Reversal of Right Upper Lobe Pulmonary Arterial Flow Due To Extensive Shunting From The Right Bronchial Artery In A Patient With Aspergilloma Presenting With Haemoptysis

放射科 Radiology

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Case History

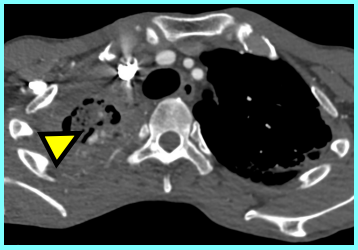
A middle aged Chinese man with a history of pulmonary TB had presented with massive haemoptysis.

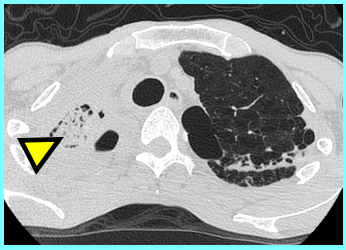
Imaging Modalities

Scout view radiograph

- A large cavitating mass sited at the apex of the right lung with associated reduced lung volume and ipsilateral tracheal deviation
- Fibrocalcifications are noted at bilateral upper zones, suspicious for prior granulomatous infection

Contrast-enhanced CT Thorax





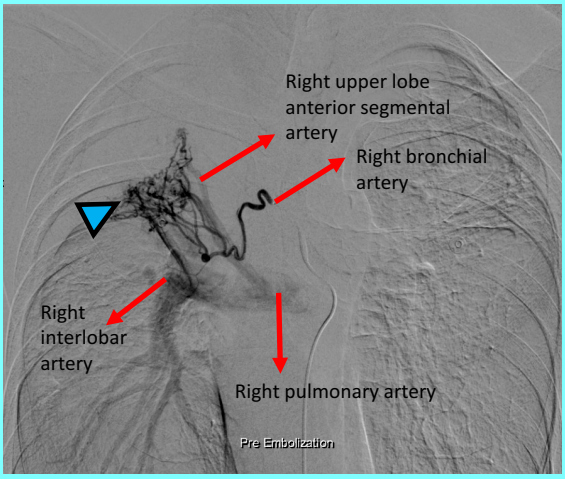
- A large cavitating mass (yellow arrowheads) measuring 5.9 x 4.3 x 4 cm is noted at the right apex
- Destruction of the right upper lobe is seen
- Background fibrosis is noted
- Features are likely compatible with previous TB lung with cavitation and current aspergilloma (sputum culture +)

- Multiple abnormal vessels are noted (red arrowhead) coursing through the lesion
- No active contrast extravasation noted

Acknowledgements

All staff and radiographers at QMH, especially those at CT suite and interventional suite (angiography, Room 6)

Right Bronchial Arteriogram



- Right bronchial arteriogram demonstrates the presence of large vascular shunts (blue arrowhead) to the RUL pulmonary arteries (PA) showing retrograde flow towards the right interlobar artery
- Shunting via the R posterior and anterior intercostal arteries to the RUL pulmonary arteries also noted
- Embolisation of the abnormal RUL feeding bronchial arteries and right posterior intercostal arteries was performed with 25% NBCA glue
- Coil embolization was performed at the right internal mammary artery, which gave rise to multiple bronchial vessels communicating with the right PA
- Haemoptysis had subsequently resolved

Summary and Key Observations

- Retrograde flow in a pulmonary artery related to previous pulmonary TB and aspergilloma has not been previously reported
- Several case reports of reversal of flow of pulmonary artery in relation to congenital heart disease are known in the literature, with detection made on doppler ultrasound
- Secondary BA malformation can develop in chronic inflammatory / infectious lung conditions; hence it is important to recognize that the intercostal and internal thoracic arteries can be recruited and hemoptysis may persist/recur if these are not embolized adequately
- Recognition of shunting to PA and retrograde flow of PA is important during embolization to prevent accidental embolization of non-target parts