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Aortobronchial fistula successfully treated with thoracic endovascular aortic repair

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DESCRIPTION

Within the causes of haemoptysis, aortobronchial fistulas (ABFs) are rare, but are uniformly fatal if left untreated.¹ Intermittent or massive haemoptysis is the cardinal symptom, but it is non-specific and a high index of suspicion is necessary to make the diagnosis.² Traditional surgical treatment carries high mortality and morbidity. We present a case of ABF that was promptly diagnosed and successfully treated with thoracic endovascular aortic repair (TEVAR). An 86-year-old woman presented with an episode of self-limited hemoptysis of approximately 200 ml of bright red blood. She had history of hypertension and was clinically stable. A chest roentgenogram showed prominence of the superior aspect of the aortic arch with a density in the left upper lung field, which raised the suspicion for an aortobronchial fistula causing sentinel bleeding. Emergent CT angiography (CTA) showed a 3.4 cm pseudoaneurysm arising from the aortic arch 3.2 cm distal to the left subclavian artery. It contained intravascular contrast centrally and had a hypoattenuating rim peripherally consistent with thrombus (figure 1A). The patient was taken emergently to the operating room. A bronchoscopy was carefully performed after intubation to confirm the diagnosis of fistula and exclude alternative causes of haemoptysis. It showed blood clots coming from the left upper lobe bronchus consistent with fistulous communication with the ruptured aortic pseudoaneurysm (figure 2). TEVAR

with placement of an endograft distal to the left subclavian artery was performed. A postoperative CTA demonstrated lack of flow into the pseudoaneurysm (figure 1B). She had excellent recovery and was discharged two days later. ABFs are communications between the thoracic aorta and the adjacent tracheobronchial tree or pulmonary parenchyma. The causes include aortic aneurysms, pseudoaneurysms, mycotic aneurysms, traumatic thoracic aorta injuries and penetrating aortic ulcers.² Haemoptysis is the cardinal symptom. It can initially present in small amounts and intermittently which can mislead to a diagnosis of bronchitis but can become massive and cause exsanguinations. A high index of suspicion is essential for early diagnosis and treatment.¹ CTA is the imaging test of choice because of its speed, availability and accuracy. However, it can be difficult to interpret as it rarely allows visualising a fistulous communication, but common findings of consolidation or haematoma in lung parenchyma adjacent to an aortic aneurysm are usually very suggestive of the diagnosis.² Bronchoscopy can localise the area of bleeding when the diagnosis is not clear, but must be limited to inspecting the airways as dislodging clots over a fistulous tract can cause catastrophic bleeding.¹ The historical treatment has been open surgical repair but carries a 15 to 41% mortality.² Recently TEVAR has become the treatment of choice with a success rate of 90% and in hospital mortality of 3%.³

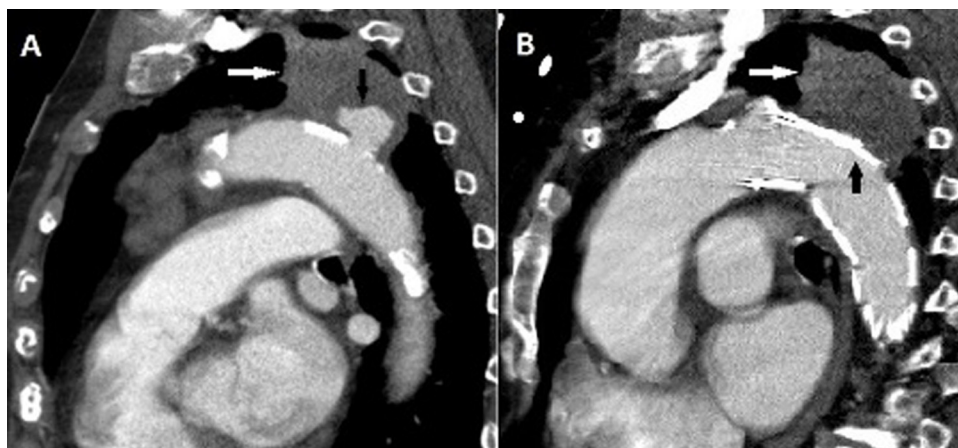


Figure 1 (A) Sagittal view of pseudoaneurysm (white arrow) and extravasated contrast (black arrow) and (B) pseudoaneurysm free of contrast (white arrow) and endograft (black arrow).

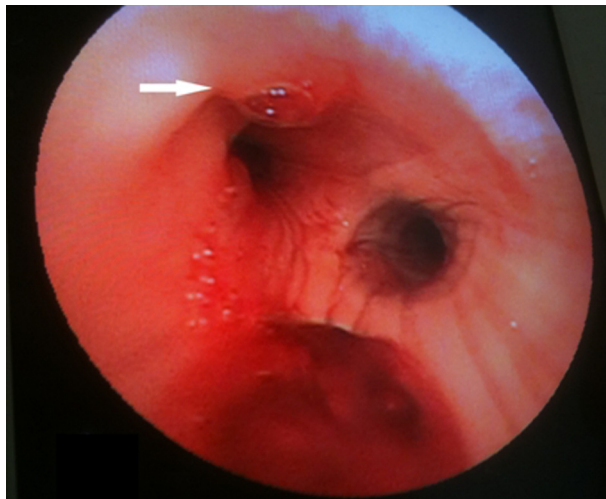


Figure 2 Bronchoscopic view of active bleeding from the left upper lobe (white arrow).

Learning points

- ▶ ABF is a life-threatening condition that requires urgent diagnosis and treatment.
- ▶ High clinical index of suspicion is essential and should lead to urgent investigation with CTA and bronchoscopy when the diagnosis is not clear.
- ▶ TEVAR is the treatment of choice with less morbidity and mortality compared with open surgical repair.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Boujaoude Z, Raja H, Dammert P. Aortobronchial fistula successfully treated with thoracic endovascular aortic repair. *BMJ Case Reports* 2012;10.1136/bcr.01.2012.5622, Published XXX

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