in health care costs. One suggested method to reduce premature drain removal is to use intercostal drains with ballooned tips. These would provide a relatively atraumatic physical obstruction to the thoracostomy site, whilst being easy to use as stitching or extensive taping may not be required.

Methods We conducted a pilot study of a dedicated 16F ballooned intercostal drain (Rocket Medical; Figure 1) to assess its safety and feasibility, and to give an indication as to whether a reduction in accidental early drain removal could be achieved. Drains were inserted under ultrasound guidance using the Seldinger technique and secured with dedicated dressings. Skin sutures were not applied. Pain scores were collected from a subset of 11 patients using a visual analogue scale (VAS) from 0 (no pain) to 10 (worst pain imaginable) at insertion, 24h post-insertion, and drain removal to ensure pleural irritation was not prohibitive.

Results Twenty patients requiring intercostal tube drainage as an in-patient for pleural effusion were recruited from a single hospital site. Of the drains inserted, 1/20 (5%) was prematurely dislodged, comparing favourably with the literature. Inspection of the device showed that the balloon had become partially unglued from the drain, hence deflation. The patient did not require further pleural procedures. No other drain-related adverse events were recorded. The drains were generally well tolerated, with median(range) pain scores at insertion, 24 hours, and removal of 1 (0–7), 3 (0–8), and 2 (0–7).

Conclusion The use of a dedicated ballooned intercostal drain is safe and feasible, and may reduce the need for drain re-siting. A larger randomised trial is planned.

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Lung Cancer Investigations

P16 RADIAL EBUS BIOPSY WITH GUIDE SHEATH FOR PERIPHERAL PULMONARY LESIONS

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Introduction The aim of lung cancer screening programs is the detection of early lung cancer, which may appear as small peripheral pulmonary lesion (PPL). Although radial EBUS guided biopsy is recommended by NICE to obtain tissue diagnosis in PPL which cannot be seen by conventional bronchoscopy, there is a paucity of published data within the UK regarding this technique. We looked at our 4-year radial EBUS results at our tertiary centre.

Methods We reviewed 71 consecutive patients who underwent radial EBUS guided biopsy for investigation of a PPL, performed using a guide sheath (K201 or K203) by a consultant operator assisted by a respiratory trainee. We assessed the diagnostic rate, yield from sampling techniques (biopsy vs brushings), whether the diagnosis correlated with other procedures/management, and any complications.

Results Mean patient age was 70 years (range 44–89), 38 female, and 41 (58%) had undergone 1 or more unsuccessful investigations at their local hospital. We were able to visualise the lesion by ultrasound leading to subsequent sampling in 62/71 (87 %)

patients. A diagnosis of malignancy was confirmed in 41/62 (66%) patients. Of the 21 biopsies which did not demonstrate malignancy, 11 were subsequently shown to have cancer (false negatives—pathological diagnosis by other methods or clinical-radiological diagnosis or awaiting follow up) but were 10 true negative (resolution or 2 year stability on CT scan). The yield for malignancy was superior with brushings (88%) compared to biopsy (73%). The overall sensitivity for cancer was 72% (N = 71, whole cohort) and 82% (N = 62, lesion was visualised by ultrasound) respectively. Two patients developed a pneumothorax which did not require intervention.

Conclusions Radial EBUS is a safe and effective technique in obtaining tissue diagnosis in PPL not amenable to other biopsy methods. We visualised the lesion in 87% of patients and our diagnostic yield for malignancy is similar to current standards. Radial EBUS should take a more prominent role in diagnostic pathways for PPL within the UK, particularly in the context of future lung cancer screening programmes.

P17 A RETROSPECTIVE ANALYSIS COMPARING THE USE OF PROCORE WITH STANDARD FINE NEEDLE ASPIRATION IN ENDOBRONCHIAL ULTRASOUND GUIDED TRANSBRONCHIAL NEEDLE ASPIRATION (EBUS-TBNA)

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Endobronchial ultrasound has become first line in the investigation of mediastinal lesions suspicious for malignancy in keeping with NICE guidelines, however needle size and type, along with number of passes required to maximise diagnostic sensitivity remains unclear.

Previous meta-analyses, the largest of which included 576 patients,¹ have compared the use of ProCore with standard fine needle aspiration in the assessment of pancreatic masses with differences noted only in the number of passes required.

We aim to assess whether a ProCore needle improves diagnostic sensitivity in EBUS-TBNA.

Complete follow up data regarding all 235 patients undergoing EBUS-TBNA in a district general hospital has been collected since the service's inception in 2012. Results were collated and retrospectively analysed allowing for calculation of test sensitivity and specificity. Comparison was then made between procedures where standard fine needle aspiration was performed and those using a ProCore needle.

Overall sensitivity of EBUS-TBNA was shown to be 85% with a specificity of 100% in keeping with quoted figures from other centres. Standard fine needle aspiration produced a sensitivity of 77% (85/110) versus ProCore sensitivity of 92% (115/125) with a p value of 0.0016.

30% (33/110) of patients undergoing standard fine needle aspiration required an appropriate crossover technique such as mediastinoscopy or CT guided FNA in order to either obtain or confirm the diagnosis compared with 15% (19/125) of the ProCore group with a p value of 0.0064.

Our retrospective analysis shows a statistically significant difference in the diagnostic sensitivity of sampling mediastinal lymphadenopathy using a ProCore needle compared with standard fine needle aspiration. It also shows that a significantly fewer number of patients required further procedures in order to obtain or confirm the diagnosis. This could potentially be confounded by the retrospective nature of the study design, however due to