

## **Echogenic swirling and pleurodesis outcome**

**Background:** Echogenic swirling (ES) is commonly seen on ultrasound (US) examination of malignant pleural effusion (MPE) and has been hypothesised to be related to enhanced intrapleural fibrinolytic activity.(1) Pleurodesis is commonly offered to MPE patients, but previous markers suggested to predict pleurodesis outcome (e.g. pleural fluid glucose, pH) were not robust. This study aimed to investigate whether ES is associated with effusion recurrence.

**Methods:** Patients with MPE, who had pleurodesis at our unit between 2016-2017 and had recorded assessable US videos or images were included. Cases with non-expandable lung following fluid evacuation were excluded. Pleurodesis failure was defined as fluid recurrence on one month X-ray or need for further interventions in 3 months.

**Results:** 37 cases met inclusion criteria. The primary tumour was mesothelioma in 18 patients, breast in 7 and lung in 6. Failure rate of pleurodesis was 48%. ES was seen in 14/18 cases with failed pleurodesis, while it was seen in 5/19 cases with successful pleurodesis (Chi square 9.7, p value 0.003). There was no significant difference in fluid protein level (median (IQR) of 46 (42-48) g/L in success group vs 40 (35-44) g/L in failure group) or LDH level (median (IQR) 270 (182-432) IU/L in success group vs 188 (99-940) IU/L in failure group). No significant difference in pleurodesis outcome was noted according to the primary tumour.

**Conclusion:** ES seems to be associated with a higher rate of pleurodesis failure in patients with MPE. This needs to be validated in prospective fashion in a larger patient cohort and to be correlated to other variables such as cytological positivity and degree of pleural thickening.

### **References**

1. Chen et al. Chest 2004;126(1):129-34.