

# **Pleural fluid residue as a diagnostic tool for cytology-negative malignant pleural effusion: A proof-of-concept study**

## **ABSTRACT**

Pleural fluid residue, or macroscopic tissue, circulating freely in the pleural fluid obtained through direct filtration, may carry diagnostic histopathological information. We aimed to determine the histopathological concordance of pleural fluid residue in diagnosing TPE and MPE, compared with conventional pleural biopsy. This was a prospective cohort study of consecutive inpatients with cytology-negative exudative effusion who underwent pleuroscopy and had their initial suctioned pleural fluid filtered for residue samples. Pleural fluid residue demonstrated malignant cells in four out of seven cases of pleural biopsy-confirmed malignancy. Pleural fluid residue has comparable cytomorphology, but reduced cellularity compared with pleural biopsy. No tuberculous histological features were present in the pleural fluid residue samples. In this preliminary study pleural fluid residue provided histopathological information for malignant pleural effusion, but no incremental diagnostic information for tuberculous effusion. However larger and more definitive studies are required to clarify these findings, and to explore the utility and suitability of pleural fluid residue for mutational analysis.