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Title: Endobronchial coil penetration into the pleural space

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This case report has not been previously presented or published in any other form. It was previously submitted to Thorax earlier this month with the submission reference thoraxjnl-2018-211572.R1. It was rejected solely due to a lack of written consent. The patient is now deceased. Following several attempts to obtain consent from relatives, a consent form has now been signed by the patient's next of kin.

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Case

A patient with severe emphysema, post pulmonary rehabilitation and on full inhaled treatment underwent elective placement of 8 endobronchial coils (RePneu Lung Volume Reduction Coils) in the right lung to attempt endoscopic lung volume reduction, targeted at the upper and lower lobes. The patient was not suitable for surgical open lung volume reduction, and was unable to undergo valve treatment due to homogenous disease and an incomplete fissure on thoracic CT. Twelve hours post endobronchial treatment, the patient experienced chest pain and respiratory distress, and a large right pneumothorax was demonstrated on chest radiograph. The patient required immediate chest tube insertion, and chest radiographs pre and post chest tube insertion demonstrated a coil visible in the right costophrenic angle adjacent to the collapsed lung (Figure 1, Panels A and B), which had entirely migrated in to the pleural space. Thoracic CT confirmed the pleural coil position (Figure 2 panel A). As thoracic surgery was not feasible due to anesthetic risk, medical thoracoscopy was undertaken under local anesthetic and sedation. The coil was identified in the pleural space (Figure 2 Panel B), and successfully removed (Video 1). The pneumothorax resolved over 48 hours of chest tube drainage post thoracoscopy, and the patient was discharged.

Although pneumothorax is a known complication of coil insertion, occurring in 9.7% of cases (1), the usual mechanism is thought to be expansion of the non-treated lobe resulting in visceral tear and leak. Coil migration to cause visceral tear, (2) and incomplete migration have been reported (3), but to our knowledge, this is the first report identifying complete migration in to the pleural space, and coil rescue via medical thoracoscopy.

References

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