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| Radial EBUS with Ultrathin Bronchoscopy for peripheral lung lesions has high diagnostic yield – A single center experience |
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| **Introduction:** Radial probe endobronchial ultrasound (RP-EBUS) bronchoscopy is a minimally invasive technique for diagnostic tissue sampling of pulmonary lesions.  **Aim:** To study the diagnostic yield and safety of RP-EBUS in the evaluation of benign and malignant peripheral pulmonary lesions at a single tertiary centre in Western Australia in 2022-23.  **Methods:** All patients who underwent RP-EBUS between 01 January 2022 and 30 September 2023 were identified from a prospective bronchoscopy database at Sir Charles Gairdner Hospital. Cohort demographics and RP-EBUS outcomes were audited.  **Results:** 92 patients (males, 55%; mean age, 69.5 years; mean FEV1, 2.3L) underwent RP-EBUS. The lesion was peripheral (outer 2/3 of the lung) in 55 patients (60%) and solid in 83 cases (90%). Median lesion size was 2.5cm (IQR 1.7-3.8). All cases were bronchus sign positive (88% concentric, 12% eccentric) on CT. The lesion was successfully reached bronchoscopically in 85 cases (92.39%). 49 patients (53.26%) were diagnosed with a malignancy and 39 patients (42.39%) had a benign diagnosis. The diagnostic accuracy of radial EBUS was 93.48% for malignancy (89.09% sensitivity, 100% specificity).  Ultra-thin bronchoscopy (Olympus BF-MP190F) was performed in 38 cases. The lesion in this sub-group was peripheral in 24 cases (63.15%), solid in 36 (94.73%) and concentric in 31 (81.57%) cases on CT. Median lesion size was 2.3cm (IQR 1.7-3.2). Using RP-EBUS via ultra-thin bronchoscope, 16 patients (42.10%) were diagnosed with malignancy and 18 (47.36%) had a benign diagnosis. The diagnostic accuracy of radial EBUS in this sub-group was 86.54% for malignancy (76.19% sensitivity, 100% specificity).  One patient developed an asymptomatic pneumothorax and three patient required hospitalisation for hypoxia management. There was no major bleeding.  **Conclusion:** In this single-centre cohort, the diagnostic accuracy of RP-EBUS for malignancy in peripheral lung lesions was 93%; the diagnostic accuracy was 86% when combined with ultra-thin bronchoscopy for smaller peripheral lesions.  **Grant Support:** None |