82. From outside to inside: access to the pleura

P586

A randomised controlled study to compare the efficacy of closed pleural biopsy and medical thoracoscopic 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 thoracoscopic 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 thoracoscopic pleural biopsy and the other to closed pleural biopsy with Abrahm's needle. Demographic, clinical & biochemical charecteristics, 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 thoracoscopic pleural biopsy had a better diagnostic yield with a lower complication rate as compared to closed pleural biopsy with Abrahm's needle.

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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 (-62; x = 48 mm ± SD 22mm). 2D US, Color Doppler and by some patients SonoVue contrast imaging extend the diagnostic value of US, allowing the hemodynamics and neovascularization of lesions to be assessed noninvasively. By all patients we performed USG-TTNB (12-18G) under local anesthesia. The biopsy specimens were examined with light microscopy. Immunohistological analysis was carried out when needed.
Results: USG-TTNB gave an adequate material to the morphological diagnosis in 698 (92.7%) of patients with peripheral thoracic lesions, PPV 98% and NPV 93.5%. We observed a few complications: 6 cases of pneumothorax (0.8%), by 2 patients it was necessary to set percutaneus tube drainage. USG-TTNB of patients with mediastinal tumor masses yielded positive histopathological diagnosis in 250 (91.6%) of TCNB cases, PPV 96.1% and NPV 94.3%. There were no complications such as pneumothorax or serious bleeding.
Conclusion: US-guided transthoracic cutting biopsy appears to be affective and a safe method in the patients with the US accessible thoracic lesions. This technique has a good accessibility, low cost, safety and high diagnostic accuracy compare to CT guided needle biopsy.

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Ultrasound guided transthoracic coaxial needle biopsy in chest lesions

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Aim: We examined diagnostic yield of ultrasound guided transthoracic coaxial needle biopsy in chest lesions.
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 years), 20.7% were male. 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=8, 2.3%) 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 3 cm.
Final diagnosis was established in 284 patients (82.56%), 60 patients (17.44%) were diagnosed 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 reguired (36.36%). Mild hemoptysis (n=18, 5.2%), post procedural pain requiring medication (n=8, 2.3%), vagovasal 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.

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Diagnostic value and complications of transthoracic fine needle aspiration in lung lesions

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Objective: Our aim was to determine the diagnostic value and complications of transthoracic fine needle aspiration (TFNA) -generally used especially in peripheral lung lesions- prospectively.
Material and method: We performed TFNA under computed tomography with 18- 20 gauge spinal needles to 281 patients in Yedikule Chest Diseases Hospital between 11st March 2009 and 21st July 2010. All patients had chest X rays on 1st and 3rd hours to rule out pneumothorax.
Results: Mean age of patients was 59±12.5. 49 of patienst 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 arised 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 90.6% 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 hemoptysis. Only chest x ray on 1st hour after process is enough to rule out pneumothorax.

P590

Costophrenic cannulation: A safe approach to ultrasound guided thoracentesis

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Background: 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 in the costophrenic sinus by ultrasound evaluation, we used Veress needle assembly to cannulate the sinus under constant ultrasound 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 operator, very low rate of complications and short acquisition time of the pleural space. Our new technique, real time echo guided costophrenic cannulation with Veress needle, allows to broaden the field of applications of thoracentesis and might be used in patients who cannot maintain orthostatic position.

P591

Medical thoracoscopic lung biopsy obtained by stapler device: A new trick in old ground?

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Introduction: Recent advances in minimal invasive techniques and instrumentation have expanded the role of medical thoracoscopy.The introduction of an endoscopic stapling device has encouraged thoracoscopic lung biopsy.
Aims and objectives: Evaluation of the quality of biopsy,the diagnostic efficacy and yield in high risk patients (pts) who underwent medical thoracoscopic lung biopsy (MTLB) for the evaluation of peripheral mass or diffuse interstitial lung disease using a stapler device under regional anaesthesia and neuroleptic analgesia.
Materials and methods: During 2002–2011, 30 high risk pts (75% severe respiratory failure,40% renal failure,33% ischemic stroke)underwent MTLB. Biopsy samples were obtained by a stapler device. Midazolam and fentanyl were used for anaesthesia and intercostal block was performed in all patients with ropivacain
Results: Pts were 18 males and 12 females (mean age 68.9 years,range 28-75 years). Mean duration of the procedure was 30 min (15–35 min). No intra-/post- operative deaths nor major complications were recorded.Successful analgesia was achieved in all pts.Biopsy specimens from the stapler device had mean dimensions:3.2x1.7x0.9cm (mean volume: 3.61ccm).All lung biopsies were conclusive and diagnostic.Malignancy was diagnosed in 17/30 pts and nonmalignant conditions in 13/30 (43% interstitial lung diseases,50% interstitial pneumonia,7%infarct).No complications were recorded.
Conclusions: Stapler tissue specimens received by MTLB have a high diagnostic accuracy in pts with peripheral tumours and diffuse interstitial lung disease.MTLB by stapler device is a pioneer method assuring superior quality of biopsy and can be applied in high risk pts without complications.

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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 eosinophilic count ranged from 10% to 59%. Macroscopical examination of the pleura during medical thoracoscopy demonstrated diffuse thickening, associating to inflammation in six 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 nonspecific 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.

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Evaluation of medical thoracoscopy in high risk surgical patients at Basildon 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=53) 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 function (ASA 3) and 7 (15%) had severe systemic disease that was a constant threat to life (ASA 4).
Diagnosis. 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%), metastatic cancer 3 (5%), small cell lung cancer and pulmonary TB - 1 each (2%). 7 (13%) cases with chronic pleuritis had further investigations. 5 had VATS biopsy (mesothelioma -3, sarcoidosis -1, benign pleuritis -1), 1 CT biopsy (non small cell lung cancer) and 1 bone biopsy (metastatic cancer).
Complication. Persistant air leak and surgical emphysema 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 in 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, fibropurulent or multiloculated and organizing. In the absence of clear septation, simple chest tube drainage could be the standard treatment, whereas patients with clear septation 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 empyema 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. Empyema 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 [1]. 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 exudative pleural effusions has altered recently in BH to include semi-rigid MT.

Method: 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 of Lung 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 all MT 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).

Aim: To share our experience with pigtail catheter drainage.

Method: 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 a 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 Luer 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 the last 3 pts. In 15 pts (88.2%) chest drainage was successful. 2 pts died during drainage (both from malignant effusion). The median duration of the chest drainage was 9 days (4-21 days).

Conclusions: The main advantage of using a PC was that the small space in encapsulated empyema is too small for using a conventional drain or when there is a suspicion of septated PE. The disadvantage of pigtail drainage: 1.twisted end impedes the re-expansion of the drained cavity, 2. the system with a trocar is sharp and so careful consideration should be given to the indications (avoid drainage of lung abscess), 3. removing the drains is more painful, 4. is more expensive than a normal catheter.

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 neutrophils/lymphocytes ratio (p=0.018) were prognostic factors for survival. In the multivariate analysis, prognostic factors were histology (p=0.002), performance status (p<0.001) and WBC (p=0.01).

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 pleural effusion because the biopsy specimen is taken under direct vision.

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 (1.9%) 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 (1.9%) 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 lesser complications.

Method: 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 thoracocentesis. 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 thoracocentesis. 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 nelaton 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 Nelaton catheter insertion after pleural biopsy as a novel method for pleural effusion drainage.
Methods: After pleural biopsy, a Nelaton 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. Successfull 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). Catheter obstruction was occurred in 12 patients which was resolved after Salin wash out in 11cases.
Conclusion: Nelaton 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 Salin 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 pleuroscope interfaces 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 technique and pleuroscope Olympus LTF-160.was used
Results: 31 pleuroscopies undertaken over a 14-month period. From the 31 patients, 22 were men, and 9 women, mean age of 68,6. 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 diagnosis of malignancy was made in 10 (3 mesothelioma and 7 metastasis of carcinoma) six patients has non specific pleuritis and 2 patient 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 pleuroscope must increase the performance of pulmonologists in the diagnosis and management of pleural disease.

P603

Retrospective evaluation of effectiveness and safety of local anaesthetic thoracoscopy compared with blind chest drain pleurodesis

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Aim: To retrospectively evaluate effectiveness and safety of local anaesthetic medical thoracoscopy and talc poudrage (TP) compared with chest drain and talc slurry pleurodesis (TS) in a district general hospital (DGH) without onsite 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, 42 patients met inclusion and exclusion criteria. Mean age in TS vs. TP was 71.5/71.4 years. Pleurodesis success rate in TS vs. TP was 22.2/87.5%. In the TS group, 75% of patients with a successful pleurodesis were receiving chemotherapy. The average time from pleurodesis to death, TS vs. TP was 201.6/359.6 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 67.7/200.3 days. No serious complications were documented in either group.
Conclusion: To the best of our knowledge this is the first local anaesthetic 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 anaesthetic TP is effective and safe in patients with reasonable performance status.

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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 (87%) 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 statistical differences between complication rates and the use of ultrasound guidance; sticker check list; or nursing care plan.

Table 1. Complication rates excluding pain

Complications	Frequency (n=31)
Blocked drain	2
Pneumothorax	1
Surgical emphysema	1
No complications	27

Conclusion: ICD insertion is advised to be performed in a specialised unit by staff with relevant competencies under adequate supervision.
References:
[1] Horsley A, Jones L, White J et al. Efficacy and Complications of Small-Bore, Wire-Guided Chest Drains. Chest. 2006;130:1857-1863.

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A new electronic device for intrapelural pressure measurment – 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 thoracenthesis.
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 cmH_2O which decreased steadily to -8.98 cmH_2O after the removal of 1600 ml of pleural fluid and increased up to -1.29 cmH_2O 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 cmH_2O).
Conclusion: Our electronic pleural manometer can precisely measure intrapleural pressure during pleural fluid removal and pneumothorax creation. The procedure of pleural pressure monitoring during thorcentesis is easy to perform and safe.