

# Endobronchial coil penetration into the pleural space

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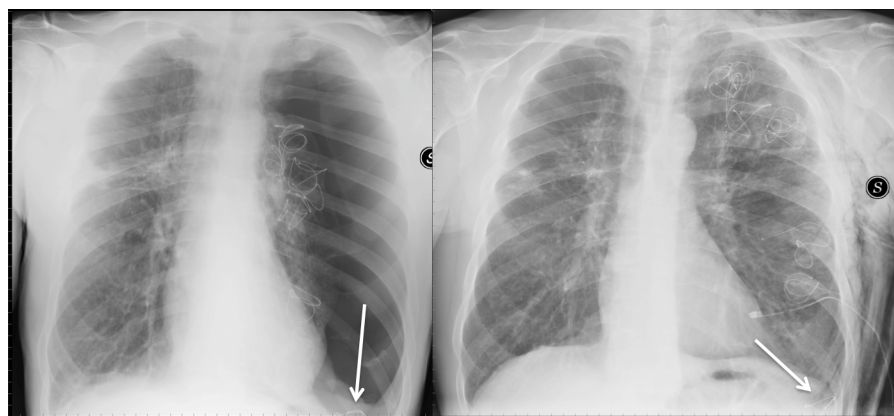
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### CASE

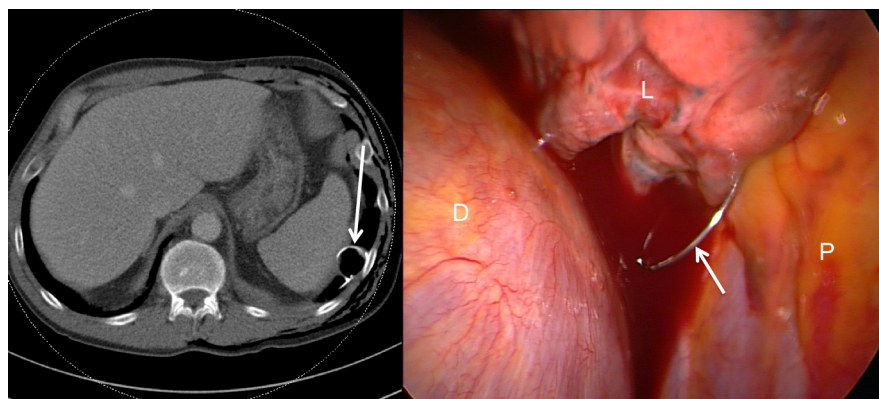
A patient with severe emphysema, post pulmonary rehabilitation and on full inhaled treatment underwent elective placement of eight endobronchial coils (RePneu Lung Volume Reduction Coils) in the right lung to attempt endoscopic lung volume reduction, targeted at the upper and lower lobes. The patient 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 chest tube insertion and post chest tube insertion demonstrated a coil visible in the right costophrenic angle adjacent to the collapsed lung (*figure 1A,B*),

which had entirely migrated into the pleural space. Thoracic CT confirmed the pleural coil position (*figure 2A*). As thoracic surgery was not feasible due to anaesthetic risk, medical thoracoscopy was undertaken under local anaesthetic and sedation. The coil was identified in the pleural space (*figure 2B*) and successfully removed (*online supplementary 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,<sup>1</sup> 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<sup>2</sup> and incomplete migration have been reported,<sup>3</sup> but to our knowledge, this is the first report identifying complete migration into the pleural space and coil rescue via medical thoracoscopy.



**Figure 1** (A) Post procedure large pneumothorax with the coil visible (arrow) in the pleural space. (B) The coil in situ (arrow) post lung expansion after chest tube insertion.



**Figure 2** (A) The coil (arrow) visible in the pleural space within pneumothorax. (B) The thoracoscopic view (D, diaphragm, L, lung, P, parietal pleural surface) with the coil in the pleural space (arrow) with a small haemothorax.

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