Endobronchial management of Prolonged air leak post VATS assisted de-roofing of pleural hydatid cyst

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Background:

• Persistent Air Leak (PAL)- air leak from lung parenchyma into pleural cavity that persists for more than 5-7 days[1]

•PAL common in patients undergoing thoracic surgery, estimated incidence 26% and 46% after lobectomy and LVRS[2]

•Other causes of PAL: spontaneous pneumothorax, necrotising pneumonia, barotrauma from mechanical ventilation, chest trauma[2]

Case report:

• We present a case of a woman in her 30s who developed PAL after undergoing video-assisted thoracoscopic surgery (VATS) assisted deroofing of left pleural hydatid cyst.

•Initially managed with conservative measures.On POD 7, bronchoscopy was done, which revealed leakage from the apical and posterior segments of the left upper lung lobe. The patient subsequently underwent bronchoscopy and fluoroscopy-guided coil embolization with glue placement of the bronchi supplying affected segment

• air leak resolved after that and patient discharged.

Imaging:

- CECT thorax+ Abdomen:
  - Showed 2 well defined multilocular cyst with thick internal septations in superior segment of left lower lobe and Apico-posterior segment of left upper lobe, no obvious communication with the airways. (Fig. 1)
- Diagnosis of left pleural hydatid cyst was made.

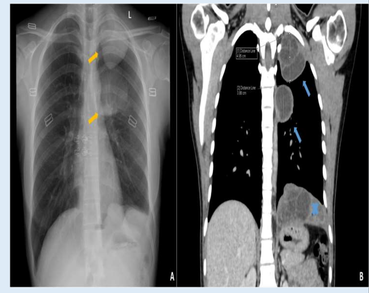

Fig. 1

Management:

- Conservative management with Bronchoscopy-fluoroscopy guided coil embolization with glue placement
- ***Findings after conservative management:***
  - CT showed large left pneumothorax with collapsed left lung with ICD in situ. (Fig.2)
- ***Bronchoscopy-fluroscopy Procedure:***
  - Multiple air leaks noted from subsegmental bronchi supplying posterior And apical segment of left upper lobe.(Fig.3)
  - Involved bronchi selectively occluded with vascular embolization and glue
  - Check bronchogram – no air leak was identified.
- *Post procedure:*
  - Day 1 post procedure- complete resolution of air leak from ICDs
  - Near complete resolution of left sided pneumothorax
- The patient is asymptomatic at six- month follow up. (fig 4)

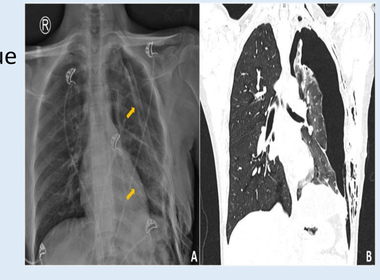

Fig. 2

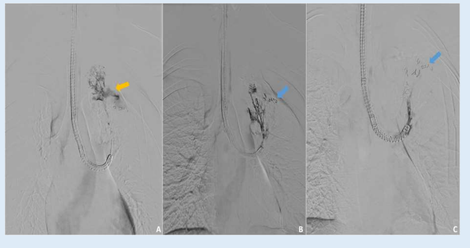

Fig. 3

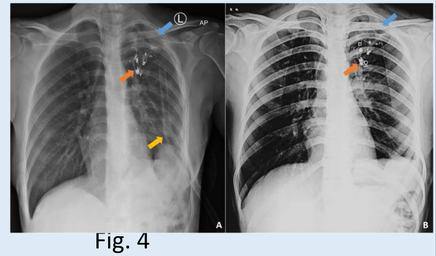

Fig. 4

Conclusion:

• coil embolization with glue placement in the affected bronchi is a viable treatment option for PAL following thoracic surgery.

Learning points:

- Early diagnosis of pneumothorax is crucial.
- Chest x-ray & CT chest are main tool for diagnosis.
- Endobronchial management is good alternative to surgery

References:

1 Roberts ME, Rahman NM, Maskell NA, Bibby AC, Blyth KG, Corcoran JP, et al. British Thoracic Society Guideline for pleural disease. Thorax. 2023 Jul;78(Suppl 3):s1–42

2 Ruenwilai P. Bronchoscopic management in persistent air leak: a narrative review. J Thorac Dis. 2024 Jun 30;16(6):4030–42