

# Recurrent and fatal haemoptysis caused by an atheromatous abdominal aortic aneurysm

M T A Villar, J Wiggins, B Corrin, T W Evans

## Abstract

**A 74 year old woman presented with a two month history of recurrent small haemoptyses and died after a subsequent massive haemoptysis. At postmortem examination the source of bleeding was found to be a leaking saccular, atheromatous abdominal aortic aneurysm, which had ruptured through the diaphragm into the lower lobe of the right lung.**

Haemoptysis is a common symptom with various underlying causes. It is a rare but well documented complication of thoracic aortic dissection<sup>1-3</sup> but does not appear to have been previously reported in association with an atheromatous abdominal aneurysm.

## Case report

A 74 year old woman was admitted with a 10 day history of haemoptysis, dyspnoea, and right sided chest pain. She was a heavy smoker (50 pack years) with documented chronic airflow limitation. She was breathless and febrile (37.5 C) and had a blood pressure of 140/80 mm Hg. Coarse inspiratory crackles and a pleural rub were audible at the right base on auscultation.

The initial chest radiograph showed an unfolded, dilated aorta, and clear lung fields (fig 1a). The haemoglobin concentration was 12.3 g/dl and the leucocyte count  $11.3 \times 10^9/l$ , and arterial blood gas analysis showed hypoxaemia (arterial oxygen tension 7.8 and carbon dioxide tension 5.1 kPa). An isotope ventilation-perfusion scan showed multiple matched defects consistent with her airflow limitation. Examination of sputum showed no malignant cells or acid-alcohol fast bacilli but subsequent culture grew *Haemophilus influenzae*. Despite intravenous antibiotics the haemoptysis continued, amounting to 50-150 ml per day. There were no abdominal symptoms, back pain, or evidence of circulatory insufficiency. Initial fiberoptic bronchoscopy showed blood arising from the left main bronchus; when it was repeated six days later blood was seen emerging from a right lower lobe bronchus narrowed by clot and necrotic material. Aspirated secretions showed no evidence of malignant cells.

A repeat chest radiograph two weeks after admission showed a rounded, well circumscribed lesion at the right cardiac border with a small right pleural effusion (fig 1b). Thoracic computed tomography with contrast showed aneurysmal dilatation of the lower thoracic and upper abdominal aorta (fig 2). Surgery was considered inappropriate in view of the patient's poor general medical condition. A few days later she suffered a massive fatal haemoptysis.

Postmortem examination showed blood throughout the bronchial tree, a large haematoma in the right lower lobe, moderately severe emphysema with basal bullae, and partial obliteration of both pleural sacs by old pleural adhesions. The base of the right lung was adhering to the diaphragm. Fusiform dilatation of the lower thoracic and upper abdominal aorta was noted, with an atheromatous saccular aneurysm arising immediately below the diaphragm. The aneurysm pointed to the right and had ruptured into the liver and retroperitoneal tissues and through the diaphragm into the right lower lobe, causing haematomas at all

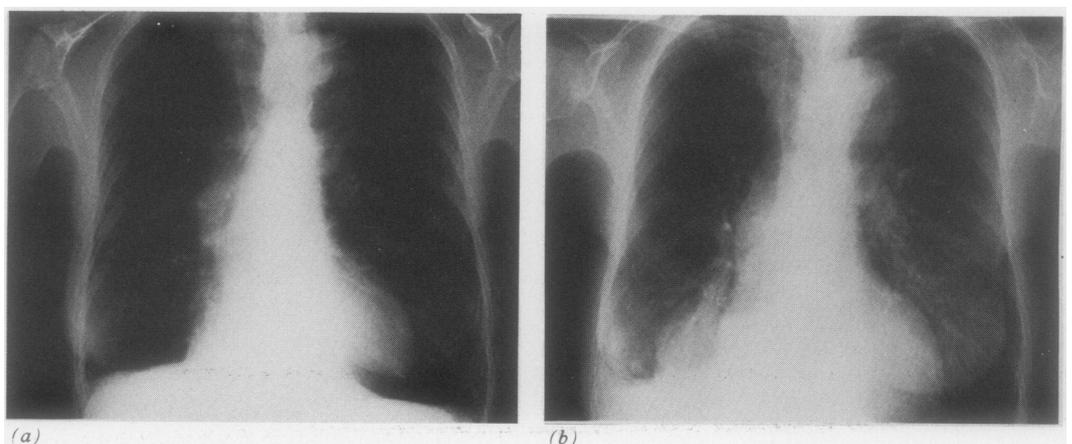


Figure 1 Chest radiographs (a) at admission, showing unfolded thoracic aorta; (b) two weeks later, showing rounded opacity in the right cardiophrenic angle and a small pleural effusion.

Westminster Hospital  
M T A Villar  
J Wiggins

Brompton Hospital  
B Corrin  
T W Evans

London

Address for reprint requests:  
Dr J Wiggins,  
Department of  
Thoracic Medicine,  
Westminster Hospital,  
London SW1P 2AP.

Accepted 22 February 1990

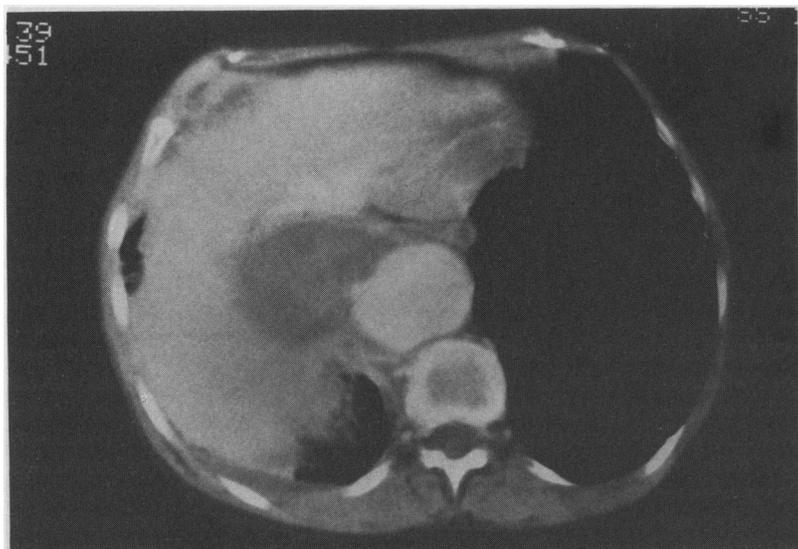


Figure 2 Computed tomogram taken two weeks after admission, showing the superior part of the right lower lobe of the liver, the contrast enhanced dilated descending aorta partly filled with thrombus, and a small right pleural effusion.

these sites. There was no evidence of aortic dissection.

### Discussion

Haemoptysis is a rare but well documented complication of thoracic aortic dissections, occurring in up to 6% of cases<sup>1</sup> but rarely as the sole presenting feature.<sup>2</sup> Haemoptysis associated with a saccular atheromatous abdominal aneurysm, however, does not

appear to have been reported previously.

There was no evidence of rupture of the intrathoracic aorta at necropsy and the likely cause of the patient's fatal haemoptysis was rupture of an atheromatous aneurysm of the abdominal aorta through the diaphragm and the fused pleurae into the lung. The cause of the prior recurrent minor haemoptyses is not known, though the aneurysm might have been leaking into the lung for two months before the final massive haemorrhage. The bronchoscopic identification of blood in both main bronchi on separate occasions may be explained by "spillover" from a single site of haemorrhage.

This case illustrates two points of clinical interest. Firstly, recurrent haemoptyses may result from atheromatous abdominal aortic aneurysms, as previously described in cases of thoracic aortic dissection.<sup>1-3</sup> Secondly, the value of contrast enhanced computed tomography<sup>3</sup> is reinforced. This technique should be considered early in the investigation of recurrent haemoptysis, particularly in elderly or infirm patients who would not withstand aortic angiography well.

- 1 Hirst AE, Johns VJ, Kime SW. Dissecting aneurysm of the aorta: a review of 505 cases. *Medicine (Baltimore)* 1958;37:217-79.
- 2 Guidetti AS, Pik A, Peer A, Shikar S, Ben-Yaakov D. Haemoptysis as the sole presenting symptom of dissection of the aorta. *Thorax* 1989;44:444-5.
- 3 Barbash GI, Solomon A, Reider-Grosswasser I, Vidne BA, Almog C. Aortic dissection presenting with haemoptysis: diagnostic confirmation of dissection and leak by computerised tomography. *Heart Lung* 1983;12:633-5.