‘Blowing in the wind’ – Management of pneumothorax

WHICH CLINICAL FACTORS ARE PREDICTIVE OF OUTCOME IN PRIMARY SPONTANEOUS PNEUMOTHORAX MANAGEMENT?


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Background Primary Spontaneous Pneumothorax (PSP) refers to collapse of the lung (with air in the chest) in the absence of trauma in patients with no underlying lung disease. This causes pain and breathlessness; often requiring admission to hospital and chest drain insertion (median stay 4–5 days). There is no good evidence to predict which patients will resolve and who will fail treatment (defined as ongoing PSP at Day 4). This study aimed to determine whether clinical factors such as duration and severity of symptoms, and PSP size are associated treatment failure.

Methods This study used prospectively collected data from the 236 patients from RAMPP randomised trial [Hallifax et al, Lancet 2020;396:39–49]. Clinical data were collected from hospital records and daily patient questionnaires.

Results Patients had a median breathlessness score of 40.8/100 and pain score of 31.3/100 at admission. 63/236 (26.7%) failed treatment. On average, symptoms started 1 day before admission. 96/236 patients (40.7%) presented on the day symptoms started: their risk of treatment failure was higher (33.7%) than patients presenting >=1 day after symptoms began (22.8%). Interestingly, a low baseline breathlessness or pain score was also associated with greater risk of failure (34.6% and 31.1%, respectively, vs 21.1% and 24.0% for high score). Patients with larger PSP (>=4cm at the hilum on chest x-ray) had longer treatment duration (median 3 vs 1 days if <4cm).

Conclusion Risk of treatment failure was greater in PSP patients presenting on the day symptoms began, and unexpectedly, in those patients with lower pain and breathlessness scores. Further work is required to generate a tool to predict treatment failure.

Introduction Percutaneous CT-guided lung biopsy (PCTLB) is the most important diagnostic test for an early-stage lung cancer. Pneumothorax after PCTLB is a common problem with an incidence of 26–60%. About 3–15% of these patients require drainage, commonly with a chest drain insertion to drain the pneumothorax. Despite the magnitude of this problem, there is limited evidence on the management of pneumothorax after PCTLB. Consequently, there is a proposed variability in practice in the UK about the management of pneumothorax after PCTLB which has never been explored before.

Methods We conducted a UK-wide online survey over 3 months to understand the practice of managing pneumothorax after PCTLB. This survey was aimed at the respiratory and radiology physicians as well as the specialist trainee registrars. The survey was advertised through the UK Pleural Society and INSPIRE network for respiratory and via BSTI for radiology physicians. The survey consisted of 10 multiple-choice format questions including 2 case-based scenarios and the completion time was 2 minutes.

Results 58 responses were received: 29/58 (50%) from the respiratory physicians, 20/58 (35%) from the respiratory/radiology trainees and 9/58 (15%) from the radiologists. The management approach towards the clinical case showed significant variability with an overall trend of favouring interventional options, mainly chest drain insertion and inpatient admission (figure 1). Among the factors affecting treatment decisions, chest pain and breathlessness in patients with pneumothorax after PCTLB were more important for the treating physicians compared to drop in oxygen saturations by >2% from baseline. 51/58 (88%) respondents used 12Fr chest drain for pneumothorax drainage. The use of thoracic suction was less common and only used by 12/58 (21%) respondents.

Abstract P2 Figure 1
There was no widespread use of treatments like biopsy plugs to prevent pneumothorax development in high-risk patients.

**Conclusion** This survey highlights that there is a significant variability in practice in managing pneumothorax after PCTLB and the overall trend favours interventional management. We need robust research to understand the optimal management of pneumothorax after PCTLB to help develop clinical consensus and to avoid unnecessary interventions.

**REFERENCE**


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**P3**

**SURVEY OF PLEURAL PROCEDURES PERFORMED BY GENERAL MEDICAL REGISTRARS**

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**Introduction** Pleural procedures form a core component of the general internal medicine curriculum. Out-of-hours (OOH), as defined by the 5pm-9am time period, provision for these procedures is usually facilitated by the on-call medical registrar. We explored how confident medical registrars are in performing pleural procedures.

**Methods** We investigated the number of OOH pleural procedures being performed by medical registrars and their perceived confidence with the procedures. We used a retrospective anonymised questionnaire sent by email to medical registrars in the South West England deanery.

**Results** We received 62 responses. 19 (31%) were ST3–4 grade registrars 43 (69%) were ST5–7. There were 12 respiratory registrars and 50 non-respiratory registrars. Specialities included acute medicine, cardiology, elderly care, endocrinology, gastroenterology, palliative care, renal and rheumatology.

14 (23%) registrars had performed at least 1 OOH pleural aspiration with an average of 0.35 procedures performed per respondent per year (SD 0.81).

3 (21%) people felt those procedures could have waited to be done in hours, 2 (14%) were unsure. 5 respiratory registrars had done an OOH pleural aspiration and 3 felt this could not have waited to be done in hours.

26 (42%) registrars had performed at least 1 OOH chest drain with an average of 0.78 per respondent per year (SD 1.43). 6 (23%) reported they felt the procedures could have waited to be done in hours, 3 (11%) were unsure. Out of 12 respiratory registrars, 10 had performed an OOH chest drain and 8 (80%) felt these could not have waited to be done in hours.

22 (44%) non-respiratory trainees reported feeling not at all confident with their ability to perform pleural aspirations and chest drains. All respiratory registrars felt very confident with both pleural aspirations and drains.

**Discussion** Medical registrars are frequently performing pleural procedures and yet a substantial proportion of non-respiratory registrars do not feel confident in doing so. This raises questions regarding the role of the medical registrar in providing OOH emergency pleural procedures and its place in the curriculum. More support or a dedicated OOH pleural service may be required to ensure patient safety.

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**P4**

**PNEUMOTHORAX TRENDS 2010–2020: A SINGLE CENTRE RETROSPECTIVE STUDY**

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**Introduction** Work by Halifax et al in 2018 and 2022, suggested increasing inpatient burden of pneumothorax and widespread variation in management. Local trends have never been elucidated. Northumbria Healthcare NHS Foundation Trust (NHICT) has a well-established pleural service, serving just over 600,000. A retrospective cohort study was thus performed.

**Methods** A coding search for ‘pneumothorax’ was performed for all patients attending NHICT between 2010 and 2020 was performed with local Caldicott approval. 1698 notes were analysed to exclude iatrogenic, traumatic and paediatric events. 580 remained and those were analysed- 183 primary pneumothoraces (PSP) and 397 secondary (SSP).

**Results** Median age for PSP was 26.5 (IQR 33) with 69% male, and for SSP 68 years (IQR 68), 62% male. 23.5% of PSP and 8.6% of SSP were never smokers. Proportion of smokers and ex-smokers has not really changed over time: >65% every year have been smokers or ex-smokers. Yearly pneumothorax incidence shows a downward trend for PSP but upwards for SSP (figure 1). Median length of stay (LoS) for PSP was 2 (IQR 2), and SSP 5 (IQR 8), with a clear downward trend (figure 1). From 2010–2015 >50% PSP were managed with drain, but in 2019–2020 at least 50% managed conservatively, with significant reduction in aspiration. Trends of recurrence for PSP are increasing whereas for SSP is