

Interventional progress

S31 SAFETY AND YIELD OF PHYSICIAN LED ULTRASOUND GUIDED TRANSTHORACIC LUNG/PLEURAL BIOPSIESR Reddy, M Naeem, G Tsaknis. *Kettering General Hospital, Kettering, UK*

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Introduction Transthoracic ultrasound is important tool in assessing pleural effusions and guiding placement of chest drains. It also demonstrates pleural-based masses and lung tumours abutting the pleura.¹ Such lesions are suitable for ultrasound guided full core needle biopsy.¹ Percutaneous transthoracic lung biopsy with ultrasound guidance is not widely performed by respiratory physicians.¹

Objective To assess safety and yield of ultrasound guided transthoracic biopsy performed by respiratory physicians.

Methods The procedures were carried out in an outpatient or bed side setting between April 2014 and Jun 2015. Apart from checking clotting and omitting antiplatelet/anticoagulants no special prior preparations were undertaken. Under real time transthoracic ultrasound, lesions involving pleura or abutting the pleura which were >1.5 cm were sampled 2–3 times with a full core biopsy needle (Biopince 18G). Repeat thoracic ultrasound was done after 10 min to check for pneumothorax. Patients were discharged home around 30 min post procedure.

Results 51 patients underwent full core biopsy for suspected peripheral lung (44), pleural based (6) and Mediastinal tumours (1). The biopsies were considered adequate in 47 cases (94%). Diagnosis was achieved in 43 patients with an overall yield of 84% (Table 1) whilst the yield for malignancy was 82% (36/44). Of the 8 patients with a negative biopsy, malignancy was diagnosed at surgery in 2 patients and CTGB (CT guided biopsy) in 6 patients. Complications were minimal with one patient developing a small pneumothorax (2%) and another had a small subcutaneous hematoma. After the introduction of the service the waiting list for CT guided biopsies in our hospital has been eliminated.

Abstract S31 Table 1

	Malignant	Benign	Nondiagnostic
Total (n = 51)	36 (70%)	7 (14%) (Vasculitis 1, TB 1, Non specific inflammation 3, other 2)	8 (16%) (All proven malignant later)

Conclusion Ultrasound guided peripheral lung/pleural mass biopsy can be performed by trained respiratory physicians with excellent yield and very low complication rate. Used appropriately it reduces the waiting list for CTGB.

REFERENCE

- 1 Diacon AH, Schuurmans MM, Theron J, *et al.* Safety and yield of ultrasound-assisted transthoracic biopsy performed by pulmonologists. *Respiration* 2004;**71**(5):519–22

S32 VIRTUAL BRONCHOSCOPIC NAVIGATION FOLLOWED BY RADIAL EBUS TO BIOPSY PERIPHERAL PULMONARY LESIONS: A PILOT STUDYN Denny, J Mills, L Brown, SJ Fowler, M Munawar. *Department of Respiratory Medicine, Lancashire Teaching Hospitals NHS Foundation Trust, Preston, UK*

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Introduction Detection of peripheral pulmonary lesions (PPLs) is on the rise but an accurate means of obtaining a tissue diagnosis without high risk of complications is lacking.¹ Virtual bronchoscopic navigation (VBN) guides the bronchoscope under direct vision and, in combination with radial endobronchial ultrasound (R-EBUS) or ultrathin bronchoscopy, may enhance the diagnostic yield of PPLs with a minimal complication rate.²

Aims To pilot the use of VBN in the diagnosis of PPLs. To identify patient and lesion characteristics that predict successful VBN.

Methods Images from chest CT (slice width 1–1.25 mm) were acquired from patients, and lesion features, including location and presence of a bronchus sign (bronchus contained within PPL), were recorded. CT images were transferred to a portable workstation and Lungpoint Broncus © was used to create a virtual pathway to the PPL. Bronchoscopy was performed with VBN followed by R-EBUS guidance, under conscious sedation, and biopsies obtained. Pre-procedure characteristics, biopsy adequacy, biopsy outcome, 30-day follow up and complications were recorded.

Results The median age of our cohort (n = 7) was 79 and all patients had one or more comorbidities. PPL median size was 28 mm and all were located in sub-segmental bronchi. VBN guided the operator to the correct site in six cases. Adequate biopsies were taken from five patients; four had a positive bronchus sign. Three adequate biopsies received a diagnosis of primary lung cancer; those remaining were negative. One patient with inadequate biopsies underwent transthoracic needle biopsy (TTNB) and was diagnosed with primary lung cancer. No complications occurred in spite of the significant co-morbidity of this patient cohort.

Abstract S32 Table 1 Baseline characteristics, biopsy outcome and final diagnosis (n = 7)

Age (years, median and range)	79 (67–84)
Male (n,%)	3 (43)
Lesion size (mm, median and range)	28 (16–47)
Location (lobe and n)	Rt upper lobe 2 Rt lower lobe 4 Lt lower lobe 1
Bronchus sign (n,%)	4 (57)
Biopsies (n taken, median and range)	6 (0–8)
Size of biopsies (mm, median and range)	2 (0–3)
Biopsy quality (n,%)	Adequate 5 (71) Inadequate 2 (29)
Biopsy outcome	Positive 3 Negative 2 Inadequate 2
Final diagnosis	Primary lung cancer 4 Undetermined to date 3

Discussion Our preliminary data suggest that in a selected patient cohort with a bronchus sign, VBN may be a useful and safe adjunct to R-EBUS to obtain a tissue diagnosis from PPLs. In contrast, TTNB has a high diagnostic sensitivity but is