

### 3.06 A retrospective analysis of five years of culture positive pleural fluid isolates in a tertiary referral centre

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**Background:** The bacteriology of pleural infection is complex. Positive pleural fluid culture may reflect true pleural infection or sample contamination.

**Methods:** We performed a retrospective analysis of all culture positive pleural fluid samples received in a tertiary referral centre over a five year period from 2019-2023. We looked at culture isolates as they related to fluid characteristics, method of sampling, duration of intercostal drainage, and outcomes.

**Results:** 160 positive culture isolates were analysed from 143 individual patients (27% female). Staphylococcus species were most commonly isolated (43%). 33% of positive samples were polymicrobial. 50% of positive cultures were sampled >72 hours after chest drain insertion. Streptococcus and Mycobacterium species were far more likely to be isolated when samples were sent within 72 hours of the pleural procedure (89% each) than later. Conversely, pathogens isolated when sampled >72 hours post-procedure were more likely to represent contaminants, such as Candida (49%) and Enterococcus (73%) species. The risk of secondary drain infection was significantly less for Seldinger (31%) than for surgical drains (58%) ( $p=0.0017$ ).

**Conclusions:** A substantial proportion of positive pleural fluid culture is likely related to contamination or secondary infection, though there was no significant difference in morbidity or mortality between these groups.