TBNA histology specimens using both 21G and 22G needles in confirmed primary lung adenocarcinoma.

Methods A prospective analysis was performed on 250 consecutive patients undergoing EBUS-TBNA between 2009 and 2013. 21G or 22G needles (Olympus ViziShot, NA-201SX-4021 and NA-201SX-4022) were used by operator discretion. A minimum of 2 passes were carried out per nodal station. Samples were fixed in formalin and prepared for histopathological analysis. The proportion of confirmed primary lung adenocarcinoma samples in which EGFR mutation testing was feasible was determined.

Results Primary lung adenocarcinoma was confirmed in 45 patients (18%). EGFR mutation analysis was attempted in 35 of these patients and was possible in 34 (97.1%). EGFR mutation was present in 3 patients (8.8%).

Conclusions This single centre study demonstrates both 22G and 21G EBUS-TBNA samples are adequate for EGFR mutation analysis with no clear superiority in contrast to recent data suggesting disease phenotyping may be superior using a 21G needle when analysed by histopathology. We speculate that higher sample usability rates for mutation analysis may have been facilitated by the use of histological specimens however further larger studies are required to confirm this hypothesis.

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M12 EBUS- ARE TWO NEEDLES BETTER THAN ONE?

WA Khan, S Bailey, M Najib; *Manchester Royal Infirmary, Manchester, England*

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Introduction The introduction of endobronchial ultrasound has allowed visual sampling of nodes compared to the previous blind TBNA techniques. It was widely been used for patients with suspected lung. The purpose of our current study was to evaluate the usefulness of using a 2 needle technique compared to a single needle method in ebus sampling. The primary endpoint was to see the effect on the total number of biopsy passes, time between needle exchange and also total time taken to complete an ebus procedure.

Method 20 patients with mediastinal and hilar lymphadenopathy or suspected lung cancer in our institution were included in this prospective study. EBUS-TBNA was performed in all cases. 10 procedures were used using a 2 needle technique and 10 procedures were performed with single needle. Two trained bronchoscopists with 2 trained nurses performing the needle exchange and on site cytopathologist were present at the bronchoscopy giving an instant preliminary diagnosis.

Equal numbers of procedures were performed by each of the operators.

Results EBUS-TBNA was successfully performed in all 20 patients recruited. In the single needle technique the average number biopsy passes performed was 3.8 per ebus with an average needle changeover delay of 2 minutes 21 seconds and an average ebus time of 27 minutes. The two needle technique showed a greater number biopsy passes of 4.4 per ebus with a significantly reduced changeover needle time delay of 18 seconds per changeover and a reduction in overall ebus time to 21 minutes per procedure. All the procedures were uneventful without complications. All sample were labelled adequate by the histocytopathologist.

Abstract M12 Table 1. Results.

	2 needle technique	Single technique
Average number of biopsy passes per ebus	4.4(10)	3.8 (10)
Needle changeover delay (minutes)	18 seconds	2 minute 21 secs
Total ebus time (minutes)	21 minutes	27 minutes
Complications	0	0
Adequacy	100.00%	100.00%

Conclusions Although the numbers performed in the study are small, there is enough evidence from our data to show a significant benefit in a 2 needle technique with a greater number of biopsy passes performed, reduced delay in needle changeover time and reduction in ebus procedure time. This is both beneficial to the patient with a reduced procedure time but also with a potential cost benefit if more procedures can be performed safely in a shorter time period.

M13 OUTPATIENT ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION OF SUPRACLAVICULAR LYMPH NODES, PERFORMED BY CHEST PHYSICIANS FOR DIAGNOSIS AND STAGING OF LUNG CANCER

R Ahmed, MG Slade; *Department of Thoracic Oncology, Papworth Hospital NHS Foundation Trust, Papworth Everard, Cambridge, UK*

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Introduction and Objectives Supraclavicular fossa (SCF) lymph node metastases are detectable in almost half of lung cancer patients where mediastinal lymphadenopathy is present (1). They represent N3 disease, not amenable to radical treatment. Ultrasound guided fine needle aspiration cytology (US-FNAC) is a sensitive test in this setting. We explored the accuracy of outpatient US-FNAC of SCF nodes performed by respiratory physicians.

Methods Outpatients with suspected lung cancer were selected for US guided FNAC of SCF lymph nodes if they had one or more of:

1. Enlarged SCF lymph nodes on CT scanning 2. Palpable supraclavicular lymph nodes 3. Visible non-enlarged SCF lymph nodes on CT with associated mediastinal lymphadenopathy.

After informed consent, the SCF was scanned with the patient semi-recumbent, using a Sonosite US with 13.6MHz linear probe, by MGS, or RA supervised by MGS, a level-2 non-radiologist US practitioner. Real-time US-FNAC was performed using a 21G or 19G needle and the capillary aspiration technique. Three passes were made and cores were put into a cytology fixative (Cytolyt).

Results 14 patients (male = 8, median age 67.5 years) underwent US-FNAC. The median short-axis diameter of the target node was 11.5 mm (range 5–25 mm). A positive malignant diagnosis was obtained in 11/14 patients (78.6%), (adenocarcinoma n = 6, small cell lung cancer n = 4, non-small cell lung cancer n = 1), and all four sub-centimetre nodes gave positive results. There were two false-negatives (14.3%) on an intention-to-diagnose basis, in one of whom no specimen could be obtained. One sample was non-diagnostic. All patients found the procedure easy to tolerate and there were no complications.

Discussion US-FNAC is well tolerated and can be safely performed opportunistically by respiratory physicians during outpatient visits. The diagnostic yield is high and comparable with previous published series. Its incorporation into the lung cancer pathway can facilitate prompt diagnosis and staging without more invasive investigations.

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M14 ROLE OF ENDOBRONCHIAL ULTRASOUND-GUIDED TRANSBRONCHIAL NEEDLE ASPIRATION IN DIAGNOSIS OF ISOLATED MEDIASTINAL LYMPHADENOPATHY (IML)

R Mogal, R Patel, D Mukherjee, B Yung; *Basildon and Thurrock University NHS Hospital, Basildon, UK*

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Introduction and Objectives The recognition of endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) as an important diagnostic modality has been increasing in recent years, particularly following establishment of its use in lung cancer. Mediastinoscopy is considered as the gold-standard investigation for isolated mediastinal lymphadenopathy (IML), despite the invasiveness of the procedure and need for general anaesthesia.

We present a retrospective clinical data in a large tertiary centre for respiratory medicine to evaluate to the role of EBUS-TBNA in establishing a diagnosis of IML and therefore avoiding more invasive techniques such as mediastinoscopy.

Methods Retrospective analysis identified 249 patients undergoing EBUS-TBNA between August 2009 and July 2013, of whom 72 were found to have IML. All patients had CT or PET-CT prior to undergoing EBUS-TBNA. In patients where EBUS-TBNA failed to produce diagnosis, they received clinical and radiological follow up for upto 6 to 12 months or were considered for mediastinoscopy as per clinical needs.

Results Of the 72 patients, 50 were male and 22 were female. For all patients, histological diagnosis was unknown prior to EBUS-TBNA. Confirmed pathological diagnosis was gained in total of 27 patients including 17 cases of sarcoidosis, 8 cases of malignancies, 1 case of tuberculosis and 1 case of ectopic thyroid tissue. Of the 8 confirmed malignancies 2 were adenocarcinoma, 2 were non-small cell carcinoma,1 was squamous cell carcinoma,1 was metastatic prostate carcinoma,1 was metastatic breast carcinoma and 1 was Chronic Lymphoid Lukaemia (CLL). No diagnosis was achieved in 40 patients while sample was insufficient in 3 cases and 2 were false negative (bronchoalveolar carcinoma and sarcoidosis). In all 72 patients, no significant complications were reported. Of the 40 undiagnosed cases, 29 patients were followed up clinically and radiologically and discharged as appropriate while remaining 11 are still under follow up. No patient has been referred for mediastinoscopy.

Conclusions Already established as a safe and minimally-invasive diagnostic technique in pulmonary medicine, EBUS-TBNA provides an alternative for diagnosis of patients presenting with IML. The increasingly successful use of EBUS-TBNA in place of mediastinoscopy and CT-guided biopsy undoubtedly merits further attention in the consideration of investigation of mediastinal lymphadenopathy.

M15 NEBULISED BRONCHODILATORS PRE-BRONCHOSCOPY IN PATIENTS WITH OBSTRUCTIVE LUNG DISEASE: DOES IT HELP?

V Gupta, N Jackson, M Rossall, U Kolsum, R Budd, T Southworth, D Singh; *University of Manchester, Manchester, UK*

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Background Patients with Chronic obstructive pulmonary disease (COPD) and asthma may be at higher risk of complications during bronchoscopy. Previous guidelines have recommended that all patients with asthma receive nebulised bronchodilators pre procedure. At our research centre, we changed our practice in January 2012; since this date we administer nebulised salbutamol to all patients with COPD and asthma pre-bronchoscopy.

Aims We examined research bronchoscopy records from asthma and COPD patients with and without nebulised bronchodilators to determine tolerance of procedure, complications and adverse events, sedation used and success of obtaining samples. We have also examined the overall safety of research bronchoscopies.

Abstract M15 Table 1. Summary of patient demographics, tolerance and saline inserted for BAL.

	COPD			Asthma		
	No Pre-Procedure Neb (n=38)	Pre-Procedure Neb (n=37)	P value	No Pre-Procedure Neb (n=32)	Pre-Procedure Neb (n=33)	P value
Sex (M/F)	22/16	26/11		20/12	18/15	
Age (yrs)	63.2 (5.7)	63.0 (6.1)	ns	44.3 (12.9)	40.8 (10.8)	ns
Pack Yrs*	39.9 (10.2 - 82.8)	42.0 (14.5 - 98.8)	ns			
ACQ*				1.3 (0.1 - 3.0)	1.4 (0.3 - 4.6)	ns
FEV1 (L)	1.7 (0.4)	1.9 (0.5)	0.07	2.9 (1.0)	2.7 (0.8)	ns
FEV1 (%)	61.3 (13.5)	63.7 (11.1)	ns	83.7 (20.4)	80.7 (20.4)	ns
Poor Tolerance	7.9%	10.8%	ns	6.3%	9.1%	ns
BAL (ml)*	480.0 (240.0 - 480.0)	420.0 (0.0 - 480.0)	0.06	480.0 (0.0 - 480.0)	480.0 (0.0 - 480.0)	ns

*denotes median (range)