82. From outside to inside: access to the pleura

PS86
A randomised controlled study to compare the efficacy of closed pleural biopsy and medical thoroscopic pleural biopsy in undiagnosed exudative pleural effusion
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This study was to compare the efficacy of closed pleural biopsy with Abram’s needle and medical thoroscopic biopsy in the diagnosis of undiagnosed exudative pleural effusion in a tertiary care setting. It was a randomised controlled study during the period Nov 2008 - Oct 2010. All patients admitted with pleural effusion, underwent a clinical workup for pleural effusion. Light’s criterion is used to differentiate between exudative and transudative pleural effusion. Those patient’s with exudative pleural effusion without the establishment of a specific diagnosis were included in the study. The enrolled patients were then randomised into 2 groups. One group was subjected to medical thoroscopic pleural biopsy and the other to closed pleural biopsy with Abram’s needle. Demographic, clinical & biochemical characteristics, diagnostic yield and the complications were of the two groups were compared. 58 patients were included in the study and they were divided into two groups of 29 patients each. The diagnostic yield was 86.2% in the medical thoracoscopy group as compared to 62.1% in closed pleural biopsy group. Complication rate was 10.3% in medical thoracoscopy group compared to 17.2% in closed pleural biopsy group. Hence the study concluded that medical thoroscopic pleural biopsy had a better diagnostic yield with a lower complication rate as compared to closed pleural biopsy with Abram’s needle.

PS87
US guided transthoracic true cut biopsy of peripheral pulmonary and mediastinal lesions
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Aim: The aim of the study is to evaluate the diagnostic value and the risk from US guided transthoracic true cut needle biopsy (USG-TTNB)for diagnosing peripheral thoracic lesions

Materials and methods: In a prospective study (from 1999 to 2007) we observed 753 patients with peripheral pulmonary and 273 patients with mediastinal lesions above 10 mm in diameter (50 males, 252 females). All patients with pain, cough and hemoptysis were included in the study. The patients were examined with chest X-ray and CT and, finally, to avoid ionizing energies. The aim of the study was to evaluate feasibility, safety and efficacy of a new technique to insert the needle under ultrasonic guidance, without the need for any kind of general anaesthesia. The use of ultrasonography allows to increase the sensitivity of the detection of pleural effusions, to perform procedures under real time visualization and, finally, to avoid ionizing energies. The aim of the study was to evaluate feasibility, safety and efficacy of a new technique to insert the needle under ultrasonic guidance along the costophrenic sinus, avoiding every accidental complication.

Methods: 56 patients with pleural effusion, referred to thoracentesis, were placed supine or opposite lateral recumbent position. After the identification of the pleural fluid by the ultrasonic fluid in the costophrenic sinus by ultrasonic evaluation, we used Veress needle assembly to cannulate the sinus under constant ultrasonic guidance in order to permit the fluid to drain.

Results: 81 separate thoracenteses were performed on 56 patients. 78 thoracenteses were successfully completed (96.3%). Three were stopped because of the appearance of considered complications such as cough (2.4%) and vasovagal event (1.2%). During 24 hours patient monitoring, we encountered only one chest pain (1.3% of completed thoracenteses) and one pneumothorax (1.3% of completed thoracenteses). The mean acquisition time of the pleural space was 76 seconds (SD: 9).

Conclusion: This work highlights safety and efficacy of real time echo guided thoracentesis, in terms of more comfortable patient position, easier approach for the pleural fluid aspiration with guide sheath connected to 20 ml syringe. Material retrieved by aspiration was proceeded to cytocentrifugation and cell block was analyzed.

Results: A total of 344 patients were included from August 2002 to January 2011. Median age was 63.7 years (range 25.84-89.7). Male were the majority of cases were lung lesions extending to the pleura (n=311, 90.4%), followed by pleural lesions (n=21, 6.1%), mediastinal lesions (n=5, 1.5%) and chest wall lesions (n=4, 1.2%). At the time of biopsy, a chest radiograph was available in all patients. Minimum lesion size was 0 cm. Final diagnosis was established in 284 patients (82.56%), 60 patients (17.44%) were diagnosis by other means or were undiagnosed. 221 (77.82%) lesions were malignant, 63 (22.18%) were benign. The diagnostic yield TTNB was 82.56%. Adverse events were pneumothorax in 22 patients (6.4%) and in 8 of these, a chest drain was required (36.36%). Mild hemoptysis (n=18, 5.2%), post procedural pain requiring medication (n=8, 2.5%), vasovagal reaction (n=6, 1.7%) were minor events.

Conclusions: Coaxial needle biopsy set technique is safe method with excellent diagnostic accuracy. This technique has advantage that several samples may be taken without having to repeatedly penetrate the pleura.

PS89
Diagnostic value and complications of transthoracic fine needle aspiration in lung lesions
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Aim: To study the diagnostic value of TFNA in lung lesions.

Methods: We performed TFNA under computed tomography with 18-20 gauge spinal needles in 281 patients in Yedikule Chest Diseases Hospital between 11 March 2009 and 21 July 2010. All patients had chest X rays on 1st and 3rd hours to rule out pneumothorax.

Results: The mean age of patients was 59±12.5 years. 49 of patient were female and 232 males. We obtained COPD in 51 patients of 188 that pulmonary function tests applied. We performed total 367 TFNA in all 281 patients. Any of complications arose in 64 (22.7%) patients; pneumothorax in 37 (13.1%) and hemoptysis in 11 (3.9%). We found COPD is not a significant factor that increases the risk of pneumothorax or any other complications. Also, we didn’t find any differences between 18 and 20 gauge needles in complication rate. We established increased risk of pneumothorax and other complications as the lesion gets larger. We performed chest x ray on 3rd hour in patients with normal chest x ray on 1st hour and pneumothorax wasn’t seen. We obtained results as malign in 182 and benign in 84 patients. We couldn’t obtain any diagnosis in 15 patients. Acid-fast staining of TFNA was positive in 5 of 19 tuberculosis patients. The sensitivity of TFNA was 90.61% in malignancies and 51.9% in pulmonary infections.

Conclusion: TFNA is a common method with high sensitivity in diagnosing peripheral lung lesions. The most important complications of process are pneumothorax and hemoptyasis. Only chest x ray on 1st hour after process is enough to rule out pneumothorax.

PS90
Cytomorphological analysis in the evaluation of cytological fluid samples in pleural effusion
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Conclusion: TFNA is a common method with high sensitivity in diagnosing peripheral lung lesions. The most important complications of process are pneumothorax and hemoptyasis. Only chest x ray on 1st hour after process is enough to rule out pneumothorax.

Material and methods: The 344 patients with ultrasonographically visible lesions of lung, mediastinum, pleura and chest wall were included in the study between August 2002 to January 2011. We performed TTNB with 18 gauge coaxial biopsy set. Five and more biopsies were performed for histologic examination. Immediately thereafter the lesion was aspirated with guide sheath connected to 20 ml syringe. Material retrieved by aspiration was proceeded to cytocentrifugation and cell block was analyzed.

Results: A total of 344 patients were included from August 2002 to January 2011. Median age was 63.7 years (range 25.84-89.7). Male were the majority of cases were lung lesions extending to the pleura (n=311, 90.4%), followed by pleural lesions (n=21, 6.1%), mediastinal lesions (n=5, 1.5%) and chest wall lesions (n=4, 1.2%). At the time of biopsy, a chest radiograph was available in all patients. Minimum lesion size was 0 cm. Final diagnosis was established in 284 patients (82.56%), 60 patients (17.44%) were diagnosis by other means or were undiagnosed. 221 (77.82%) lesions were malignant, 63 (22.18%) were benign. The diagnostic yield TTNB was 82.56%. Adverse events were pneumothorax in 22 patients (6.4%) and in 8 of these, a chest drain was required (36.36%). Mild hemoptysis (n=18, 5.2%), post procedural pain requiring medicatin (n=8, 2.5%), vasovagal reaction (n=6, 1.7%) were minor events.

Conclusions: Coaxial needle biopsy set technique is safe method with excellent diagnostic accuracy. This technique has advantage that several samples may be taken without having to repeatedly penetrate the pleura.
P591 Medical thoracoscopic lung biopsy obtained by stapler device: A new trick in old ground?

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Aims and objectives: The aim of the study was to report our experience in 850 patients who were inserted a portex Seldinger drainage kit (SDK) 12 F during the period 01/2001-02/2011.

Materials and methods: Details of all SDK insertions were retrospectively collected by the respiratory team. This observational study looked at the indications, success, complications and patient outcome.

Results: The mean age of the patients was 70 years (range 28-75 years). Mean duration of the procedure was 30 min (15-35 min). Intra- and post-operative deaths nor major complications were recorded. Successful drainage was achieved in all patients.

Conclusions: Seldinger drainage kit has been introduced to minimize the complications associated with conventional tube drainage. Seldinger drainage kit is a pioneer method assuring superior quality of biopsy and can be applied in high risk pts without complications.

P592 Alternate drain of thoracic cavity by Seldinger technique in a tertiary healthcare setting

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Introduction: Chest drain insertion is often required in the clinical practice. Large bore catheters are difficult to insert and may be associated with adverse complications. Seldinger drainage kit has been introduced to minimize the complications associated with conventional tube drainage.

Aims and objectives: To share our experience in 850 patients who were inserted a portex Seldinger drainage kit (SDK) 12 F during the period 01/2001-02/2011.

Materials and methods: Details of all SDK insertions were retrospectively collected by the respiratory team. This observational study looked at the indications, success, complications and patient outcome.

Results: Eight hundred and fifty pts (mean age:65.7 years, range:18-92) were inserted an SDK due to pleural effusion (500 patients), pneumothorax (250 patients), traumatic hemothorax (100 patients). Successful drainage was obtained in all patient without any complications at insertion except for 1 case of hemothorax in a patient receiving anticoagulant therapy. Thirty patients had a malignant pleural effusion and underwent pleurodesis with bleomycin or novadron. In pneumothorax the mean stay of drain was 3 days (range 2-15 days).

Conclusions: SDK is a minimal invasive and effective alternate method for pleural space drainage with minor complications. SDK training should be regularly applied in young doctors to ensure the quality and efficacy of performance.

P593 Thoracoscopic findings of undeterminate eosinophilic pleural effusion

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Background: An etiologic diagnosis cannot be established in 14% of eosinophilic pleural effusions, and these cases are referred as idiopathic. Yet, thoracoscopic diagnostic approach in this entity has never been studied. The aim of our study is to assess thoracoscopic findings in patients with undeterminate eosinophilic pleural effusion.

Methods: We studied all patients with undeterminate eosinophilic pleural effusion during the last 4 years among 168 patients who underwent medical thoracoscopy for diagnosis. Pleural effusion was considered eosinophilic when contained more than 10% of eosinophils. Effusion was classified as idiopathic if no aetiology could be assigned during evaluation. All patients were followed at 1, 3, 6, 12 months.

Results: Patients with undiagnosed eosinophilic effusion were 8 (4.5%). Pleural eosinophil count ranged from 10% to 59%. Macrophocscopic examination of the pleura during medical thoracoscopy demonstrated diffuse thickening, associated to inflammation in 6 patients and scattered nodules in two. Microscopical examination of pleural biopsies evidenced non-specific inflammation with eosinophilic predominance in all of our patients. Specific diagnosis was not identified in all cases. None of the patients received any specific treatment during the follow-up period. No relapse of pleural effusion was recorded.

Conclusion: Idiopathic eosinophilic pleural effusions are associated with non-specific eosinophilic inflammation of the pleura. They usually follow a benign course with a resolution within a year without the administration of any specific therapy and a conservative approach with observational follow up is recommended.

P594 Evaluation of medical thoracoscopy in high risk surgical patients at Basilion Hospital

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Background: Medical thoracoscopy can reliably achieve a diagnosis in pleural effusions of unknown origin outside the operating theatre with less morbidity. Yields are comparable to the gold standard of VATS pleural (video assisted thoracoscopic surgery/biopsy).

Aims: This study aims to evaluate the diagnostic accuracy and safety of medical thoracoscopy in high risk surgical patients at our centre.

Method: Records of patients undergoing medical thoracoscopy between Jul ‘07 – Jan ‘11 (n=95) were analysed retrospectively for surgical risk by ASA (American Society of Anaesthesiologists) physical status classification, diagnosis and complications.

Results: Surgical risk: 46 (86%) were identified as high risk surgical candidates by ASA criteria. 39 (84%) patients had severe systemic disease that limited functional capacity (ASA 3) and 7 (15%) had severe systemic disease that was a constant threat to life (ASA 4).

Histology: Histological diagnosis (sensitivity) was achieved in 51 (96%) and diagnostic accuracy (specificity) in 45 (88%). The results were – non small cell lung cancer 6 (11%), malignant mesothelioma 14 (27%), chronic pleuritis 26 (50%), morbidastic cancer 3 (5%), small cell lung cancer and pulmonary TB 1 (2%) each. 6 (13%) had chronic pleuritis with further investigations. 5 had VATS biopsy (mesothelioma 3, sarcoïdosis 1, benign pleuritis 1), 1 CT biopsy (non small cell lung cancer) and 1 bone biopsy (metastatic cancer).

Complication: Persistent air leak and surgical empyema in 2 (3%) cases were managed conservatively. No life threatening complication was recorded.

Conclusion: Our experience with this procedure, highlights the safety and efficacy of medical thoracoscopy even in the high risk surgical patients.

P595 Is medical thoracoscopy indicated in the management of multiloculated and organized thoracic empyema?

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Background: Pleural empyema can be subdivided into 3 stages: exudative, fibrinous or multiloculated and organizing. In the absence of clear seption, simple chest tube drainage can be the standard treatment, whereas patients with clear seption would require a form of thoracoscopy.

Aims and objectives: The aim of this study was to report our experience and analyze the efficacy and safety of medical thoracoscopy in patients with multiloculated and organizing empyema.

Methods: We performed a retrospective study reviewing all files patients referred for empyma and treated by medical thoracoscopy at our department from July 2005 to February 2011.

Results: A total of 48 patients with effusion were treated by medical thoracoscopy, of whom 41 (85.4%) had empyema. Emphyema was multiloculated in 24 patients (58.5%) and organizing in 8 patients (19.5%). Medical thoracoscopy was considered successful without further intervention in 35 of 41 patients (85.4%) but this response was different in the different stages of empyema. All the 9 patients with free flowing fluid were treated successfully with medical thoracoscopy, 22 of the 24 patients with multiloculated empyema (91.7%) were treated successfully and only 4 of 8 patients with organizing effusion (50%).

Conclusions: Our study confirms that multiloculated pleural empyema could safely and successfully be treated with medical thoracoscopy while organizing empyema can be resistant to drainage with medical thoracoscopy, requiring a video-assisted thoracic surgery or open surgical decortication.
P596
Medical thoracoscopy – A district general hospital experience
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The 2010 British Thoracic Society (BTS) guideline recommends the use of Medical Thoracoscopy (MT) in the management algorithm for malignant pleural effusion [1]. Despite this MT is not readily available outside of tertiary centres in the United Kingdom. An internal audit in 2010 showed the burden of pleural effusion at Barnsley Hospital (BH) over an 18 month period led to 1195 medical admissions; 226 (18.9%) were malignant effusions.

The diagnostic process for explorative pleural effusions has altered recently in BH to include semi-rigid MT.

Methods: A retrospective analysis of computed tomography (CT) reports, histology and length of stay (LOS) for all individuals who underwent diagnostic MT (dMT) was performed.

Results: 44 MTs have been done to date. 32 were diagnostic and 12 therapeutic. Diagnostic MT results are as follows:

Adenocarcinoma 10, Mesothelioma 2, Breast Carcinoma 3, Ovarian Carcinoma 1, Tuberculosis (TB) 2, Inflammatory Tissue 14. CT reports prior to dMT revealed a low suspicion of malignancy in 18 and a high suspicion of malignancy in 14.

dMT histology confirmed malignancy in 14 patients within the high suspicion group. Within the low suspicion group dMT histology confirmed 2 cases of lung cancer, 2 cases of TB and no evidence of malignancy in 14. Average LOS after dMT was 3.7 days (range 1-11). The average LOS prior to the introduction of MT was 7.3 days (range 1-59).

Conclusion: MT is cost-effective through reducing LOS and referral rates to tertiary centres. Additionally this study has highlighted a potential missed or delayed diagnosis in 12.5% of cases. Patient experience is improved by facilitating a timely patient journey within their local hospital.

Reference:
[1] BTS Pleural Disease Guidelines 2010

P597
Pigtail catheter drainage – When to use it
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Chest drainage for patients (pts) with pneumothorax or various etiology pleural effusions is a method of choice. In some circumstances specialists use a tip with a curled drain-pigtail catheter (PC).

Aims: To share our experience with pigtail catheter drainage.

Methods: 106 pts were drained in 2010. A pigtail catheter was used on 17 pts (16%). PCs 14 or 16 CH were preferred. The site of insertion was determined using sonography examination. PC with a trocar was inserted into the skin incision. After insertion of the drain the end of the catheter was twisted by pulling back the synthetic fibres and then fixed. The Luier end of drain was connected to a Heimlich valve and then to a urine bag. When production of PE was < 100 ml/24 hours, the drain was removed.

Results: Out of 17 pts, 13 were M, mean age 60 (22-85 yrs), 4 were F, mean age 53.5 (42-69 yrs). The most frequent reason was encapsulated empyema in 8 pts, malignant effusion in 6 pts and TB, haemothorax and non-specific pleuritis in 1 pt each. By this study has highlighted a potential missed or delayed diagnosis during the period of study. Mean age of patients was 41.2 years (range: 19-78 years).

Conclusions: Medical thoracoscopy is a safe, well tolerated and effective procedure.

P598
Prognostic factors in patients with malignant pleural effusion undergoing thoracoscopy
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Background: Survival of patients with malignant pleural effusion is considered generally poor. These patients are likely to undergo thoracoscopy for diagnosis and treatment of their disease. Factors affecting survival are important to define to decide whether patients should undergo interventional procedures. The aim of our study was to evaluate prognostic factors of patients with malignant pleural effusion undergoing thoracoscopy.

Methods: Patients with malignant origin proven by thoracoscopy, have been studied prospectively to determine prognostic factors. Survival time was defined as the time interval from thoracoscopy to death or last follow-up. A regression model was used to assess significant prognostic factors.

Results: 90 patients with histological diagnosis of malignant pleural effusion after thoracoscopy, were included. Diagnosis was lung carcinoma 43%, breast carcinoma 23.6%, mesothelioma 12.9%, genito-urinary carcinoma 7.1%, GI 4.8%, other 5.1%, unknown primary 3.5%. The median overall survival time was 11 months ranging from 1 to 55. The Cox analysis showed that histology of the primary tumor (p<0.019), ps (p<0.001), gender (p=0.01), WBC (p=0.01) and neurotrophin/lipmycetas ratio (p=0.018) were prognostic factors for survival. In the multivariate analysis of these parameters, histology (p=0.002), performance status (p<0.001) and WBC (p=0.01) was of independent value.

Conclusion: Performance status, histology of the primary tumor, and WBC are factors of survival in patients undergoing thoracoscopy for malignant pleural effusion. The prospective identification of patients meeting these criteria may help physicians select patients for interventional procedures.

P599
Clinical utility of thoracoscopy under local anaesthesia in undiagnosed pleural effusion
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Introduction: More than twenty percent of pleural effusions remain without an established aetiology after evaluation with pleurocentesis and closed pleural biopsy. Thoracoscopy under local anaesthesia greatly increases the diagnostic yield for malignant effusion, but is not widely performed because of supposed patient discomfort. Aims and objectives: To assess the utility and safety of thoracoscopy under local anaesthesia in the evaluation of undiagnosed pleural effusion.

Methods: This is a retrospective study of all patients with undiagnosed pleural effusion who underwent thoracoscopy under local anaesthesia between January 2008 and December 2010 in a tertiary care hospital.

Results: 52 patients (33 males and 19 females) underwent the above procedure during the period of study. Mean age of patients was 41.2 years (range: 19-78 years). Histopathologic examination of thoracoscopic pleural biopsy revealed: malignancy in 34 (65.4%) cases, benign tumour (fibroma) in one (1.9%), tuberculosis in 14 (26.9%), empyema in two (3.8%), and nonspecific inflammation in one (1%) case. Diagnostic efficacy of medical thoracoscopy was found to be 98.1% (51/52). Amongst the malignancy cases, adenocarcinoma was found to be the commonest – 16 (47.1%), followed by squamous cell carcinoma – 10 (29.4%), small cell carcinoma – 4 (11.8%), poorly differentiated carcinoma – 2 (5.9%), and non-Hodgkin’s lymphoma and malignant mesothelioma in one case each (2.9%). Complications encountered during the perioperative period were self-limiting subcutaneous emphysema in two (3.8%) and postoperative fever in one (1%) case.

Conclusions: Medical thoracoscopy is a safe, well tolerated and effective procedure.

P600
Low dose vs high dose talc pleurodesis for malignant pleural effusion
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Introduction: Role of talc in pleurodesis for recurrent pleural effusion is very well defined. In developing countries like India, talc is still the cheaper and commonly used pleurodesis agent. However, it has been known to be associated with a lot of morbidity including ARDS. Common morbidities include fever, chest pain, nausea and vomiting. The aim of this study was to see the effectiveness of low dose talc pleurodesis, and to evaluate if low dose talc is associated with less complications.

Methods: 24 adult patients of malignant pleural effusion were included in the study. Patients were divided in two groups. In group A (n=10), 5 gm of talc was used while in group B (n=14), pleurodesis was done with 10 gm of talc. Equal amount of xylocaine and normal saline was used in both the groups. Standard method for pleurodesis was followed. Close observation was done for next 48 hours, and after that patients were followed every week till 6 weeks.

Results: Immediate complication in terms of fever, chest pain and nausea was seen in 40% (n=4) patients of group A where 5 gm of talc was used. When these patients were followed up for next 6 weeks, 30% (n=3) of patients showed recurrence of effusion, and required repeated thoracentesis. In group B, 64% (n=9) patients developed immediate complications in terms of high grade fever, and vomiting. However, in group B also, 36% (n=5) patients showed recurrence of pleural effusion and required repeated thoracentesis. ARDS was not seen in either group.

Conclusion: Talc pleurodesis with lower dose of 5 gm is associated with lesser number of complications and is equally effective as with 10 gm of talc.
P601 Feasibility and complications of naloxon catheter insertion after pleural biopsy as a novel method for pleural effusion drainage
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Backgrounds: Respiratory failure due to massive pleural effusion is usually treated with drainage via a chest tube.

Objectives: To investigate feasibility and complications of Naloxon catheter insertion after pleural biopsy as a novel method for pleural effusion drainage.

Methods: After pleural biopsy, a Naloxon catheter No.18 was inserted in the pleural space guided by Abram biopsy needle, after drainage control chest radiology was performed. Complications and daily examination results were recorded.

Results: 46 catheter insertions were performed on 41 patients (22 men, 19 women). Among these patients, pleural biopsy was indicated in 40 (78%) of them. Four patients underwent pleurodesis because of malignant pleural effusion due to breast cancer. Successful fluid drainage after catheter insertion was observed in all 46 cases. Dyspnea was significantly decreased after catheter insertion in all patients. Mean drainage duration was 5.3 days. In 42 (91.3%) patients complete lung expansion was observed. Incomplete lung expansion was observed in 4 patients (2 patients due to trapped lung, and 2 patients due to loculated pleural effusion).

Conclusion: Naloxon catheter insertion after pleural biopsy is a novel, cost effective, simple and tolerable methods with low morbidity for drainage of pleural effusion in symptomatic patients undergo pleural biopsy. Common complication of this method is catheter obstruction which could easily be resolved with saline wash out.

P602 Pleuroscopy with an autoclavable semi rigid thoracoscope
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Aim: Describe our experience with a endoscope similar in design to commonly used bronchoscope. This pleuroscopy interface with processors and light sources employed for flexible bronchoscopy and, therefore, are available in most endoscopy units.

Method: Pleuroscopies were performed under local anaesthesia with conscious sedation by a Respiratory Physician in a endoscopic suit. A single puncture was used for flexible bronchoscopy and, therefore, are available in most endoscopy units.

Results: 21 pleuroscopies were undertaken over a 14-month period. From the 31 patients, 22 were men and 9 women, mean age of 68.4 years. Four patients have bilateral pleural effusion. 17 procedures were performed on the right pleural space, and 14 on the left. The indication in 22 procedures was for diagnostic of a pleural effusion, in the other 9 procedures, the indication was pleurodesis in patients with previous diagnostic of malignancy. Pleural biopsy were obtained in the 22 patients and a histologic diagnostic of malignancy was made in 10 patients (mesothelioma and 7 metastasis of carcinoma) six patients has non specific pleuritis and 2 patients has necrotizing granulomes. In 3 patients with previous diagnostic of malignancy (esophagus and 2 bronchial carcinoma), metastatic pleurisy were ruled out. In 18 patients, pleurodesis with talc poudrage was performed. There were minor complications in 3 patients (1 subcutaneous emphysema, 1 infection of point of suture and 1 thoracic pain in the 6 hours after the procedure).

Conclusion: The Pleuroscopy with autoclavable semi rigid thoracoscope is a safe and useful technique in the diagnosis and management of pleural diseases. The semirigid pleuroscopy must increase the performance of pulmonologists in the diagnosis and management of pleural disease.

P603 Retrospective evaluation of effectiveness and safety of local anesthetic thoracoscopic compared with blind chest drain pleurodesis
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Aim: To retrospectively evaluate effectiveness and safety of local anesthetic medical thoracostomy and talc poudrage (TP) compared with chest drain and talc slurry pleurodesis (TS) in a district general hospital (DGH) without on-site thoracic surgery backup.

Methods: Data was collected between July 2007 and February 2010 using multidisciplinary team minutes and pharmacy records. All patients with malignant effusions who had treatment and had follow up were included. Patients with no diagnosis or follow up and those who did not have TS/TP were excluded.

Results: 104 patients were identified. 2 patients were excluded because of inclusion and exclusion criteria. Mean age in TS vs TP was 71.5±7.1 years. Pleurodesis success rate in TS vs TP was 22.8±7.5%. In the TS group, 75% of patients with a successful pleurodesis were receiving chemotherapy. The average time from pleurodesis to death in TS vs TP was 206±359.6 days. Of the 14 failures in the TS group 64.2% (9/14) died within 6 months and 28.6% (4/14) had mesothelioma. In the TP group 79.1% (19/24) were alive at 6 months and 66.6% (2/3) of the failures had mesothelioma. Two of the 3 patients with failed TP were recruited in an ongoing trial involving a drug therapy and pleurodesis success rates. Mean follow up, TS vs TP was 67.7±50.8 days. No serious complications were documented in either group.

Conclusion: To the best of our knowledge this is the first local anesthetic thoracoscopy data comparing with TS in a DGH setting. The TP group has a success rate on par with published data. Based on this data we may conclude that local anesthetic TP is effective and safe in patients with reasonable performance status.

P604 Safer intercostal drain (ICD) insertions
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Introduction: Intercostal chest drain (ICD) insertion carries a small but significant risk to patients when not performed properly. We re-audited the practice of ICD insertion in our hospital following several implementations since a previous audit in 2007-08. These implementations include drain insertion in specialised areas i.e. respiratory unit treatment room, strict sterility, ultrasound guidance, insertion sticker check list and nursing care plan.

Results: There were a total of 31 patients (15 males) in the bi-monthly audit from March ’09 to January ’10. Majority of the ICD insertions (97%) were performed in the respiratory unit and ultrasound guidance was documented in only 41.9%. ICD stickers were used in 83.9% and nursing care plan in 77.4%. Excluding the adverse event “pain”, complications rates in our hospital decreased from 39% to 12.9% in 2009-10 (Table 1). This is comparable with the complication rates of other centres (11-37%) [1]. Adverse events were significantly higher when drains were inserted outside a respiratory unit (p=0.007). Surprisingly, we found no significant differences between complication rates and the use of ultrasound guidance, sticker check list; or nursing care plan.

Table 1. Complication rates excluding pain

<table>
<thead>
<tr>
<th>Complication</th>
<th>Frequency (n=%)</th>
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<tbody>
<tr>
<td>Blocked drain</td>
<td>2</td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>1</td>
</tr>
<tr>
<td>Surgical emphysema</td>
<td>1</td>
</tr>
<tr>
<td>No complications</td>
<td>27</td>
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</table>

Conclusion: ICD insertion is advised to be performed in a specialised unit by staff with relevant competencies under adequate supervision.

References:

P605 A new electronic device for intrapleural pressure measurement – A presentation of use in a patient prepared for thoracoscopy
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Background: Measurement of intrapleural pressure is useful during various pleural procedures. However, the availability of electronic pleural manometers is limited.

Objectives: We aimed to 1) construct an electronic pleural manometer, 2) assess the accuracy of the measurements done with a new device, 3) perform an initial evaluation of the device during thoracentesis.

Methods: A vascular pressure transducer was used to transform hydrostatic pressure into an electronic signal. Reliability of the measurements was evaluated in a laboratory setting by comparing the results with those measured by a water manometer. Functionality of the device was assessed during thoracentesis and artificial pneumothorax creation before medical thoracoscopy.

Results: We built a small device, which can precisely measure intrapleural pressure. The measurement results showed a very high agreement with those registered with a water manometer (r=0.999; p<0.001). The initial evaluation of the electronic manometer during pleural fluid removal and pneumothorax creation showed the mean initial intrapleural pressure 3.85 cmH2O which decreased steadily to -8.98 cmH2O after the removal of 1600 ml of pleural fluid and increased up to +31.29 cmH2O after insertion of 1000 ml of air. The procedure was safe, the only symptom recorded was cough which appeared after the withdrawal of 900 ml of pleural fluid (intrapleural pressure -1.96 cmH2O).

Conclusion: Our electronic pleural manometer can precisely measure intrapleural pressure during pleural fluid removal and pneumothorax creation. The procedure of pleural pressure monitoring during thoracentesis is easy to perform and safe.