

Conclusions Bedside chest ultrasound prior to pleural procedures in this cohort resulted in a change in the preferred site in a considerable number of patients. Ultrasound increased the level of confidence with the selected pleural procedures and resulted in a change to the intended procedure in 23% (11/47) of cases which included completely abandoning the procedure in 12.7% of cases (6/47).

P31 ROUTINE ANALYSIS OF PLEURAL ASPIRATES FOR AFB IN PATIENTS WITH PLEURAL EFFUSION OF UNKNOWN CAUSE IS OF LIMITED USE

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The investigation of pleural effusion of unknown cause may include analysis of pleural aspirate for presence of acid-fast bacilli (AFB) by smear and culture. We reviewed data on all pleural aspirates sent for AFB analysis over 11 years (January 2000 to December 2010) to identify the diagnostic yield of pleural aspirate AFB smear and culture in our hospital where there is a low incidence of tuberculosis (TB). Data were crosschecked with the TB notification list obtained from the Consultant in Communicable Disease Control (CCDC) to ensure identification of all tuberculous effusions. A list of all AFB positive specimens (including smears, cultures and histology) was also obtained from the pathology laboratory. The medical records of patients with AFB positive aspirates were reviewed. We also reviewed the medical records of patients with AFB negative pleural effusion who were diagnosed to have TB by other means. In total, 960 pleural aspirate samples were sent for AFB analysis. None of these were smear positive and only 13 (1.4%) were found to be positive on cultures. The ethnic breakdown of this figure was one, five, and seven cases for Asian, Caucasian, and Afro-Caribbean patients, respectively. Five of these patients were known or found to be HIV positive, all of whom were Afro-Caribbean. Eight of the 13 patients with positive pleural aspirate cultures underwent pleural biopsy (three by thoracoscopy), all of which confirmed a diagnosis of TB. One patient with positive cultures of pleural aspirate also had TB confirmed on culture of bronchial washings. A further ten patients (1%) whose pleural aspirates were AFB negative on smear and culture were diagnosed with tuberculosis by other means. The yield of AFB analysis on pleural aspirate is very low. Its role in commencing treatment in those who ultimately are diagnosed to have tuberculosis is limited. Risk factors for tuberculosis need to be considered before sending aspirate for AFB analysis. Where risk of TB is considered to be significant, pleural fluid aspiration should be combined with simultaneous pleural biopsy, as the latter may provide crucial diagnostic information at an earlier stage.

P32 ARE JUNIOR DOCTORS SAFE TO PERFORM PLEURAL PROCEDURES? AN AUDIT OF JUNIOR DOCTOR KNOWLEDGE AND COMPETENCY OF PLEURAL PROCEDURES BEFORE AND AFTER DEDICATED LECTURE-BASED AND PRACTICAL TEACHING SESSIONS

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Introduction Pleural procedures are considered core competencies at the end of ST2 medical training but with the advent of sub-specialisation within medicine and reduced working hours, junior doctors may have less exposure to these procedures.

Aims and Objectives One of the major themes that arose from the 2008 Rapid Response Report was inexperienced doctors undertaking procedures. We sought to determine the level of knowledge and competency at pleural procedures of junior doctors (F1-ST2) before and after teaching sessions to assess whether improvement occurred.

Methods Junior doctors were asked to complete a questionnaire in early 2011 about their self-assessed level of competency at pleural procedures and testing knowledge on various aspects of chest drain insertion and removal. A series of lectures at "mandatory" teaching days and optional practical drain insertion sessions on animal cadavers were delivered and junior doctors were asked to repeat the questionnaire between June and July 2011.

Results 57 doctors filled in the questionnaire pre-teaching and 37 completed in after teaching. Please see Abstract P32 table 1 for results. On re-audit, some of the most concerning findings were that 1 out of the 5 ST2 trainees had performed <3 thoracocentesis and 3 out of the 5 had performed <3 Seldinger chest drain insertion (1 never performed procedure) just prior to the completion of their ST2 rotation.

Abstract P32 Table 1 Table showing results of pleural audit before and after teaching

| | Pre-teaching | Post-teaching |
|---|--|--|
| Number completing survey | 57 doctors (53% foundation, 47% ST1/2) | 37 doctors (35% foundation, 36% ST1/2, 27% unknown) |
| Number (and %) self-judged to be competent at thoracocentesis | 22 (39% of total) Of these 14 (25% of total) performed procedure >3 times | 16 (43% of total) Of these 13 (35% of total) performed procedure >3 times |
| Number (and %) self-judged to be competent at Seldinger drain insertion | 15 (26% of total) Of these 5 (9% of total) performed procedure >3 times | 12 (32% of total) Of these 8 (22% of total) performed procedure >3 times |
| Number (and %) self-judged to be competent at large bore drain insertion | 5 (9% of total) Of these 1 (2% of total) performed procedure >3 times | 6 (16% of total) Of these 3 (8% of total) performed procedure >3 times |
| Percentage who would obtain written consent for plural procedures | 56% | 73% |
| Percentage correctly identifying triangle of safety | 61% | 86% |
| Percentage correctly identifying area for emergency decompression of tension pneumothorax | 70% | 75% |
| Percentage choosing large bore venflon for tension pneumothorax decompression | 31% (grey and orange) | 32% (grey and orange) |
| Percentage who would remove a bubbling chest drain | 10.6% | 5% |

Conclusion Dedicated teaching covering all aspects tested in the questionnaire led to an improvement in theoretical knowledge about pleural procedures but worrying basic deficiencies remain. It is uncertain whether the trainees had not attended teaching or had not absorbed the information. In addition junior doctors still perform relatively few pleural procedures. Of particular concern, some ST2s who are shortly to be medical SpRs have performed very few pleural procedures which are part of their core competency. Whether this is

due to lack of opportunity due to reduction in hours or other factors is uncertain. This may represent a significant risk for patients presenting out of hours who require an emergency pleural procedure.

P33 THORACIC ULTRASOUND TRAINING: HOW ARE WE DOING?—A NATIONAL WEB-BASED SURVEY

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Introduction The 2010 British Thoracic Society guidelines strongly recommend the use of thoracic ultrasound for the investigation and management of pleural disease. Respiratory specialty trainees are expected to achieve level 1 competency in ultrasound by completion of training. There is a paucity of data on the current level of training, availability of teaching and achievement of competency in thoracic ultrasound. We conducted a national web-based survey among respiratory trainees to assess the current availability of training and competency in thoracic ultrasound.

Method A web-based survey was designed using the Kwik Surveys tool. The survey link was emailed to speciality trainees across all 16 deaneries in the UK. Data were collected on year of training, current placement, availability of ultrasound on the ward, dedicated training sessions and training mentors, current competency level, maintenance of a log book and the frequency of complications encountered despite using ultrasound.

Results A total of 170 trainees from all deaneries responded. The level of specialty training was equivalent when stratified by year of training and around half of responders were in teaching hospitals. Nearly three-quarters had access to ultrasound on the ward: there was no difference when stratified by teaching hospital. Three-quarters had attended an ultrasound course. Only 16% of trainees have regular dedicated training sessions, with significantly more in teaching hospitals ($p=0.04$). Nearly 60% did not have a training mentor. Overall 29% of responders have achieved level 1 competency but 11% stated they were unable to use ultrasound at all (there was no difference when stratified by grade). Over a third of trainees do not maintain a logbook. The complication rate despite using ultrasound was $<10\%$.

Conclusions The majority of specialty trainees have access to ultrasound on the ward and have attended a thoracic ultrasound training course. However, it is concerning that very few trainees have a regular dedicated ultrasound training session or a training mentor. If all trainees are to achieve level one competency by the completion of specialty training, there needs to be more importance placed on practical training and the maintenance of a log book.

Abstract P33 Table 1

| | District General (n = 69) | | Teaching Hospital (n = 83) | | |
|---|---------------------------|----------|----------------------------|----------|---------------------------|
| | Yes | No | Yes | No | |
| Access to ultrasound on the ward | 59 (73%) | 22 (27%) | 67 (75%) | 22 (25%) | $\chi^2=0.13$ $p=0.72$ |
| Regular dedicated ultrasound training session | 8 (10%) | 73 (90%) | 19 (21%) | 70 (79%) | $\chi^2=4.18$ $p=0.04$ |
| Ultrasound training mentor | 27 (33%) | 54 (67%) | 39 (46%) | 50 (56%) | $\chi^2=1.96$ $p=0.16$ |

P34 ARE NURSING STAFF SUFFICIENTLY EDUCATED AND COMPETENT IN MANAGING PATIENTS WITH A CHEST DRAIN?

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Background The British Thoracic Society recommends that patients with chest drains should be nursed on a ward familiar with their care. Instruction from doctors and appropriate training of nursing staff is imperative to minimise complications associated with chest drains. Our audit aimed to determine the nurses' level of knowledge regarding chest drain management and the support and direction provided by doctors following drain insertion.

Methods We undertook a prospective case-note audit of chest drain insertion, management and complication rates. In addition we interviewed 100 nurses across medical wards familiar with chest drains, and they undertook a structured questionnaire about training, knowledge and confidence in chest drain care.

Results 29 chest drains were inserted. 65% patients suffered no complications but 25% patients reported pain during or following drain insertion. Potential for serious incidents was high; 20% of effusions drained $>2l$ within the first hour and 10% of pneumothoraces were clamped following insertion. Although all nurses reported to have managed a drain only 12% had received formal training and only 34% felt confident in managing a drain. Complication rates correlated with nurses' responses; 34% believed pain-relief was only indicated following insertion; 8% would clamp a drain inserted for a pneumothorax, while 20% were unsure whether a pneumothorax drain should be clamped; 16% believed pleural effusion drains should never be clamped, while 28% were unsure. Of those who believed an effusion drain should be clamped, 29% felt this was indicated after $>2l$ was drained within the first hour. Of concern, nurses on respiratory wards appeared to have limited knowledge of drain management. 78% of nurses felt poor instruction was provided by ward doctors with regard to chest drain management.

Conclusions Lack of evidence-based nursing care and insufficient training has resulted in uncertainty and knowledge deficit in important aspects of chest drain care, exposing patients to avoidable complications. Poor instructions to nurses from doctors following drain insertion further compromises patient care. A carefully designed and implemented care bundle to guide nurses through drain management could significantly lower post-insertion complications; an example has been rolled out and is illustrated.

P35 PRIMARY SPONTANEOUS PNEUMOTHORAX: ADHERENCE TO GUIDELINES AND HEALTHCARE ECONOMIC IMPLICATIONS

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Introduction International guidelines for the management Primary spontaneous pneumothorax (PSP) vary on the definition of size, and treatment of PSP. The American consensus based ACCP guidelines recommend removal of air via an intercostal drain (ICD) in large PSP, and the BTS guidance suggest needle aspiration (NA) first, with quoted success rates of 30%–80%.¹ In 2005/6 there were 5954 finished consultant episodes for PSP in England.²

Methods We performed a retrospective audit of PSP presenting to the Emergency Department (ED) over a 24-month period. Electronic