# 120. Clinical issues in malignant pleural effusions

## P1253

Mesothelioma diagnosis in a district general hospital

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**Background:** Malignant mesothelioma(MM) is a rare cancer with poor prognosis, posing a diagnostic challenge to respiratory physicians.

Aim: We analysed our current diagnostic process for MM to assess the diagnostic yield of different investigative modalities.

Methods: We analysed the effectiveness of various diagnostic modalities including pleural fluid cytology, CT or ultrasound guided(USG) core and thoracoscopically guided pleural biopsy over the last five years.

**Results:** Of 55 patients diagnosed with MM since January 2007, 54 patients had confirmed cytological or histological diagnosis. 33(60%) patients had pleural fluid sent for cytology of which 17(51%) were positive for MM, 11(33%) negative, 3(9%) suspicious, 2(6%) showed a lung primary which eventually turned out to be MM and 3% inconclusive. 15 patients presented with pleural thickening or mass without pleural effusion. These patients were diagnosed with CT or USG biopsies. 26 patients underwent VATS.

Interestingly, the percentage of patients that have been diagnosed positively on cytology has risen year on year(fig.1). PET scanning identifed an appropriate biopsy site in 4 of 8 patients scanned.





#### P1254

# Malignant mesothelioma. A survival analysis of 123 consecutive cases at an occupational clinic

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Aim: To describe the asbestos exposure, to identify factors associated to the prognosis, and to calculate the medial survival time in 123 consecutive patients (1984-2010) with patological verified diagnosis of malignant mesothelioma (MM). Method: From medical records we identified age, sex, asbestos fibres exposure, localisation and subtypes of MM, performance status, and treatment.

**Results:** Median age was 65 years (min. 41 - max. 90) and 111 (90.2%) were men and 12 (9.8%) were women. We identified asbestos exposure in 112 (91%) patients. Major contributers were industries of shipbuilding (30%), construction (22%), asbestos-cement (17%), metal (8%), and automobile repair (6%). 2 years survival for MM in pleura % (95% CI) were: 19 (12-30), peritoneum: 24 (8-74), pleura and peritoneum/pericardium: 25 (5-100), and tunica vaginalis: 100 (100-100). In Cox regression survival analysis for all cases but tunica vaginalis (N=120) significant variables for mortality rate ratio (MRR) (95% CI) were male sex: 2.26 (1.10-5.08) and performance status > 2: 5.01 (2.66-9.43). In a model restricted to MM in pleura (N=78) significant variables were male sex: 6.95 (1.29-37.38), sakromatiod subtype: 6.10 (1.93-19.33), performance status > 1: 4.64 (2.08-10.37), and time after trimodal treatment 0.25 (0.07-0.96).

**Conclusion:** Asbestos exposure was identified in 91% of the patients, shipbuilding, constructing-, and asbestos-cement industry accounted for >2/3 of the cases. 2 years survival for MM was 19% to 25% in pleura and peritoneum, in tunica vaginalis 100%. Male sex, low performance status, and sarkomatiod subtype lower while trimodal treatment enhance survival time.

#### P1255

#### Prognostic factors and survival in malignant pleural mesothelioma at a large tertiary referral center in Turkey

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Malignant pleural mesothelioma is a rare tumor but increasing incidance and poor prognosis despite new therapy modalities.

In this study we aimed to investigate the effects of various pretreatment clinical and laboratory characteristics on survival of patients with malignant pleural mesothelioma (MPM).

During last five years, 125 histological proven MPM cases were evaluated at large tertiary refferal center in eastern part of Turkey.

Patients age, gender, performance score, histology, asbestos exposure, smoking history, sympyoms, plasma platelet count, haemoglobin, white blood cell (WBC), plasma LDH level, stages were evaluted in both multivariate and univariate analysis. Univariate analysis showed that patients with extensive stage, N2 nodal invasion and M1 metastasis have a worse prognosis. Multivariate Cox regression analysis showed that sarcomatous histology has found to be indicators of worse prognosis (HR 1, % 95 CI 1.015- 2.19, p= 0.017).

As a result; The patients with extensive stage, n2 nodal inavsion and M1 metastasis were found to related with shorter survival. Sarcomatous histology were found as an indipendent worse prognostic factor in MPM.

#### P1256

# Malignant pleural mesothelioma stage III and IV: Retrospective analysis of ten years in a central hospital

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**Introduction:** Pleural mesothelioma (PM) is the most frequent malignant primary tumor of pleura. The incidence in Western Europe is still rising due to the prolonged latency of the disease.

Aims: Determine demographic, epidemiological, histological and therapeutical aspects of malignant PM in stage III and IV. Evaluate survival rates.

**Methods:** The study was conducted in an European central hospital covering approximately 475.000 inhabitants. We performed a retrospective analysis of cases diagnosed in our department over a period of 10 years. Survival analysis was performed using Kaplan Meier method and Cox regression.

**Results:** We diagnosed 32 cases in stages III/IV (91,5% of total), 84.4% men, mean age  $65.5\pm10.2$  years, 50% with current or past exposure to tobacco. Exposure to asbestos was reported in 56.3% and had occurred, on average,  $41.4\pm10.8$  years before. Approximately 56% of exposures were associated with building construction and mechanics. In 87.5% the diagnosis was obtained with video-assisted thoracic surgery. Histology was epithelioid in 84%. All patients received chemotherapy: 53.1% carboplatin+gemcitabine, 37.5% pemetrexed+cisplatin and 9.4% cisplatin+gemcitabine. Hematological toxicity occurred in 18.8% and non haematological toxicity in 12.5% (grade 3/4). Prophylactic local radiotherapy was performed in 75%. Median survival was 51.6 $\pm$ 9.4 weeks. There was no statistically significant difference according to chemotherapy regimen.

**Conclusion:** Malignant PM must be considered, particularly in men involved in mechanics, even with unrecognized or remote exposure to asbestos. In our series no difference was seen combining platinum analogs with gencitabine or pemetrexed.

#### P1257

# Pleural atypical mesothelial hyperplasia: An early stage of pleural malignant mesothelioma?

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Mesothelioma is a neoplastic process most often secondary to asbestos exposure. Atypical mesothelial hyperplasia (AMH) is thought to be a benign process in reaction to various processes, including infectious pleurisy and recurring transudative pleural effusion. However, it is unknown if there might be a link between AMH and malignant pleural mesothelioma (MPM).

Herein, we present the case of a 69 year-old patient with documented asbestos exposure in whom MPM was diagnosed four months after a first diagnosis of AMH.

Thoracoscopy showed inflammation of the posterior parietal pleura and white lymphangitis of the anterior pleura, without nodule or any other suspicious lesion. Biopsies taken from the anterior pleura showed AMH.

Two months later, the patient returned with a recurring right sided effusion. CT-scan revealed a subcarinal lymph node measuring 15x8mm and a pleural effusion with partial atelectasis of the right lower and middle lobes.

Repeat thoracoscopy was performed, four months after the initial one.

The pleura was dramatically changed, with numerous nodules and neoplastic lymphangitis. Multiple biopsies were performed on the diaphragmatic and posterior pleura. Histologic features were compatible with epithelioid MPM.

How MPM evolves from normal pleura is still debated, despite the acknowledge-

ment of the causal relation with asbestos. Whether mesothelioma evolves from atypical hyperplasia, as epithelium-derived cancer of other origins, remains to be elucidated.

**Conclusion:** Diagnosis of MPM relies on pleural biopsy specimens. Thoracoscopy is particularly useful in guiding pleural biopsies and in symptomatic improvement if talc pleurodesis is performed.

# P1258

# Role of medical thoracoscopy in diagnosis of recurrent undiagnosed pleural effusion

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**Background:** The urge for the resurgence of thoracoscopic techniques came essentially from the depressive situation of chronic exudates not diagnosed in 20-40% of cases after using the ordinary diagnostic methods.

Methods: This study comprised 20 cases with exudative pleural effusion, all of them were subjected to full history taking, clinical examination, laboratory investigations, radiological examination (chest x- ray and CT), abdominal US, chest US if needed, tuberculin test, sputum for AFB, ABG and ECG. For all patients, pleural tapping and biochemical, cytological, bacteriological and immunological examinations for the pleural aspirates, as well as blind Abrams needle pleural biopsy and histopathological examination were done. The etiologic diagnosis of pleural effusion was not settled after all these investigations, and thus, medical thoracoscopy, under local anesthesia, was carried out for each patient.

**Results:** The mean age of patients was 57.6 years. The diagnosis was achieved in 85% of cases, while 15% of cases diagnosed as non specific pleuritis. The result of biopsies were 65% malignancy (20% mesothelioma, 35% of metastatic adenocarcinoma, 5% of either lymphoma or thymoma), and 35% of cases were nonmalignant, 15% undiagnosed, 10% TB, 5% of either empyma or RA). 20% of cases had complication in the form of 10% malposition of the intercostal tube and 5% of either hematoma or infection at the site of tube entry.

**Conclusion:** Medical thoracoscopy, under local anesthesia and conscious sedation, is an effective procedure for diagnosing the underlying etiology of recurrent pleural effusion of unknown etiology, with minimal complications.

## P1259

# Study of thoracoscopic pleural biopsy for nondiagnostic pleural effusion YuJin Kim, Sun Young Kyung, Sang Pyo Lee, Sung Hwan Jeong, Shin

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**Background:** We performed thoracentesis and pleural biopsy by cope needle to find cause of exudative pleural effusion. Usually about 20% of them can't find cause. We study thoracoscopic biopsy for nondianostic patients and charateristics of diseases.

Method: We enrolled patients from April 2004 to May 2010. We included patients with nondiagnostic pleural effusion through sputum study, thoracentesis, washing microbiologic study and cytology by bronchoscopy. Twenty-six patients were performed thoracoscopic pleural biopsy.

**Result:** Twenty-four patients were identified. Their mean age was  $60.5\pm15.3$ years, and 16(66.7%) of the patients were men. Four patients weren't performed thoracentesis. Charateristics of pleural effusion were lymphodominent (15; 75%), poly-dominent(2;10%), eosinophil dominant (1;5%) and unknown(2;10%). Final diagnosis of patients with undiagnostic pleural effusion were malignant effusion (n=14, 58.3%), Tb pleuray(n=3, 12.5%), chronic inflammation and fibrosis(n=5, 20.8%) and hemorrhagic effusion and eosinophilic effusion (n=2, 8.3%). The most common cause of malignant effusion was secondary not primary lung cancer. Metastatic effusion were 5 patients (35.7%). Malignant mesothelioma were 3patients (21.4%). adenocarcinoma of unknown origin were 2patients (14.3%). Primary lung cancer were 4patients (25.8%).

**Conclusion:** Fifteen patients(58.3%) of nondianostic effusion were diagnosed malignant effusion. In These 15 patients, secondary malignant effusion were 10. patients(74.3%). In Conclusion, we consider thoracoscopic biopsy and systemic examination to identified nondianostic pleural effusion.

#### P1260

#### Medical thoracoscopy experience: 3 years on

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Aim: To describe the qualitative and quantitative experience and outcomes at 3 years of medical thoracoscopy (MT) in a DGH. Methods: Retrospective case series review of all consecutive adult patients under-

going MT.

**Results:** To date, 39 MTs have been done between Sept '09 and Sept '11. Median age 71 yrs (range:28.6-87 years); 28 (72%) male. Median age of patients with malignancy 70 (range:48.3-87 years); 15 male (65%). MT was non-diagnostic in 3 cases (7.7%) with one confirmed as metastatic carcinoma on CTGBx. 9/10 MPM were pleurodesed; 8(89%) successful All 13 non-MPM were pleurodesed; 9(70%)

# SUNDAY, SEPTEMBER 2ND 2012



#### Figure 2

successful. Overall pleurodesis success rate was 77.3%. Excluding the two patients who died within 30 days, pleurodesis success rate is 85% (17/20) for all malignant pleural effusion.

**Conclusions:** Success rates are reported in literature 82.1% - 95% in patients having a single procedure and one pleurodesis only, similar to ours but for the 2 patients aged 72 and 76 years who died; having significant co-morbidities and confirmed metastatic carcinomas with poor pre-op performance status of 3.

MT was well tolerated in our cohort of patients who had median age of 70, and success rates varied dependent on pathology; better in MPM than carcinoma. Qualitatively, the most significant result was the duration of pleural fluid recurrence free days that patients achieved, thus mitigating symptoms and avoiding further or repeated invasive pleural interventions.

#### P1261

#### Results of treatment of the metastatic pleural effusion

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Metastatic pleural effusion is big health, social and personal problem. Prognosis of patients is 1 to 60 months which is according underling disease, stage of the disease, treatment response, characteristics of the patients and their reserve. We analyze 60 patients with confirmed malignant pleural effusion: 28 patients with breast cancer, 14 with lung cancer, 8 with mesotelioma, 5 with gastric carcinoma, and 5 with other malignant lesions. Mean age were 56 years.

At this 60 patients we have done 194 procedures.

We analyze effects of thoracocentesis only (60), placing pleurocat (37), placing of thoracic drain (54), VATS with talk pudrage(13) and thoracic drain and thoracic drainage with slurry talk pleurodesis (14).

Recurrence of pleural effusion, febrile condition, appearing of the empyema, problems with heart, dispnea, life treating conditions were followed at all patients. **Results:** Recurrence of pleural effusion were detected at 71,2%, where the best results were with use of VATS with talk pudrage (53,8%), than is thoracic drainage with slurry talk pleurodesis with success rate of 50%. With only placing of drain success rate was 29,6% or with pleurocat placing 27%. With thoracocentesis only, no one has had success.

Unwanted conditions were detected the most frequently at thoracic drainage with slurry talk pleurodesis where were detected 14,3% heart problems, 35,7% dispnea and respiratory symptoms, 35,7% febrile conditions with septic conditions.

**Conclusion:** VATS with talk pudrage give the best results with control of the malignant pleural effusion, but need hospitalization and general anesthesia procedure, procedure which was not recommended for many patients which is in bad general conditions.

## P1262

In an era where VATS and medical thoracoscopy is readily accessible – Does diagnostic thoracocentesis still have a role in diagnosing malignant pleural effusions?

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**Introduction:** The diagnostic sensitivity of medical thoracoscopy is reported as 92.6% and is approximately 95% for video-assisted thoracoscopic surgery (VATS). Complication rates are acceptably low (2.3% for medical thoracoscopy and <1% for VATS). We wished to ascertain the sensitivity of diagnostic thoracocentesis, compared to VATS for malignant pleural effusions.

**Method:** We retrospectively looked at all pleural fluid samples taken from a diagnostic thoracocentesis and specimens sent from a VATS procedure over a 12 month period in patients who had a confirmed diagnosis of malignancy. The presence of malignant cells, pathological diagnosis and the primary site of malignancy was recorded.

**Results:** Over a 12 month period 34 patients underwent VATs and an additional 88 patients had a diagnostic thoracocentesis performed for a malignant pleural effusion. 88.2% (N=30) had a pathological diagnosis made in samples taken during VATs and 73.6% (n=64) had a diagnosis of pleural malignancy confirmed on cytology taken from a diagnostic aspirate.

**Conclusion:** With the increased availability of medical thoracoscopy and VATS it is tempting to incorporate these into the first step of a diagnostic algorithm for suspected malignant effusions. However the high diagnostic yield revealed by our retrospective analysis of pleural fluid cytology illustrates that diagnostic thoracocentesis and pleural fluid cytology remains a valid initial step in the diagnostic pathway. It is more cost effective, less time consuming and less invasive for the patient.

## P1263

# Effectiveness and safety of endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) in the diagnosis of mediastinal and hilar lymphoadenopathy

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Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is used to biopsy of enlarged lymphnodes in the mediastinum and hili for staging of patients with lung cancer and definitive diagnosis of lymphadenopathy. EBUS-TBNA has been reported as less-invasive examination compared with mediastinoscopy and as high sensitivity and specifity in the diagnosis.

To study the usefulness of EBUS-TBNA in diagnosis of lymphadenopathy in the mediastinum and hili, we analyzed the 90 cases of EBUS-TBNA which were performed in our hospital from August 2007 to July 2010.

There were 90 cases of undiagnosed lymphadenopathy in the mediastinum and hili. They were 53 cases of suspected metastasis of lung cancer, 37 cases of suspected sarcoidosis. In the cases of suspected metastasis of lung cancer, the sensitivity of EBUS-TBNA was 85.4%, and the specificity was 100% and the accuracy was 86.5%. In the cases of suspected sarcoidosis, the sensitivity was 92%, the specificity was 90% and accuracy was 92.3%. Furthermore, we made diagnosis of EGFR gene mutation and EML4-ALK fusion gene by the specimen obtained by EBUS-TBNA. As adverse effects, one case of lymphadenitis was observed, but mediastinitis was not induced.

We conclude that EBUS-TBNA is a powerful instrument for diagnosis and staging of lung cancer and for diagnosis of sarcoidosis and other inflammatory and granulomatous diseases with lymphadenopathy manifested in the mediastinum and hili, and that EBUS-TBNA is safe and less-invasive.

P1264



### P1265

# Combination therapy with intrapleural doxycycline and talc in reduced doses for pleurodesis

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**Background:** We hypothesized that combining doxycycline and talc in half the usual doses would be synergistic in inducing pleurodesis.

**Objective:** The aim of the study was to evaluate safety and efficacy of low-dose doxycycline combined with low-dose talc for pleurodesis.

**Methods:** In a prospective study, 20 consecutive patients with recurrent and biopsy-proven malignant effusions and 4 patients with recurrent pneumothorax were included. All pleurodesis was performed with talc plus doxycycline as the sclerosing agents. Doses of doxycycline (250 mg) and talc (2.5 grams) were half the "usual" doses. the sclerosing agents were administered via tube thoracostomy. Post-pleurodesis postero-anterior (PA) radiographs were obtained after tube removal and 30 days following the procedure. Successful therapy was defined as a complete absence or minor re-accumulation of pleural effusion one month after pleurodesis.

**Results:** Twenty –four cases were identified (8 women, 16 men, Mean age was 65.2 years). No immediate perioperative complications were noted. Chest tube duration averaged  $4.3\pm2.5$  days. Length of stay after the procedure  $4.8\pm3.2$  days. Eight patients (33%) reported persistence or worsening dyspnea in the immediate postoperative period. Only one developed respiratory distress; no any parenchymal changes on chest radiography and no required ventilatory support. Other immediate postoperative events included chest pain in 10 patients (42%) and fever in 2(8%) patients. Twenty patients (83%) had successful pleurodesis and 4 (17%) failed. **Conclusions:** The combination of low-dose doxycycline with low-dose tale appears to be a safe and rational approach to pleurodesis with reasonable side-effects.

#### P1266

Iodopovidone: An effective agent pleurodesis used through chest tube Kotti Amina, <u>Daghfous Hafaoua</u>, Snan Houda, Saad Soumaya, Kahloul Olfa, Tritar Fatma. Pneumolgy C, Abderrahmane Mami Hospital, Ariana, Tunisia Pneumology C, Abderrahmane Mami Hospital, Ariana, Tunisia Pneumology C, Abderrahmane Mami Hospital, Ariana, Tunisia

**Background:** Most variety of pleural irritants have been used for pleurodesis, the ideal agent should produce pleurodesis effectively, safely, and in shortest possible time.

**Objective:** Compare efficacy and safety of iodopovidone used through chest tube to other agents used via thoracoscopy.

**Patients and methods:** Fifty six patients (35 men and 21 women) with malignant pleural effusion (n=40) or pneumothorax (n=10) aged from 5 to 76 years, were distributed into 2 groups:

- G1: 40 patients treated with injecting iodopovidone 3 successively days (20 ml iodopovidone + 30 ml saline solution) via chest tube

- G2: 16 patients had pleurodesis through thoracoscopy using talc.

**Results:** Time to pleurodesis was similar in 2 groups ( $8\pm3$  vs  $6\pm2$  days). As the mean length of hospitalization ( $31,13\pm22$  vs  $27,4\pm15$  days) and mean length of drainage ( $8,8\pm6,1$  days vs 10,6\pm8,1 days), there is no statistically difference in the 2 groups. A complete response with no recurrence was similar in 2 groups obtained in 44 (78,5%) of cases. After instillation of the sclerosing agent, intense cough and dyspnea were noted only in G1 (n= 3), and 2 patients had systemic hypotension and intense pleuritic pain. Local complications were observed in 10 cases (18%) with no statistically difference in 2 groups: pneumothorax (n= 7) and empyema (n= 3). Chest pain evaluated with visual scale measurement after removed tube was similar in 2 groups. As the mean length of follow-up, there is no statistically difference ( $5\pm2.9$  and  $6,3\pm1.8$  months).

**Conclusion:** Iodopovidone is an effective, safe, cheap, easily available alternative to achieve chemical pleurodesis in cases of recurrent, incapacitating effusions, regardless of etiology.

### P1267

### Pleural effusions in lung cancer

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The most common cause of malignant effusions in males is lung cancer. Malignant effusions are the result of spread of lung cancer to pleura or dissemination of metastatic tumour to one of the pleural surfaces. Paramalignant effusions are the result of lung cancer, but not a result of spread of malignant diseases to pleura. **Methods:** The study group comprised of patients in territory of Montenegro, in time period from 01.01.2008 to 31.07.2011. All patients with pleural effusions had their pleural liquid citologically tested, and histological processing of samples of pleural tissue obtained by blind needle biopsy (66 patients) or VATS (8 patients) was done. Descriptive statistical method and retrospective study were used. **Results:** Total number of newly diagnosed cases of lung cancer was 585 (squamous cell ca - 361 (62%); SCLC- 139 (23.5%) adenoca 85– (14.5%)). Paramalignant

effusion was diagnosed in 33 patients (5.64%). Paramalignant effusion was found in 17 patients with squamous cell ca (4.7%), in 9 patients with SCLC (6.5%) and in 3 patients with adenoca (3.6%). No statistical significance was found when correlating frequency of paramalignant effusion to hystological type of lung cancer (p>0.05). Malignant effusion was diagnosed in 55 patients. Malignant effusion was the most common in pts suffering from adenoca (found in 26 patients – 30.6%, p<0.01), while malignant effusions were found in 13 pts with squamous cell ca (3.6%), and in SCLC in 9 patients (6.5%).

**Discussion:** No statistical significance was found when trying to correlate frequency of paramalignant effusion in different histological types of lung cancer. In the group of patients with malignant effusion adenoca is the most common causal factor of spread of malignant disease to pleura.

#### P1268

#### Chloroma as a mediastinal mass with bronchial infiltration and severe stenosis of the left main bronchus

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We report the case of a 46 years old women, who presented to our hospital with cough, chest pain and exertional dyspnea for 1 month. The physical examination showed inspiratory stridor located on the left hemithorax. The laboratory tests showed no pathological changes. The thorax computer tomography showed a large mediastinal mass with compression of the left main bronchus.



Bronchoscopy revealed an almost complete obstruction of the left main stem bronchus with extensive infiltration of the mucosa by tumorous tissue. The EBUS-TBNA biopsies demonstrated the suspect of a neoplasm of hematologic origin. The patient was transferred to a referral center for hemato-oncology and underwent a bone narrow biopsy. It could be diagnosed an acute myeloid leukemia. The mediastinal mass and bronchial infiltration corresponded to a chloroma (myeloid sarcoma) as a rare and severe initial manifestation of the disease.

Chloroma is an extramedullary, solid tumor which occurs in association with myeloproliferative or leukemic disorders. It affects 3-8% of patients with acute myeloid leukemia and can present as the initial manifestation of hematologic malignicy. The anatomic distribution includes bone, nerve, lymph node, and skin, but may involve a variety of soft tissues. Pulmonary and mediastinal involvement is rare. Just one case has yet been reported in literature with an identical pattern of airway infiltration.

#### P1269

# Ectopic heterotopic mediastinal thyroid tissue mimicking lung cancer

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**Objective:** Ectopic intrathoracic thyroid is a very rare presentation of a mediastinal mass, comprising 1% of mediastinal tumors and can be distinguished from restosternal goiter or secondary intrathoracic goiter from the fact that the former receives its blood supply from mediastinal vessels rather than the neck and is not connected to the cervical thyroid. We present a series of 9 patients with heterotopic mediastinal thyroid mimicking lung cancer.

**Material:** Nine patients, 5 male and 4 female ranging in age between 56 and 79 years were admitted at our hospital. All patients but two were asymptomatic. Chest radiography revealed a mass in the superior middle or posterior mediastinum, in 2 cases with tracheal deviation. CT scan revealed a mass and further investigation took place with MRI. Preoperative staging was negative for metastatic disease in all cases and ultrasonography, scintigram and 1131 uptake precluded the possible existence of thyroid tissue. Thyroid function tests were also normal.

**Results:** All patients were led to surgery and were submitted either to lateral mini-thoracotomy (n=5), or cervical incision (n=3) or thoracoscopy (n=1). In all cases there was an encapsulated mass with blood supply from intrathoracic vessels

and histopathology revealed thyroid. The postoperative course was uneventful and no recurrence was observed in a follow up of 2 months to 4 years

Conclusion: Although malignant transformation in heterotopic thyroid tissue is extremely rare, these masses should be resected in order to put the diagnosis and to avoid later complications such as progressive enlargement, hemorrhage within the mass causing respiratory failure, and compression of vital mediastinal organs.

### P1270

# Endobronchial ultrasound transbronchial needle aspiration at Aberdeen

**Royal Infirmary: How are we doing?** <u>David Miller<sup>1</sup></u>, Pratheega Mahendra<sup>1</sup>, Valerie Bruce<sup>1</sup>, Keith Kerr<sup>2</sup>, Mary McKean<sup>2</sup>, Mahendran Chetty<sup>1</sup>, Graeme Currie<sup>1</sup>. <sup>1</sup>Chest Clinic C, Aberdeen Royal Infirmary, Aberdeen, United Kingdom; <sup>2</sup>Department of Pathology, Aberdeen Royal Infirmary, Aberdeen, United Kingdom

Background: Endobronchial ultrasound transbronchial needle aspiration(EBUS-TBNA) is a more convenient alternative to mediastinoscopy for sampling mediastinal lymph nodes. We describe the demographics, results and diagnostic sensitivity of EBUS-TBNA in the 1st 100 procedures performed.

Methods: Since the service began in 2010, patient age, gender, length of procedure, sedative doses, numbers of passes for each node and results were recorded and retrospectively analysed.

Results: Of 100 patients, 66 were male with mean age 62 years (range 22-88). Mean procedure duration was 16 minutes, and median doses of midazolam and fentanyl were 4mg and 100mcg respectively. 142 lymph nodes were sampled with median number of passes of 4 per node.

Lymphoid material was obtained from 126 (86%) of all nodes sampled. A pathological abnormality was found in 73 patients: NSCLC (n=34), SCLC (n=20), granulomatous inflammation (n=14), possible lymphoma (n=1) and metastatic neck (n=1), urological (n=2) and breast cancer (n=1). In the remaining 27 patients, no lymph node was sampled in 10 and lymph node was sampled in 17 cases with no abnormality noted; of the latter, 9 were true negatives. The diagnostic sensitivity for all 100 cases was 81% (77% in the first 50 procedures versus 84% in the remainder).

Conclusions: A variety of cell types can be identified using EBUS-TBNA. Our overall diagnostic sensitivity was 81% with the top of the learning curve almost reached after 50 procedures. The high diagnostic sensitivity implies that many mediastinoscopies can be avoided with potential financial savings.

### P1271

#### Ideal volume sampling in the diagnosis of malignant pleural effusions Vasilis Anastasakos, Mpisirtzoglou Danai, Zetos Athanasio

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Introduction: Management of pleural effusion is based on established guidelines deriving from scientific committees and experts on pleural diseases all over the world. Nevertheless true consensus on volume sampling in malignant pleural effusions has not yet been achieved. Only few publications have been published over the past 10 years. Further studies should take place in order to clarify this essential point in the management of malignant pleural effusions.

Hypothesis: 20 to 40 ml of pleural fluid could improve cytology yield in high risk malignancy patients.

Methods and materials: Patients with at least medium sized pleural effusion and high risk for malignancy are enrolled.

Pleural fluid is extracted as follows:

1. 10cc of pleural fluid sent for cell typing and ALB, tPr, LDH, CHOL, TG analysis

2. 20cc of pleural fluid extracted and placed as sample A

3. 50cc of pleural fluid extracted and placed as sample B 4. 150cc of pleural fluid should be extracted and placed as sample C

Samples A, B and C are sent for cytology

Cytology results include the following:

1. Positivity or negativity for malignancy

2. Malignant cells numerosity (rare, infrequent, frequent, dense)

First data in our research strongly support our hypothesis and we feel that with our sample growing we will be able to show that a larger quantity of pleural fluid will not improve results (whilst will affect costs and laboratory man hours), but 20 to 40 ml could play a role in diagnosis and should be the target quantity. We hope our study will help to decrease time to diagnosis, reduce cost (less paracentesis, less adverse effects, less hospitalization time) and provide material for evidence based guideline development in the future.