

Pleural sliding or lack thereof: how easy to interpret on thoracic ultrasound?

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Background

Thoracic ultrasound (TUS) is widely used in the management of pleural disease due to high sensitivity in diagnosis of pleural pathology and widespread availability. Pleural sliding is a normal TUS finding, abolished by the presence of effusion, pneumothorax and impaired or absent following pleurodesis. Given the importance of lung sliding as a diagnostic test, this study aimed to assess the reliability, ease and interpretation of abnormal pleural sliding in a range of clinicians.

Methods

Seventeen delegates at a Pleural Diseases teaching course were given a short lecture on pleural sliding on TUS including clips of normal and abnormal sliding. Delegates then watched a series of 14 clips of B-mode TUS in patients who had undergone pleurodesis, and asked to independently score the degree of sliding using one of three descriptors; present, absent or equivocal. Each clip ranged between 5-10 seconds and was looped until each candidate was satisfied. Before the session, candidates were divided into 3 groups according to self-rated TUS experience. Group A had advanced experience (6 candidates), group B basic experience (8 candidates) and group C limited or no experience (3 candidates).

Two pleural fellows with level 1 Royal College of Radiologists TUS certification agreed on the “final” scoring of the 14 clips on the same scheme as above.

Results

The “final” score of the clips were: 5 clips showing sliding, 4 showing non-sliding and 5 equivocal. Overall, candidates agreed with the final description in 60% of the clips, with slight differences according to experience (64%, 53%, 59% for groups A, B and C respectively). Sliding was identified in 87% of the times (96, 90 and 82% in the 3 groups). Absent sliding was correctly identified in 78% of cases (85, 75 and 75% in the 3 groups). Agreement between fellows and candidates on equivocal slides occurred in a low number of cases (19% overall, 16, 0, 24% in the three groups).

Conclusion

Overt pleural sliding appears to be relatively reliably identifiable regardless of the degree of experience in TUS. In situations where sliding is impaired to some degree, this can be more challenging. This has important implications on the applicability of using TUS to diagnose diseases such as pneumothorax, which mainly manifests as lack of pleural sliding.