE STUDY

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Introduction: Pembrolizumab is a humanized monoclonal antibody against PD-1, that has antitumoral activity in non-small cell lung cancer (NSCLC). Pivotal phase III KEYNOTE-024 study showed that pembrolizumab as monotherapy significantly improved progression-free survival (primary endpoint) and overall survival in NSCLC patients with PD-L1 expression on ≥ 50% of tumor cells.
Objectives: Assess the efficacy and safety profile of Pembrolizumab in real life patients.
Methods: Retrospective study including patients with advanced NSCLC proposed for first-line treatment with pembrolizumab, recruited at our Thoracic Tumor Unit during 3 years (June 2017-June 2020). An epidemiologic characterization of patients (gender, age, smoking habits and performing status) was performed, as well as the safety profile. A progression-free survival (PFS) and overall survival (OS) were analyzed through the Kaplan-Meier method.
Results: Thirty-six patients were included in the study. Mean age was 65 ± 12 years old, the majority were male (n = 31; 86.1%) and 32 (88.8%) patients were smokers or former smokers. At diagnosis,

most patients presented a Performance Status of 1 (n = 23; 63.9%); the remaining presented scores of 0 (n = 10; 27.8%) and 2 (n = 3; 8.3%). In terms of histology, 25 had Adenocarcinoma (69.4%), 8 had Squamous Cell Carcinoma (22.2%) and 3 had not otherwise specified NCSLC (8.3%). Ninety-four percent (n = 34) of patients had stage IV NSCLC at diagnosis, 5.6% (n = 2) untreated asymptomatic brain metastases at inclusion. The PD-L1 expression presented a median of 80 (range: 30-100). The objective response rate was 41.7% (15 had partial response; none presented complete response). Eleven patients presented a stable disease control (30.6%) and in 10 patient the disease progressed (27.8%). The mean PFS was 10.6 ± 10.1 months and the OS was 13.1 ± 10.6 months. A total of 21 treatment-related adverse events (AE) occurred in 17 patients (47.2%). Of these, the most common were hypothyroidism (n = 3; 14.3%), hepatitis (n = 3; 14.3%), pneumonitis (n = 2; 9.5%) and dermatitis/rash (n = 2; 9.5%). Four patients discontinued treatment due to AEs (2 patients due to pneumonitis (50%), one patient due to colitis (25%) and one patient due to hepatitis (25%).
Conclusions: In a real-life cohort of advanced NSCLC patients (including PS 2 and untreated brain metastases), with PD-L1 ≥ 50%, pembrolizumab demonstrates similar PFS and similar safety profile observed during the clinical trials.

Keywords: *Pembrolizumab. NSCLC.*

PC 125. EMERGENT MANAGEMENT OF RECIDIVATED SUPERIOR VENA CAVA SYNDROME

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Introduction: The superior vena cava syndrome (SVCS) is a fatal complication of lung neoplasms unless timely treated. Recidivated SVCS occurs at a high rate in advanced stage neoplasms thereby creating the need for frequent retreatment. Nevertheless, the management of recidivated SVCS has suffered paradigm changes, particularly in what concerns its most immediate therapeutic actions. A case of difficult therapeutic management of a recidivated SVCS, owing to a highly complex vascular involvement by the causing neoplasm, is presented.
Case report: A 61-year-old female patient, Eastern Cooperative Oncology group performance status 3, with a progressing stage IV primary right lung adenocarcinoma was admitted to urgent care for uncontrolled pain in her right anterior hemithorax, despite being medicated with high doses of opioid analgesics. In the 10 months prior to admission, the patient had been subjected to a successful placement of a superior vena cava stent motivated by extrinsic compression from the tumoural mass. The patient exhibited facial oedema, thickening of the skin of the face and neck (peau d'orange) and extensive collateral venous circulation in the upper third of the thorax. Right jugular venous distension was apparent whilst sitting upright. Chest auscultation revealed tachycardia and bilateral rhonchi. Lastly, the patient had a positive Pemberton's sign. The blood work-up was inconspicuous, as was the arterial blood gas sampling. A chest CT angiogram was obtained on the suspicion of recidivated SVCS. This revealed luminal stenosis of the right pulmonary arterial and entrapment of the ipsilateral pulmonary veins by the tumoural mass. Furthermore, thrombosis of the right internal jugular and subclavian veins and brachiocephalic truncus was apparent, with a partial extension of the thrombus into the superior vena cava and right atrium. Lastly, there was invasion of the left atrium with deformation of the cavity and organised right hydropneumothorax. The patient was treated after thorough multidisciplinary evaluation. The patient was started on corticotherapy, as well as systemic hypocoagulation (owing to the elevated thrombus burden). Diuretics were used to treat hypervolaemia and a low threshold for antidysrhythmic medication was maintained, due to the possible involvement of the heart's conduction tissue. Lastly, the patient was subjected to right femoral vein catheterisation and thoracic phlebography - the latter corroborating the multiple filling defects and extensive collateral circulation pattern. Subsequently, a new attempt at recanalisation of the thrombosed segment was undertaken with a 16 × 100 mm stent, which proved successful in both symptomatic relief and haemodynamic status improvement.
Discussion: A case of a recidivated SVCS caused by a lung adenocarcinoma with extensive locoregional involvement is presented. The management complexity of the case was brought about by extrinsic compression by the tumour as well as intravascular and intracardiac thrombosis. For this patient, the elevated thrombus burden and need for rapid haemodynamic improvement motivated an endovascular approach in place of emergent radiotherapy - as advocated in the most recent literature for analogous situations. The medical treatment was also customised, namely regarding the need for systemic hypocoagulation despite a high risk of complications from significant vascular structural compromise and need for endovascular manipulation.

Keywords: *Superior vena cava syndrome. Recidivation. Stent.*

PC 126. ALTERAÇÕES FUNCIONAIS E IMAGIOLÓGICAS EM DOENTES POST-COVID-19-ANÁLISE A CURTO PRAZO

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Introdução: Não é ainda bem conhecida a evolução da COVID-19 após o quadro agudo, prevendo-se que em alguns casos possam persistir sequelas a nivel do aparelho respiratório.
Methods: Estudámos 12 pacientes diagnosticados com COVID-19 (5 do sexo masculino e 7 do sexo feminino) com idades compreendidas entre 41 e 77 anos. Apenas 3 dos pacientes (2 homens e uma mulher) não apresentavam qualquer comorbilidade. Os restantes apresentavam pelo menos (Hipertensão arterial, diabetes mellitus, sindrome de apneia do sono, hipercolesterolemia). Três eram ex fumadores e 1 fumador. Sete pacientes tinham tido COVID19 de grau ligeiro, 2 de grau moderado e 3 de grau grave. Todos os pacientes realizaram provas funcionais respiratórias (espirometria, pletismografia corporal e difusão) em média 2.5 meses após o diagnostico de COVID-19 (variando de 1 mês a 4 meses) e TAC torácica, em média 2.1 meses após o diagnóstico(variado entre 0 a 4 meses).
Resultados: Todos (excepto em 1 caso com síndrome ventilatório restritivo) apresentavam provas funcionais respiratórias normais. Relativamente à avaliação por TAC, verificamos 4pacientes sem alterações, e os restantes (7) apresentaram alterações residuais em vidro despolido.
Conclusões: Neste pequeno coorte de doentes post-COVID-19 com diferentes graus de gravidade, as alterações radiológicas residuais são muito mais significativas do que as alterações funcionais. O seguimento a longo prazo destes casos poderá perimitir conhecer melhor a sua evolução.

Keywords: *Covid 19. Comorbilidades. Função respiratória.*

PC 127. PNEUMONITIS AND GASTRITIS DUE TO CAUSTIC INGESTION: A REALITY IN THE COVID-19 PANDEMIC

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Introduction: The SARS-CoV-2 pandemic brought new challenges to the society, causing an increase in anxiety in the general population, as a result of the recommended prophylactic social isolation at home. The presence of COVID-19 introduced sudden and unex-

pected changes in lifestyle, for which the world population was not prepared.
Case report: Male patient, 74 years old, with depressive syndrome. In the context of prophylactic home isolation due to a pandemic, SARS-CoV-2, associated with sleep deprivation, the patient is taken to the hospital emergency department for an acute psychotic episode with suicide attempt by voluntary ingestion of caustic. He had GCS 15, hemodynamic stability, being eupneic in room air, without stridor or hypoxemia. Due to dysphonia was evaluated by Otorhinolaryngology, which identified hyperemia of the uvula, edema and hyperemia of the epiglottis as well as of the remaining laryngeal mucosa. To protect the airway, orotracheal intubation was performed and was admitted to the Intensive Respiratory Care Unit. Of the complementary diagnostic tests performed, amylaemia of 211 U/L stood out; Upper digestive endoscopy (UDE) suggestive of caustic gastritis with Zargar IIb classification, with a nasojejunal probe placed for post-pyloric feeding; performed cervico-thoraco-abdominal CT to exclude associated complications, with marked edema of the oro and hypopharynx structures with mucosal contrast uptake, areas of consolidation of the pulmonary parenchyma of the middle lobe and right lower lobe and ground glass, thickening and hypodensity of gastric wall (antro-pyloric region), with contrast uptake by the mucosa; Bronchofibroscopy and Laryngoscopy without appreciable macroscopic changes, the patient having been extubated with subsequent progressive reduction in supplemental oxygen therapy. The diagnoses of chemical pneumonitis and gastritis by voluntary ingestion of caustic in the context of attempted suicide were admitted. Due to clinical improvement, the patient was transferred to the Pulmonology ward, where he maintained respiratory and motor rehabilitation. As a complication, we highlight the nosocomial tracheobronchial infection Serratia marcescens. The patient was discharged from the hospital without the need for supplemental oxygen supply, referred to the Pulmonology, Gastroenterology, Nutrition, Physical Medicine and Rehabilitation and Psychiatry Consultations.
Discussion: The present case aims to highlight the fact that the monitoring and treatment of patients with chronic pathologies may have been poorly safeguarded in the face of this pandemic time to SARS-CoV-2, with consequent exposure of individual weaknesses. The possible need for planning and institution of measures is emphasized in order to guarantee a close and regular follow-up of patients at risk. Thus, it will be possible to prevent similar situations, reducing the number of hospitalizations and the use of multiple resources.

Keywords: *COVID-19. Pneumonitis.*

PC 128. COVID-19 AND TUBERCULOSIS - SO MUCH TO CLARIFY

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Introduction: Viral respiratory infections are a major public health issue, concerning the capacity to spread from person to person via aerosols or small-droplets, and responsible for many pandemics throughout history. On the other hand, tuberculosis (TB) is itself, one of the most comprehensively studied human diseases. Apart from the HIV-TB, there is still a lot to clarify on the interaction between viral infections and TB.
Case report: Here we present a case of a female 73 year old, former smoker, with history of arthritis rheumatoid under chronic corticosteroids in low dosis of 5mg daily, HIV negative and with no former history of tuberculosis infection. History of critical-care SARS-CoV2 pneumonia complicated with ARDS, needing mechanical ventilator support for 10 days in April of the present year. The patient was admitted 10 days after discharge for high fever and respiratory distress, with hypoxemia and thoracic CT-scan documenting consolidation with sacular bronchiectasis in upper and apical inferior right lobe and consolidation in the upper left lobe with several negative nasopharyngeal exudate results for SARS-CoV2. After detection of Mycobacterium tuberculosis bacilli in sputum and later cultural confirmation in sputum and bronchioalveolar lavage, the patient started anti-Tb regimen. No mutations nor resistances detected for Isoniazid or Rifampicin in the molecular evaluation. The patient completed 3 months of therapy with Isoniazid, Rifampicin, Ethambutol and Pyrazinamide, and changed to Isoniazid and Rifampicin after negative sputum baciloscopy and favorable clinical evolution. The patient was discharged from the isolation respiratory unit after 4 months of internment, with clinical and radiological improvement, maintaining however radiological aspects suggestive of post infectious organizing pneumonia.
Discussion: Accordingly to a first cohort of 49 patients co-infected with tuberculosis and COVID-19, in subjects the COVID-19 diagnosis preceded the tuberculosis one. It is yet not clear if the SARS-CoV2 virus is a factor of predisposal to tuberculosis active infection, but historically we know similar cases occurred. It is widely known that viral infections cause transient immunosupression and, therefore, predispose to reactivation of latent agents or bacterial, fungal or mycobacterial commensals. This case recalls the importance of clinical suspicion and tuberculosis screening, especially in respiratory cases.

Keywords: *COVID19. Pulmonary tuberculosis. SARS-CoV2. Viral infections.*

PC 129. NEGATIVE NASOPHARYNGEAL TEST FOR SARS-COV-2: IS IT A SAFETY NET FOR THE BRONCHOSCOPIST?

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Introduction: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the causative agent of coronavirus disease 2019 (COVID-19). Real-time RT-PCR detection of SARS-CoV-2 from samples collected by nasopharyngeal/oropharyngeal swabs have become the standard tool for the diagnosis of COVID-19. Although test sensitivity is presumed to be high, stage of illness and sample source among patients with confirmed disease are known factors of variability of SARS-CoV-2 detection. Open airway procedures such as bronchoscopy pose a significant risk to healthcare professionals since the virus is transmitted via droplets. Organizations issued guidelines and recommendations to ensure the safety of procedures. Few studies have evaluated the differences between respiratory viral detection by polymerase chain reaction (PCR) from upper and lower respiratory tract samples. By testing both specimens concurrently, we expect to understand if lower respiratory tract infection occurs in the presence of a negative nasopharyngeal (NP) swab.
Objectives: Determine the safety of a negative nasopharyngeal (NP) swab for SARS-CoV-2 to perform routine bronchoscopic procedures
Methods: Retrospective study including all patients with bronchoalveolar lavage fluid (BALF) specimens clinically tested for SARS-CoV-2 in our Endoscopy Unit, between April and May 2020. All patients denied SARS-CoV-2 symptomatology through a symptom questionnaire, and had no history of contact with an infected person. Temperature was measured once each patient entered the brohnchoscopy unit, and only afebrile patients underwent broncoscopy. All patients performed a nasopharyngeal (NP) swab 24-48h before bronchoscopy, that tested negative.
Results: Eleven patients were included in the study, presenting an average age of 56 years (SD 12 years); 6 (54.5%) patients were male.

Six patients were submitted to flexible bronchoscopy and 5 to rigid bronchoscopy. After evaluation of BALF samples, all were found to be negative for SARS-CoV-2 virus.
Conclusions: In our study none of the patients with negative NP PCR test for SARS-CoV-2 tested positive for SARS-CoV-2 in bronchoalveolar lavage fluid (BALF). These results suggest that the combination of a negative NF swab test result and absence of suggestive symptoms make the presence of COVID-19 improbable. Nevertheless, further studies with larger samples must be performed to understand the safety of a reduction of protective equipment level during the procedures..

Keywords: *COVID-19. Broncoscopy.*

PC 130. DESQUAMATIVE INTERSTITIAL PNEUMONIA: CHARACTERIZATION OF A PORTUGUESE COHORT

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Introduction: Desquamative Interstitial Pneumonia (DIP) is a rare idiopathic interstitial pneumonia, associated with smoking. In literature, data regarding epidemiology, clinical evolution and treatment are still scarce.
Objectives: Descriptive analysis of patients with DIP who meet the diagnostic criteria according to the ERS/ATS/JRS/ALAT guidelines of 2018.
Methods: Observational and retrospective study of patients with DIP. Clinical, imaging, bronchoalveolar lavage (BAL) and histological features were reviewed, as well as data on therapy and evolution.
Results: Thirty-nine patients with histological features of DIP were included. The majority were male (53.8%), with a mean age at diagnosis of 57.2 ± 10.1 years. All of them had a current or previous history of smoking, with a median of 40 pack-years (min-max.: 15-120), with 89.7% as active smokers. Two former-smokers were exposed to welding fumes (n = 1) and birds (n = 1). Six smoking patients had autoimmune disorders, namely systemic lupus erythematosus (n = 2), rheumatoid arthritis (n = 1), ankylosing spondylitis (n = 1), Crohn's disease spondyloarthritis (n = 1) and relapsing polychondritis (n = 1). Two cases of HBV (n = 1) and HCV (n = 1) infection were observed. The main clinical symptoms included cough and dyspnea on exertion (35.9%). Crackles were identified in 35.9% of cases. At diagnosis, diffusion capacity impairment (mean DLCO 60.1 ± 18.8% of the predicted value) was the most observed functional change (86.5%), and 28.2% had an obstructive pattern. In high-resolution computed tomography, a predominantly ground-glass pattern was observed (66.7%), in some cases associated with centrilobular emphysema (41%), with preferentially basal and bilateral distribution (73%). In 4 cases, there were signs of lung fibrosis with honeycombing and/or traction bronchiolectasis, in addition to ground-glass opacities. BAL total and differential cell count showed an increased count due to macrophage proliferation, with 66.7% presenting eosinophilia (median 2%, min-max: 0-23%). Histology was obtained by transbronchial cryobiopsy in 33 (84.6%) patients and by surgical lung biopsy in the remaining. Regarding therapeutic approach, only 31.3% (n = 11) stopped smoking; 38.5% (n = 15) started corticosteroid prescription, with an average treatment duration of 15.6 ± 9.8 months. Of the 34 patients with follow-up data, 17.6% (n = 6) evolved with clinical, functional and imaging progression. There was no statistically significant association between treatment with corticosteroids and a favorable clinical outcome.
Conclusions: The data from this DIP cohort is in line with what is considered in the literature, such as its primary association with smoking, but can also occur in the context of other exposures or autoimmune disorders. Although the clinical course is generally favorable, there is a subgroup with disease progression, regardless of the therapeutic measures.

Keywords: *Desquamative interstitial pneumonia. Smoking. Cryobiopsy. Corticosteroids.*

PC 131. OCCUPATIONAL HYPERSENSITIVITY PNEUMONITIS: THE RELEVANCE OF MEDICAL HISTORY

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Introduction: Hypersensitivity pneumonitis (HP) is an immunological disorder, secondary to prolonged and repeated exposure to organic material or other substances. Its evolution is dependent on the degree of sensitization, intensity and duration of exposure. There are some cases in the literature about the relation of HP, metalworking fluids aerosols and, possibly, their microbiological contamination.
Case report: Male, 55 years, non-smoker, clinical history of arterial hypertension, dyslipidemia and pulmonary tuberculosis treated during childhood. Occupational history of work in an automobile factory in the past 6 months. In February 2020, he went to the emergency department with complaints in the past 3 months of dry cough, dyspnea progressively worse and weight loss. Had been treated with 2 different antibiotics, with no clinical improvement. On clinical examination, he was subfebrile (T 37.4 ºC), bibasilar crackles on chest auscultation and a pO2 of 59 mmHg. Mild leukocytosis and elevated C-reactive protein on laboratory examination. Chest radiograph with diffuse and bilateral pulmonary infiltrates and computed tomography revealed extensive and predominantly peribronchovascular ground-glass opacities, on upper lobes and apical segments of lower lobes. He started antibiotherapy with piperacillin-tazobactam iv. Bronchofibroscopy didn't reveal endobronchial lesions. Microbiology and cytology analysis of BAL and bronchial aspirate were negative and immunocytological study of BAL revealed marked lymphocytosis (67.6%) and mild neutrophilia and eosinophilia. Workup for autoimmune diseases and serological tests were negative. After investigation on a detailed occupational history, we found out that the patient was exposed to steam from refrigeration oils during the process of cleaning metallic pieces. The presumptive diagnosis of acute hypersensitivity pneumonitis due to occupational background was made. The patient was discharged clinically improved and with a decrease in the pulmonary infiltrates. Despite eviction of the causative agent, complaints of dyspnea on exertion persisted as well as pulmonary infiltrates and low DLCO, so he started treatment with corticosteroids (dosage of 0.5 mg/kg/day) with good clinical, radiological and functional evolution.
Discussion: HP due to metalworking fluids aerosols is often underdiagnosed and obtaining a detailed anamnesis is essential, with special highlight to potential exposures in the workplace. Early recognition of this nosological entity, with exposure eviction, will be crucial for the treatment.

Keywords: *Hypersensitivity pneumonitis. Occupational. Diffuse lung disease.*

PC 132. A SILENT ENTITY CALLED GLILD

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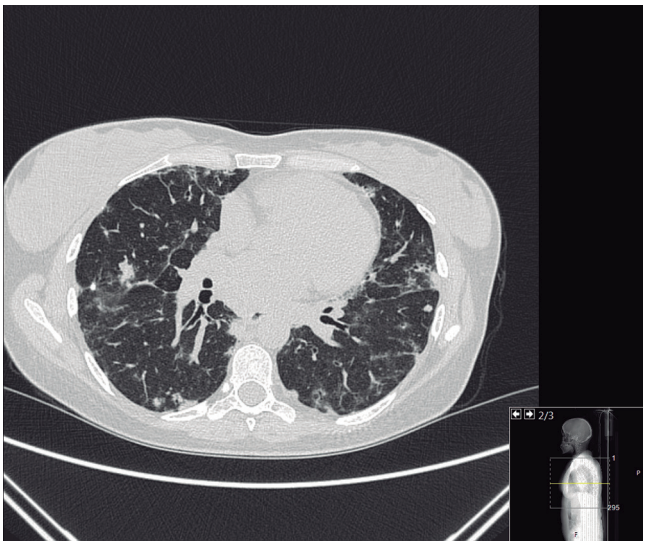
Introduction: Common variable immunodeficiency (CVID) is the second most common primary immunodeficiency, which may be associated with infectious and non-infectious complications, the lat-



ter as a consequence of immune dysregulation. Granulomatous-lymphocytic interstitial lung disease (GLILD) is a complication of CVID, occurring in 25% of these patients, with a higher prevalence in adolescents/young adults and associated with an unfavorable prognosis. Immunoglobulin G replacement is the standard therapy for preventing infectious complications, but non-infectious complications generally require immunosuppressive treatment.

Case report: A 35-year-old female patient, non-smoker, designer, with a personal history of asthma and allergic rhinitis, and frequent respiratory infections predominantly in childhood, with the need for antibiotics, but without the need for hospitalization. She went to the emergency department presenting a respiratory infection, without a relevant epidemiological context, having performed a chest X-ray that showed an interstitial pattern, which has already been documented retrospectively. She was medicated with antibiotics and referred for a pulmonology appointment. Chest CT confirmed the presence of bilateral pulmonary nodules with ground-glass opacification, predominantly peripheral, with retractable fibro-interstitial thickening predominantly on inferior lobes, bronchiectasis, and mediastinal and hilar adenopathies. The respiratory functional study revealed a moderate decrease in DLCO. Analytically she presented hypogammaglobulinemia and a significant deficit of IgG, IgA, and IgM consistent with the diagnosis of CVID, having been referred to the Immunology and Allergy Department (Immunodeficiency Hospital) where she started immunoglobulin replacement therapy. Bronchofibroscopy with bronchoalveolar lavage showed 45% lymphocytosis. She was subsequently submitted to atypical resection of the right upper lobe and middle lobe, with histological findings suggestive of follicular lymphoid hyperplasia. PET-CT was also performed showing increased uptake of FDG-F18 in mediastinal and hilar adenopathies, in bilateral pulmonary nodules and also nodules in the spleen. She also performed a bone marrow biopsy that did not show significant changes and repeated a transthoracic lung biopsy that excluded lymphoma and infectious pathologies. The transjugular liver biopsy performed showed the presence of regenerative nodular hyperplasia, multiple epithelioid granulomas, with aspects consistent with CVID. Imaging follow up showed a variability of lung lesions with findings suggestive of organizing pneumonia and NSIP, with a diagnosis of GLILD. She was proposed to start corticotherapy.

Discussion: CVID should be excluded in young patients with recurrent infections. GLILD is a rare non-infectious complication that can arise in these patients and should be considered in patients with recurrent respiratory infections and bilateral pulmonary nodular lesions. This clinical case demonstrates how challenging the diagnosis is and how it implies the exclusion of infectious pathologies and lymphoma.

Keywords: *Common variable immunodeficiency. Follicular lymphoid hyperplasia. GLILD.*