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| **Cell block molecular testing: Rapid-on-site-cytology slides could save repeat procedures.** |
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| **Introduction/Aim:**  Non-small cell lung cancer (NSCLC) patients require mutation analysis at diagnosis.1 During an endobronchial ultrasound guided transbronchial needle aspiration (EBUS-TBNA), samples include Rapid-on-site cytology on ‘diff-quick’ slides. Novel techniques2 allow next-generation panel sequencing for mutations from ‘Diff-Quick’ slides with high sensitivity and minimal cellular material. This has not yet become routine.  In lab work-up, cell blocks may be deemed insufficient for mutation testing due to low tumour content, sometimes necessitating repeat procedures. We audited the adequacy of cell block samples for mutation analysis in patients diagnosed on EBUS-TBNA. The objective was to determine the proportion of patients with inadequate cell block, but potentially sufficient DNA on ‘Diff-Quick’ slides.  **Methods:**  All EBUS-TBNA procedures at the RBWH between 1/3/2020 and 30/6/2023 were audited. Patients whose EBUS-TBNA yielded adenocarcinoma or NSCLC-NOS were reviewed to assess cell block adequacy for molecular testing, and if not, whether further procedures were undertaken. Cytologist report of ‘Diff-Quick’ adequacy was assessed. ‘Scanty’ Diff-Quick slides were considered inadequate.  Patients on other studies of molecular testing were excluded.  **Results:**  Ninety-nine patients had malignancy requiring molecular analysis. Cell block Molecular testing was possible in 75 patients: 61 sufficient for NGS panel testing. Only single gene EGFR testing was possible in 14 patients, of which 8 had less than the recommended 20ng of DNA, average 6.1ng.  Of the 24 patients (24%) with insufficient material for cell block testing, 20 had adequate ‘Diff-Quick’ cytology results. Of these 13 underwent further procedures – 8 bronchoscopies, 3 CT-guided biopsies, 2 musculoskeletal biopsies. Of the 8 repeat bronchoscopies, 2 were again insufficient. All repeat procedures had adequate material on “Diff-Quick".  **Conclusion:**  Inadequate cell blocks for molecular testing is common. Most such cases have adequate tissue on Diff-Quick slides which could allow molecular testing. Using slides could reduce the costs and risks of repeat procedures.  **Grant Support:**  Nil |