

Case	(560) An unexpected and lifethreatening cause of hemoptysis: an infected thoracic aortic aneurysm.
Authors	B. Márquez Argente Del Castillo, J. Plasencia Martínez, M. Plasencia Martínez, M. Gayán Belmonte, A. García Chiclano, I. García Tuells.
Centre	Hospital Morales Meseguer; Hospital Santa Lucía.

CASE PRESENTATION

A 79 year-old male presented to the emergency department with significant haemoptysis. During the last months, he suffered from perforated duodenal ulcer and appendicitis with pylephlebitis, with surgical treatment only for the first. Imaging findings: An anteroposterior chest x-ray performed at the emergency department showed a new onset of a mediastinal lesion in contact with the aortic arch (figure a), not visible in recent studies and with left upper lobe (LUL) extension later (not shown).

As the patient had haemoptysis, an aortic MDCT-angiography was performed. MDCT in arterial phase (figure b) demonstrated a pseudoaneurysm in the aortic isthmus surrounded by a collection with air bubbles, which infiltrated the adjacent LUL parenchyma. Immediately, a delayed phase was obtained (figures c-d) which highlighted enhancement of the ill-defined collection wall. No active-bleeding was revealed. A septicaemia by *Prevotella* spp and *Bacteroides fragilis* was detected. The patient was treated with endoluminal stent-graft placement and antibiotics. He evolved favourably.

DISCUSSION

Although parenchymal or airway infection are the cause of 70% of haemoptysis [1], a serious vascular disease, not previously suspected and revealed by MDCT-angiography, was the cause in our patient: An infected aortic aneurysm or "mycotic aneurysm". It is defined as an infectious break in the wall of an artery with formation of a saccular outpouching that is contiguous with the arterial lumen (pseudoaneurysm) [2].

They can develop from a normal aorta or from a pre-existing aneurysm due to infectious microemboli in the vasa vasorum during bacteraemia (most common), contiguous involvement from an adjacent focus or direct inoculation.

Differently from atherosclerotic aneurysm, infected aneurysms commonly occur in the thoracic or suprarenal abdominal aorta [3]. To determine the cause and treatment of a lifethreatening haemoptysis, an urgent MDCT angiography should be performed.

To know the radiological manifestations (see figure) and to check with the personal antecedents is crucial to diagnose this entity. Aortic infected aneurysms have traditionally been treated by prompt open surgery in combination with antibiotics, but endovascular techniques are becoming a strong alternative [2], as in our case.

CONCLUSION

Infected aortic aneurysms are uncommon but lifethreatening condition. In the thoracic aorta they can manifest with haemoptysis. Timely diagnosis with MDCT and early intervention are crucial to optimise patient outcome.

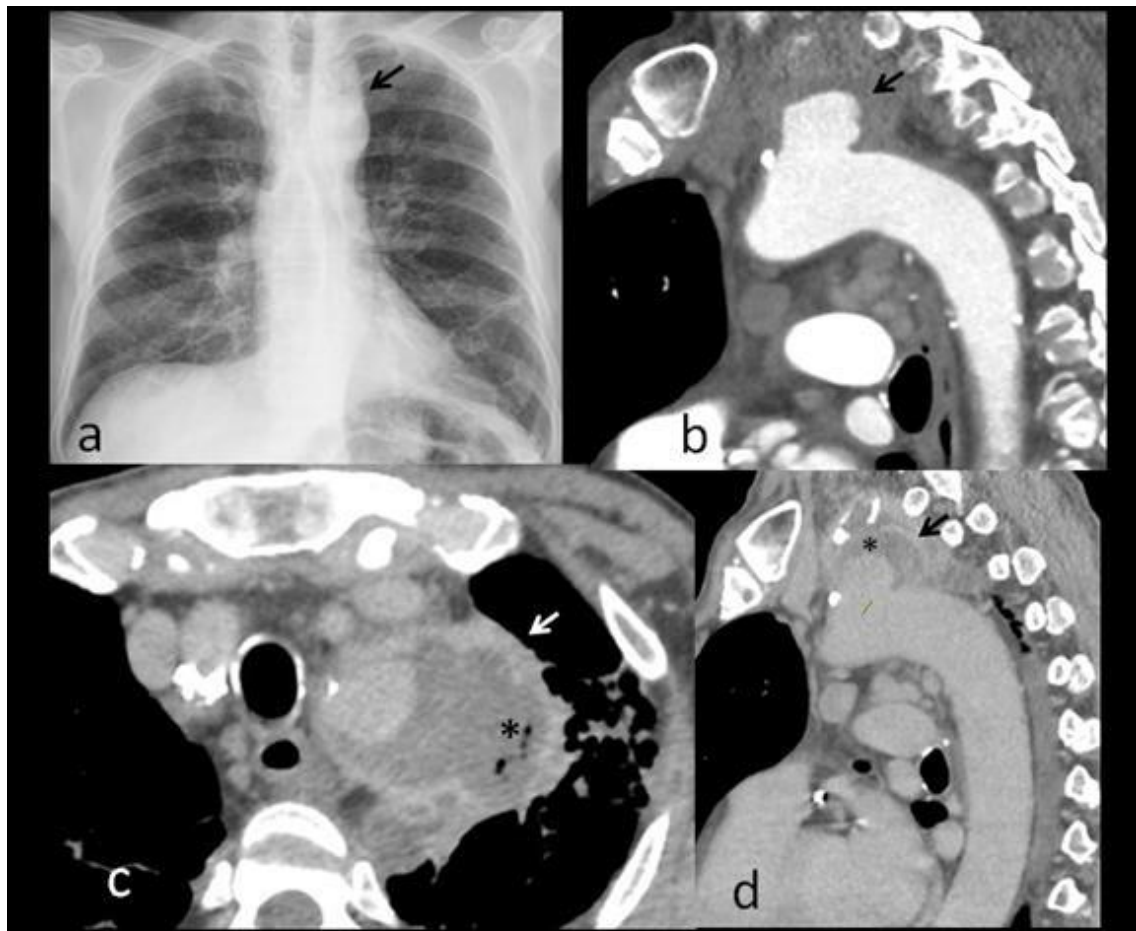


Figure. The anteroposterior chest x-ray showed an onset of a mediastinal lesion in contact with the aortic arch (figure a). A clear left upper lobe and a well-defined aortic-arch was seen in a previous one (performed 47 days earlier, not-shown); a month later a left upper lobe (LUL) opacity effacing the contour of the aortic arch appeared (not-shown), so a MDCT-angiography was done. The MDCT-angiography showed a pseudoaneurysm in the aortic isthmus (figure b, sagittal MDCTA arterial phase) surrounded by a hypodense collection which infiltrated the adjacent LUL parenchyma (asterisks in figure c and d, axial and sagittal MDCTA delayed phase). No contrast extravasations was seen, so no active-bleeding was suspected.

In infected aneurysms, the aortitis early changes include an irregular arterial wall, periaortic edema and soft-tissue mass, and periaortic gas. Fat stranding or a hypoattenuating concentric rim indicate periaortic edema. The periaortic soft-tissue mass can develop in a concentric or eccentric way (figure c and d). If necrosis develops, the initial homogeneous soft-tissue mass would become heterogeneous, with hypodense non-enhancing areas, and peripheral rim enhancement, best depicted in the delayed phase(asterisks in c and d). Periaortic gas (figure c) could be associated with the infection or with an airway fistula.

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