# TUESDAY, SEPTEMBER 4TH 2012

#### Table 2. TA group compare with control group after 6 months follow up

Groups	Airway diameter (mm)	Stricture rate (%)	Dyspnea score	Clinical stationary time (days)
TA	8.70±2.52	29.17±14.55	$0.55 \pm 0.76$	98.75±55.58
Control	$4.50 \pm 1.64$	64.80±13.35	$2.70 \pm 0.92$	$11.35 \pm 4.39$
Statistics	6.658	8.161	7.844	7.070
p<0.01.				

follow-up, 16 patients remain stable after treatment, besides 4 patients appear restenosis in treatment group, compare with Control group 20 cases restenosis. Restenosis interphase time and clinical stabilization time was markedly increased. No local injections related complications was recodred.

**Conclusion:** Local injections of TA therapy combined with traditional interventional techniques for BAS has good curative effect. It shows advantages in long-term efficacy, few side-effects, and good safety.

### P3352

# Role of single port medical pleuroscopy using optical biopsy forceps in diagnosing malignant pleural effusion

Debajyoti Bhattacharyya<sup>1</sup>, M.S. Barthwal<sup>1</sup>, C.D.S Katoch<sup>1</sup>, Anand Arora<sup>2</sup>.

<sup>1</sup>Respiratory Medicine, Miltary Hospital (CardioThoracic Centre), Pune,

Maharastra, India; <sup>2</sup>Pathology, Miltary Hospital (CardioThoracic Centre), Pune, Maharastra, India

**Introduction:** Medical pleuroscopy is useful in early confirmation of malignant pleural effusion. Optical biopsy forceps helps in getting adequate number and amount of specimen through a single port giving a small incision.

Aims and objectives: To assess the efficacy and safety of single port medical pleuroscopy using optical biopsy forceps in diagnosing malignant pleural effusion. Methods: This is a retrospective study of all patients who had been histopathologically proved to have malignant pleural effusion by single port diagnostic medical pleuroscopy using optical biopsy forceps between January 2009 and January 2012 in a tertiary care hospital in India.

**Results:** 39 patients (25 males and 14 females) underwent medical pleuroscopy during the period of study with a possible diagnosis of malignant pleural effusion. Mean age of patients was 54.4 years (range: 38-82 years). 37 patients (94.8%) were confirmed to have malignancy by medical pleuroscopic biopsy. Adenocarcinoma was the commonest malignancy – 15 (40.5%), followed by squamous cell carcinoma – 11 (29.7%), small cell carcinoma – 5 (13.5%), poorly differentiated carcinoma – 3 (8.1%), malignant mesothelioma – 2 (5.4%), and non-Hodgkin's lymphoma (2.7%). Reports were inconclusive in two patients. VATS biopsy subsequently confirmed them to be adenocarcinoma and mesothelioma respectively. Complications encountered during the perioperative period included: superficial wound infection in one (2.5%), and air leaks more than 7 days in two (5.1%) cases. **Conclusions:** Single port medical pleuroscopy using optical biopsy forceps has a high diagnostic rate in malignant pleural effusion. The procedure is also safe.

# P3353

# Medical thoracoscopy performed using FOB & single rigid port under conscious sedation

<u>Vijay Kumar Chennamchetty</u>, Aparna Maramreddy, Anamika, Abhijeet Ingle, Amitha Reddy Reddy. *Department of Pulmonary, Critical Care & Sleep Medicine, Yashoda Super Speciality Hospitals, Hyderabad, AP, India* 

### Background & Objectives:

Pleural effusion can remain undiagnosed following thoracentesis in a significant number of cases. We evaluated our own technique for performing thoracoscopy under conscious sedation using a 7mm port and a flexible fiber-optic bronchoscope for the diagnosis of patients with unilateral pleural effusion. We evaluated cost of care by comparing the same procedure with rigid thoracoscopy.

**Methods:** Twenty four patients with unilateral pleural effusion who underwent thoracoscopy under conscious sedation using a 7mm rigid port and a flexible fiber optic bronchoscope during April 2011 to Feb 2012 were retrospectively studied. Two patients who underwent rigid thoracoscopy for evalution of undiagnosed effusion were taken to consideration for cost analysis.

**Results:** Thoracoscopy done under conscious sedation using FOB and a 7mm port is a safe procedure to perform in the diagnosis of pleural effusion in all cases. The visualization of the pleura and lung using this instrumentation was adequate for to acquire an impression. A forceps biopsy of the pleura could therefore be easily and effectively performed. Cost analysis does reflects 3fold decrease in cost to patient.

**Conclusion:** This technique is considered to have clinical utility as a diagnostic tool for evaluation of pleural effusion. This method is safe and effective. As procedure was performed with FOB, it is user friendly for a pulmonologist and inexpensive to the patient.

# 373. Medical access to the pleura

### P3351

# A pilot study for benign central airway stenosis: Local injection of triamcinolone acetonide therapy

Yu Chen, Shiyue Li. Respiratory Medicine, The First Affiliated Hospital of GuangZhou Medical College, GuangZhou, GuangDong, China

**Objectives:** To evaluate the efficacy and security of local injection of Triamcinolone acetonide(TA) for benign central airway stenosis(BAS).

**Methods:** Forty intractable BAS patients were selected and averagely divided into treatment group and control group. Local injection of TA was uesd to cover entire stenosis lesions. Interventional procedures were combined to manage complicated airway stenosis. After a 6 months follow-up, compared two groups with airway diameter, stricture rate, dyspnea score, and clinical stabilizationbefore and after the treatment.

Results: No statistically significant differences in the two groups. A 6 months

Table 1. TA group treatment results

Evaluation time	Airway diameter (mm)	Stricture rate (%)	Dyspnea score	Clinical stationary time (days)
Before TA treatment	3.10±1.83	77.08±13.63	3.45±0.51	10.95±5.49
After TA treatment	$9.30 \pm 2.34$	$26.82{\pm}12.69$	$0.35 \pm 0.49$	98.75±55.58
Statistics	13.102	10.455	20.743	5.724

p < 0.01

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## P3354

# Usefulness of semiflexble thoracoscopy under local anesthesia for patients with unknown pleural effusion

Yuichi Yamada, Gen Yamada, Hirotaka Nishikiori, Koji Kuronuma, Mitsuo Otsuka, Hiroki Takahashi. Third Department of Internal Medicine, Sapporo Medical University School of Medicine, Sapporo, Japan

**Background:** Pleural effusion may arise from a wide range of diseases. However, it is difficult to make a diagnosis by thoracocentesis or needle biopsy. Recently, semiflexible thoracoscopy has been performed under local anesthesia for diagnosis or treatment of pleural diseases.

**Objectives:** To determine the benefit and safety of the thoracoscopy for the diagnosis of unknown pleural effusion or the treatment of pleural diseases. **Method:** Between April 2001 and June 2011, we performed the thoracoscopy

**Method:** Between April 2001 and June 2011, we performed the thoracoscopy in 39 patients (31 men and 8 women) who could not be diagnosed by cytologic and bacteriologic examinations of pleural effusion by thoracocentesis. We used a semiflexible thoracoscope (LFT 240; Olympus Medical Systems Co., Tokyo, Japan) for the observations of pleural cavity, and obtained pleural biopsies from abnormal areas of parietal pleura.

**Results:** We underwent semiflexble thoracoscopy in 29 patients for diagnosis of pleural diseases and 22 cases were provided the pathological diagnosis (6 pleuritis carcinomatosa, 2 malignant mesothelioma, 1 synobital sarcoma, 7 empyema, 3 tuberculous pleural effusion, 2 rheumatoid arthritis and 1 sarcoidosis). In addition, semiflexible thoracoscopy was performed for the treatment in 10 cases with acute or chronic empyema for the purpose of detachment of fibrin, destruction and removal of the septum.

**Conclusions:** Semiflexible thoracoscopy under local anesthesia can be safely performed by pulmonary physicians. It is considered an easy and useful examination for the diagnosis of pleural diseases.

### P3355

When to image post-thoracoscopy?

<u>Arthee Yogendran</u>, Uzma Faruqi, Sara Jamel, Claire Malcolm, Gihan Hettiarachchi, Alex West. *Respiratory Medicine, Medway Maritime Hospital, Gillingham, Kent, United Kingdom* 

**Introduction:** Chest radiography day 1 post-thoracoscopy to review lung reexpansion is suggested by the British Thoracic Society <sup>1</sup>. Practice in the UK has been compared to areas where medical thoracoscopy is a day case procedure.

**Objectives:** To review the length of stay, time to lung re-inflation and survival interval following thoracoscopy in a district general hospital.

**Methods:** A retrospective study identified patients undergoing medical thoracoscopy between 01/06/2007 and 31/12/2011. Casenotes and electronic records were reviewed to obtain tissue diagnosis, imaging intervals and length of stay post-procedure. Images were reviewed to determine rates of lung re-inflation and fluid re-accumulation.

**Results:** 123 patients were identified. Pleural biopsies were taken at 95% of procedures, with a diagnostic sensitivity of 97%. 47% of cases were positive for malignant mesothelioma. Time to initial chest radiography ranged from 0-4 days. First imaging at day 1 had 63% re-inflation compared to 78% at day 2 post-thoracoscopy. Persistent effusion was noted in 56 cases, pneumothorax in 11 and both were present in 21. Length of stay averaged 4.4 days, with 45% patients discharged within 2 days.



**Conclusion:** Overall 30% of patients had not achieved lung re-inflation at first imaging, up to 2 days post-thoracoscopy. Initial imaging on day 2 provides time for re-inflation whilst avoiding repeated chest radiographs. **Reference:** 

### [1] Local Anaesthetic Thoracoscopy, BTS Pleural Disease Guideline, 2010.

## P3356

Cryobiopsy versus forceps biopsy during semirigid thoracoscopy

Ales Rozman, Mateja Marc-Malovrh, Luka Camlek, Izidor Kern. Endoscopy/Pulmonology, University Clinic, Golnik, Slovenia

Performing biopsies during semirigid thoracoscopy is often a difficult and timeconsuming task due to the low mechanical power when using dedicated flexible forceps. Biopsies by cryoprobe could overcome these limitations. The purpose of this study was to compare the feasibility, size and quality of the specimens obtained by cryobiopsy with specimens obtained by flexible forceps.

Fifteen patients with pleural effusion of unknown origin that underwent semirigid thoracoscopy were included. Biopsies were obtained using a flexible autoclavable cryoprobe 20416-032 (ERBE, Germany) 2.4 mm in diameter or flexible FB-55CD-1 Olympus forceps.

Tissue samples were obtained from all 15 patients by forceps and from 14 patients by cryobiopsy, three with each technique per patient. The median size of the cryobiopsy sample was 17.1 (3.9–86.7) mm<sup>2</sup> and 9.1 (2.3-27.2) mm<sup>2</sup> of the forceps sample. Cryobiopsy samples were easier for interpretation (p = 0.003) than forceps biopsy samples. The amount of artifacts wasn't statistically different between groups (p = 0.285). Diagnostic yield was the same by both techniques in patients, where both types of samples were obtained. There were no bleeding problems after the biopsies.

Cryobiopsy during semirigid thoracoscopy appears to be an effective and safe new method for obtaining biopsy specimens from the pleural cavity. Cryobiopsy samples were bigger than samples, obtained by flexible forceps. The quality and diagnostic yield were comparable.

### P3357

# Use and comparison of a fiber optic bronchoscope as an alternative to a purpose built thoracoscope

Chatura Wirasinghe, Duminda Yasarathne, Prasanna Wijerathene, Dushantha Madegedara. Respiratory Medicine, Teaching Hospital, Kandy, Central Province, Sri Lanka

**Background:** Mechanical failure of (fiber optic thoracoscope) FOT at our unit, which was an established investigation in pleural disease led to a search for an alternative.

**Objective:** To demonstrate the use of a fiber optic bronchoscope (FOB) for local anesthetic thoracoscopy and to compare it with a purpose build thoracoscope.

**Methodology:** The new procedure was similar to standard local anesthetic thoracoscopy with the difference being an 8mm internal diameter endotracheal tube used as the trochar thorough which FOB was inserted. 22 patients with undiagnosed unilateral plural effusion underwent the procedure from July to November 2011. Their results were compared to those obtained using purpose built FOT in 22 consecutive patients from January 2011.

**Results:** Modified FOB thoracoscopy was successful in 77% of patients while purpose built FOT was successful in 86%. All failures were attributed to lungs not collapsing due to adhesions. Time taken to empty fluid from the pleural cavity and total procedure times were longer with FOB. The biopsy size using FOB was smaller. Histological diagnosis of malignancy was made in 27% (6) in FOB group and in FOT group it was 32% (7). Histological evidence of TB was obtained 22%(5) in FOB group and 27%(6) in the FOT group. A universal complication in both groups was post procedure pain which was relieved with use of simple analgesics. Other procedure related complications were not encountered in both groups.

**Conclusion:** A modified procedure with FOB can be used safely with a reasonable success rate to investigate pleural disease by experienced operators although there are limitations.

## P3358

Talc pleurodesis in malignant pleural effusions: A 5-year experience

<u>João Filipe Cruz</u><sup>1</sup>, Daniela Alves<sup>1</sup>, Cecília Pacheco<sup>1</sup>, Manuel Vaz<sup>2</sup>, Lourdes Iglésias<sup>1</sup>, Adriana Magalhães<sup>2</sup>. <sup>1</sup>Pneumology, Hospital de Braga, Braga, Portugal; <sup>2</sup>Pneumology, Hospital de São João, Porto, Portugal

**Introduction:** Talc pleurodesis is an excellent therapeutic option in patients with malignant pleural effusions (MPE), however the best method to perform it remains a matter of debate.

**Objectives:** To compare two different methods of talc instillation in terms of clinical efficacy and safety in patients with MPE.

**Methods:** Retrospective study of patients with MPE submitted to talc pleurodesis between 2006 and 2010. Two different techniques were compared: thoracoscopic talc poudrage (TP) and talc slurry through the chest tube (TS).

**Results:** A total of 93 patients were evaluated (47 TP group, 46 TS group). Clinical demographics and primary malignancies were similar in both groups. The overall complication rate was 54,8%, without significant difference between the two groups. Most frequent complications were thoracic pain (32,3%), fever (24,7%), subcutaneous emphysema (7,5%) and prolonged drainage (5,4%). No serious complication or death was registered. The average length of hospital stay was 8 days in the TP group vs 19,7 days in the TS group (p=0,001). The average chest drain and suction duration was 5,6 days in the TP group vs 10 days in the TS group (p=0,001). Among patients alive at 30 days, efficacy in local control of MPE was 82,5% in the TP group (33/40) vs 72,1% in the TS group (31/43) (p=0,259). There was no difference in mortality between the two groups (p=0,336).

**Conclusions:** Talc pleurodesis was a safe and effective palliative treatment for patients with MPEs. Patients who underwent thoracoscopic talc poudrage had a significant shorter length of hospital stay and chest drainage duration. There was no difference regarding complications, efficacy and mortality.

### P3359

# The change of complication rate in chemical pleurodesis after replacement of talc preparation from small to large particle size – A longitudinal cohort study

<u>Hoi Nam Tse</u><sup>1</sup>, Ka Yan Wai<sup>1</sup>, King Ying Wong<sup>2</sup>, Kwok Sang Yee<sup>2</sup>, Lai Yun Ng<sup>1</sup>. <sup>1</sup>Medical Department, Kwong Wah Hospital, Hong Kong, Hong Kong; <sup>2</sup>Department of TB and Chest Unit, Wong Tai Sin Hospital, Hong Kong, Hong Kong

# **Background:** Talc particle size is an important determining factor for complication in talc pleurodesis.

Aims: To investigate any change in complication rate for talc pleurodesis after replacement of talc preparation from small to large particle size

**Methods:** It is a longitudinal cohort study conducted in Kwong Wah Hospital, Hong Kong. Talc preparation was changed from small (mean diameter <10 \mum) to large particle size (Steritalc<sup>©</sup>: mean size: 31.3 \mum) since 1st Jan,10. Patients who received new talc preparation(1st Jan 10 to 31st Dec,11) were compared to those received old talc preparation (1st Jan07 to 31st Dec09). The safety profile and efficacy of pleurodesis were compared between the 2 groups.

**Results:** 141 patients were recruited. Since the change of talc prepration from small to large particle size, ARDS was totally eliminated. Post-pleurodesis fever was significantly reduced from 30.7 to 9.4%, resulting in a significant drop in antibiotic use.

Table 1. Complications rate in chemical pleurodesis since the change of talc preparation from small to large particle size

	Small particle size talc (n=88) (before)	Large particle size talc (n=53) (after)
ARDS	(3/88) 3.4%	(0/53) 0%
Post-procedure Fever (temp >38 within 24 hours		
after procedure)	(27/88) 30.7%	(5/53) 9.4%
Use of antibiotic as a result of post-pleurodesis fever	(12/88) 13.6%	(2/53) 3.8%
Mean decrease in SpO2 after chemical pleurodesis	-2.4%	0.0%

Moreover, the efficacy of chemical pleurodesis was not jeopardized.

**Conclusions:** There was a significant reduction in complication rates in chemical pleurodesis after replacement of the talc preparation from small to large particle size.

## P3360

## Chest drain safety checklist

Burhan Khan, Hamid Aminy Raouf. Department of Respiratory Medicine, Darent Valley Hospital, Dartford, Kent, United Kingdom

**Background:** Intercostal chest drains are amongst the most invasive procedure a medic will undertake; not infrequently by a junior trainee. Adverse events unfortunately are well reported with chest drains, the UK's National Patient Safety Agency (NPSA) reported 12 deaths and 768 events of harm all related to chest drains occurring between Jan '05 and Mar '08.

A never event is "a serious, largely preventable patient safety incident that should not occur if the available preventative measures have been implemented by healthcare providers". Never Events are preventable because: there is guidance that explains what the care or treatment should be; there is guidance to explain how risks and harm can be prevented; and there has been adequate notice and support to put systems in place to prevent them from happening. The NPSA Never Events list includes wrong site surgery, and in the respiratory arena this encompasses the infrequent but always regrettable insertion of a chest drain on the wrong side

Aim: To devise a chest drain proforma to improve patient safety and prevent adverse and never events.

Methodology: We used an iterative model building upon the WHO surgical safety checklist.

**Results:** We devised and piloted a "Chest drain safety check list" utilising a 2-person stepwise approach.





Right sided pneumothorax

Figure 1

Left sided intercostal chest drain

**Conclusion:** This checklist represents a process that should lead to a systematic and safe approach to inserting chest drains.



Abstract P3360 - Figure 2

P3361

# The need for including pleural procedure sessions in respiratory physicians' job planning in the United Kingdom

Rahul Mukherjee<sup>1</sup>, Shiva Bikmalla<sup>1</sup>, Vikas Punamiya<sup>1</sup>, Milan Bhattacharya<sup>2</sup>, Richard Steyn<sup>3</sup>. <sup>1</sup>Department of Respiratory Medicine & Physiology, Heart of England NHS Foundation Trust, Birmingham, West Midlands, United Kingdom; <sup>2</sup>Department of Thoracic Surgery, Heart of England NHS Foundation Trust, Birmingham, West Midlands, United Kingdom; <sup>3</sup>Department of Respiratory Medicine, Milton Keynes NHS Foundation Trust, Milton Keynes, United Kingdom

**Background:** In 2008, the UK National Patient Safety Agency (NPSA) issued an alert for risks associated with insertion of intercostal chest drains (ICD) and highlighted issues related to insertion by non-specialists and by inadequately trained or supervised junior doctors.

Methods: In an acute hospital (catchment population about 280000), an education campaign targeted at emergency medicine on-call doctors was started in August 2008 questioning the need for out-of-hours insertion of ICD. Three physician-led elective sessions/week were introduced in November 2008; trainees were directly supervised by experienced physicians (consultants); all unavoidably out-of-hours ICD procedures were reviewed by respiratory consultants.

**Results:** Fifty-two patients underwent ICD insertion in 5 months: 18 (34.62%) for pneumothorax; 34 (65.38%) for effusions. Of the 34 with pleural effusions, 31 (91.17%) had radiological imaging pre-procedure. The 3 (8.82%) who had ICDs without prior radiological imaging were due to suspected empyema thoracis in the emergency department. Only 2 ICDs (3.84%) - both for pneumothoraces - were complicated by infection of the pleural space. No other major complications occurred in the remaining 50 patients. Initial ICD was displaced in 8 patients meeding further ICD insertions (15.38%), confirming a significant improvement with respect to the local average.

**Conclusion:** The successful pilot of consultant-led ICD-insertion sessions led to reduced length of stay, improved outcomes and improved trainee feedback - hence our policy recommendation to include pleural procedure sessions in physician job plans which is currently not undertaken uniformly in the UK.

# P3362

# Medical thoracoscopy: Learning curve of a new service

<u>Arun Khanna</u>, Sanjay Adlakha, George Mabeza, Irfan Wahedna, Robert Berg, Chris Whale. *Respiratory Medicine, Derby Hospital NHS Trust, Derby, Derbyshire, United Kingdom* 

**Introduction:** Many hospitals have, or plan to establish, a Medical Thoracoscopy (MT) service. Whilst high diagnostic yields and low adverse event rates are widely reported<sup>1</sup>, little is known about the learning curve attributed to the procedure. **Aims:** To examine the diagnostic rate per annum ('hit rate') and learning curve of

a Medical Thoracoscopy service in a large District General Hospital. Methods: We retrospectively analysed data from our first 100 consecutive MT's

since November 2008. Procedures were carried out by three Consultants with experience of Medical Thoracoscopy, one Consultant learning the technique and trainees under close supervision. 'Hit-rate' per year was calculated and trend analysed to determine the learning curve.

**Results:** 'Hit-rate' was 65% in year 1, 79% in year 2 and 89% in year 3, demonstrating a steep learning curve for this skill. Histologically confirmed diagnosis included mesothelioma (n=34), metastatic lung cancer (n=20; predominantly non-small cell lung cancer), other metastatic malignancy (n=16;predominantly Ca Breast), pleural Tuberculosis (n=4), chronic inflammation (n=13) and fibrous pleural plague (n=1).Five MT's were performed for palliative purposes, one had to be abandoned and six failed to achieve a diagnostic yield. No major procedure related adverse events were noted during the study period.

**Conclusions:** This data provides insight into the diagnostic learning curve of a new MT service. Improved patient selection and enhanced operator skills should produce a diagnosis rate of over 90% in year 4.The study also re-confirms the safety and high diagnostic yield of this procedure, even outside the settings of mesothelioma.

## Reference:

[1] Casal RF et al. Curr Opin Pulm Med 2009.

## P3363

# Significance and long-term outcome of nonspecific pleuritis after medical thoracoscopy

Xanthi Tsiafaki<sup>1</sup>, Maria Chorti<sup>2</sup>, Niki Maounis<sup>3</sup>, Maria Kokolaki<sup>4</sup>, Constantinos Mantzouranis<sup>1</sup>, Vasiliki Filaditaki<sup>1</sup>. <sup>1</sup>Second Department of Chest Medicine, Sismanoglio General Hospital, Athens, Greece; <sup>2</sup>Department of Pathology, Sismanoglio General Hospital, Athens, Greece; <sup>4</sup>Department of Cytology, Sismanoglio General Hospital, Athens, Greece; <sup>4</sup>Department of Anesthesiology, Sismanoglio General Hospital, Athens, Greece

**Introduction:** A specific diagnosis of an exudative pleural effusion (EPE) often poses a clinical challenge for the pulmonary physician. Although medical thoracoscopy (MTH) remains the gold standard technique in the work up of patients with EPE a definite histological diagnosis will not be established in a significant number of the cases and will therefore be, characterized as non specific pleuritis (NSP).

**Objective:** To study the outcome of patients with NSP in a group of patients with long term follow up.

**Method:** A retrospective analysis was performed on 110 patients who underwent thoracoscopy for EPE, over a 7 year period, at our Institution. In 47(42,7%) cases, that were histologically diagnosed as NSP, long-term follow up (a minimum of 24 months) was available. MTH was performed by a respiratory physician, experienced in the procedure, under local anesthesia and IV/IM sedation.

**Results:** A definite histological diagnosis was established in 63 patients. In the remaining 47 (42.7%), 35 men and 12 women with mean age of 64.5 years, the diagnosis of NSP was rendered. Four of the latter (8.5%) were subsequently diagnosed with malignancy after an interval of 3-5 months (2 mesotheliomas, 2 adenocarcinoma). A probable cause was established on clinical grounds in 13(27.6%) cases. Finally, in 30 (63.8%) patients, the underlying etiology for NSP was not discovered and was therefore, described as "diopathic pleuritis".

**Conclusions:** In our series 3.6% proved to be false negative, after a mean follow up of 4 months. Furthermore, in 27.3% of our undiagnosed EPE cases, a definite diagnosis could not be determined and was characterized as "idiopathic pleuritis".

## P3364

Eosinophilic pleural effusions - Is everything clear?

Jan Plutinsky, František Dvorak, Zuzana Taligova, Renata Sabova,

Stanislava Sabova. 2nd Pneumology, Specialized Hospital of St.Zoerardus, Nitra, Slovakia (Slovak Republic)

**Introduction:** Eosinophilic pleural effusion (EPE) for long time was considered a result of benign concomitant diseases with a good prognosis. Blood or air in the pleural fluid (PF) could cause EPE in most cases. In some EPE the aetiology is unknown. Epidemiology is varied from 5-12%. We analysed our patients (pts) with PF and we focused on the group with EPE.

Aim: To share our own experience with diagnosis, differential diagnosis and prognosis of EPE.

Methods: We analysed 390 pts with a definitely confirmed diagnosis of pleural effusion. The diagnosis was confirmed biochemically, cytological analyses of PF, histologically by blind pleural biopsy or by medical thoracoscopy. Cell count was made routinely. Light's rule was used for the diagnosis of transudates and exudates. EPE was defined when 10% or more eosinophilic leucocytes appeared on a differential cell count.

**Results:** 3 M and 10 F, median age 71 years (51-85 yrs) had EPE (3.33%). From them 3 had lung carcinoma, 1 breast carcinoma, 2 had pneumonia, 2 heart failure, 1 pneumothorax, 1 traumatic PE, 1 pancreatitis as diseases causing EPE and only 1/13 had idiopathic EPE (7.6%), or 0.25% from 390 pts. Median of eosinophils in PE was 25% (from 10% to 88%). Ten of the EPE were exudates and 3 transudates. **Conclusions:** In our cohort of pts with EPE 30.8% had carcinoma and only 1 was idiopathic. Median age is high. Prognosis is better in 2/3 pts and it was interesting that 3 pts had transudates. Also of interest was the lower incidence of EPE in our cohort in comparison to literature sources. EPEs present the inhomogeneous group of pleural diseases with unclear prognosis.

## P3365

# Occurrence of malignancy after an initial diagnosis of post-thoracoscopy fibrinous pleuritis

Ben Sutton, Rakesh Panchal, Sanjay Agrawal, Jonathan Bennett. Institute of Lung Health, Glenfield Hospital -University Hospitals of Leicester, Leicester, United Kingdom

**Introduction:** Fibrinous pleuritis(FP) is a common thoracoscopic diagnosis and implies a benign aetiology, however, the number of cases that subsequently result in malignancy is not fully known.

**Objectives:** To evaluate what proportion of patients with FP following thoracoscopy develop malignancy.

**Methods:** Retrospective analysis was conducted of all thoracoscopies performed for unexplained exudative pleural effusions between 2005-2009. In cases with an initial histological diagnosis of FP, review of radiology and histology for at least 24 months post thoracoscopy was undertaken.

**Results:** Of 177 thoracoscopies, 90(49%) were malignant and 87(51%) were non-malignant. FP was the diagnosis in 68(38%) of cases, with 55(81%) male and a mean age of 72.5 ( $\pm 10.4$ ) yrs.

In 10 (15%) FP cases the subsequent diagnosis confirmed malignancy, with 5 (7.5%) of mesothelioma. Four had further immediate positive investigation (false negatives), six developed overt malignancy at a later stage. Of the 68 patients 35 (51%) had died, 27(39%) with no evidence of malignancy, with a mean survival of 502 days.

Mean survival of those with malignancy was 534 days p 0.75. Patients who died with a benign process were significantly older; 74.7yrs vs. 70.5yrs p0.043 ( $\pm$ 11.4) **Conclusion:** The majority of FP cases follow a benign course but need 2 years follow-up, as a proportion develop malignancy after a significant interval. Benign exudative pleural effusion is a poor prognostic marker in the elderly despite the absence of subsequent malignancy.

### P3366

Role of Abram's pleural biopsy in determining the cause of empyema thoracis Shaista Ghazal, Ashok Kumar, Nusrat Idrees, Nadeem Rizvi, Maria Malik. Chest Medicine, Jinnah Post Graduate Medical Centre, Karachi, Sindh, Pakistan

**Introduction:** Empyema thoracis remains a major problem in developing countries. Clinical outcomes in tuberculous empyema are generally believed to be worse than in non-tuberculous. So with the help of Abram pleural biopsy early detection of the cause of empyema and its treatment could be possible.

**Objectives:** To evaluate the role of Abram's pleural biopsy in determining the cause of empyema thoracis.

**Methods:** A prospective study of patient's data was undertaken at the Pulmonology department at the largest public tertiary care centre in Karachi, Pakistan. Pleural biopsies for histopathology were obtained using Abram's pleural biopsy needle from 46 patients admitted with empyema thoracis between August 2010 and August 2011; along with pus for Gram staining, routine culture, AFB smear and AFB culture, and the results of these variables were compared for diagnostic efficiency. **Results:** A comparison of the diagnostic tools used showed positive Gram staining in 28 out of 46 (60.9%) cases. Bacterial cultures were positive in 24 (52.1%) of the cases, with 10 (21.7%) positive for Streptococcus pneumonia, 8 (17.4%) positive for Pseudomonas aeruginosa, 6 (13%) positive for Staphylococcus aureus; and 15 (32.6%) with AFB growth on pus culture. Only 4 (8.6%) had a positive AFB smear. Whereas histopathology revealed 28 (60.9%) cases as having acute on chronic pyogenic inflammation, 12 (26.1%) with chronic non-specific inflammation, and 6 (13%) with acute on chronic granulomatous inflammation.

**Conclusions:** In comparison to other diagnostic techniques, there is no benefit of performing Abram's pleural biopsy in determining the cause of empyema thoracis. Pus culture has a better yield in specifying the cause in most cases.

### P3367

### Risk of intrapleural hemorrhage following thoracocenthesis

Marie-Ève Bureau, Yves Lacasse, <u>Simon Martel</u>. Département de Pneumologie, Institut universitaire de Cardiologie et de Pneumologie de Québec, Québec, QC, Canada

**Background:** Diagnostic or therapeutic thoracocenthesis is usually a simple and safe procedure. The extent to which coagulation abnormalities induced by antithrombotic therapy (ATT) increase the risk of of intrapleural hemorrhage following thoracocenthesis is unknown.

**Objective:** To examine the risk of intrapleural hemorrhage following diagnostic or therapeutic thoracocenthesis in patients with or without ATT.

**Methods:** We conducted a retrospective cohort study of all the diagnostic or therapeutic thoracocentheses performed in our institution over a three-year period (2007-2009). We considered only the procedures performed without ultrasonic guidance. Antiplatelets and anticoagulant therapy at the time of the procedure were recorded. Coagulation parameters (international normalized ratio, partial thromboplastin time, platelet count) and hemoglobin level were also noted. We defined intrapleural hemorrhage as either a recurrent pleural effusion with a fall in hemoglobin >20 grams/liter, or a hemothorax necessitating pleural drainage.

**Results:** A total of 695 patients underwent 955 thoracocentheses; data were available from 940 of them. 738 procedures (78.5%) were performed on patients on either antiplatelets or anticoagulant therapy. Overall, 7 intrapleural hemorrhages were noted (overall incidence rate: 0.7%), all in patients with antithrombotic therapy (ATT: 7/738 vs. no ATT: 0/202; Fisher's exact test: p = 0.22).

**Conclusion:** The incidence of intrapleural hemorrhage following thoracocenthesis was low. Although the event rates in patients with or without ATT were not statistically different, all intrapleural hemorrhages occurred in patients with antithrombotic therapy.

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WITHDRAWN