

Diagnostic Yield of Bronchoscopic Biopsy in the Diagnosis of Peripheral Cancers in the Lung.

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AIM: The incidence of cancers presenting as peripheral lung lesions is increasing. Flexible bronchoscopy is an outpatient diagnostic modality, but biopsies are performed 'blind'. Aim to evaluate the diagnostic yield and safety of trans-bronchial lung biopsy (TBLB) in the histological diagnosis of patients with suspected peripheral lung malignancy.

METHODS: Prospective database of all cases undergoing flexible bronchoscopy at the SGH Endoscopy Centre over 12 months (April 2011-March 2012). Inclusion criteria: patients with suspected cancer based on CT Thorax and clinical history (e.g. smokers, haemoptysis, and weight loss). Those who had endoscopic or radiological evidence of central thoracic malignancy were excluded. Patients with negative results underwent transthoracic needle aspiration, surgical biopsy or had clinic-radiological surveillance for 12 months to establish the final diagnosis.

RESULTS: 121 patients met inclusion criteria: 79 (65%) male and mean age of 63 ± 11.3 years. Mean lesion size: 45 ± 23 mm. Median duration of the procedure: 20 minutes (range 5-75). TBLB successfully diagnosed lung cancer in 90 patients (74.4%) of which 80 (77.7%) were positive for bronchus sign and 59 (78.7%) were positive for pleural apposition seen on CT scan. 32 patients (26%) had procedure related complications: 26 (21%) bleeding, 3(2.5%) significant hypoxia and 2 (1.7%) pneumothorax. Logistic regression showed that patients >65 years of age had a higher risk of complications (OR=2.34, 95% CI= 1.02, 5.37; p=0.045), while patients with middle/lower lobes lesions had a lower risk (OR=0.31, 95% CI=0.13, 0.77; p=0.011)

CONCLUSION: TBLB is efficacious in obtaining a histological diagnosis of cancer in peripheral lung lesions. Older patients and those with upper lobe lesions had a higher risk of complications.

References:

1)ClinicalTrials.gov Identifier: NCT01374542

Table 1: Baseline Characteristics& Bronchoscopic details

Total number of patients	No. 121
Male gender (%)	No. (%) 79 (65.3%)
Age	Mean $\pm$ Standard Deviation in years 63.4 (11.3) Median (Range) in years 64 (36,90) 54
Lesion size Location RUL RML RLL LUL LLL	Mean $\pm$ Standard Deviation 45 $\pm$ 23 mm No. (%)37/121 (30.5%) No. (%)16/121 (13.2%) No. (%)21/121 (17.3%) No. (%)30/121 (24.7%) No (%)17/121 (14%)
Procedure duration	Median (Range) in minutes 20 (5,75) 70
Sedation Midazolam Fentanyl	Median (Range) in mg 3(0,12) 12 Median (Range) in Mcg 50(0,100) 100
No. of biopsy specimens	Median (Range) 8 (2,14) 12
Complications Hypoxia Bleeding Pneumothorax Others	No. (%) 3/32 (9.37%) No. (%) 26/32 (81.25%) No. (%) 2/32 (6.25%) No. (%) 1/32 (3.13%)
Size of lesion ≤ 30 >30 ≤ 20 >20	No. (%) 24/41(58.5%) No. (%) 66/80 (82.5%) No. (%) 9/16 (56.3%) No. (%) 81/105(77.1%)
Bronchus sign +ve Bronchus Sign -ve	No. (%)80/103 (77.7%) No. (%) 10/18(55.6%)
Pleural Apposition +ve Pleural Apposition -ve	No. (%)59/75 (78.7%) No. (%)31/46 (67.4%)
Diagnostic Yield Overall	No. (%) 90/121 (74.4%)