

A 75-year-old woman presenting to the emergency department with backache and respiratory distress

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CASE REPORT

A 75-year-old female patient presented to the emergency department with complaints of backache and respiratory distress. Her medical history revealed hypertension and a myocardial infarction three weeks earlier, for which she was taking carbasalate calcium and clopidrogel. At presentation she was responsive, adequately and haemodynamically stable. Her arterial oxygen level was 98% with 5 liters of oxygen supplied by a nasal catheter. Chest X-ray showed a broadened mediastinum, a large non-specific density in the left upper part of the thoracic cavity and a tortuous outline of the thoracic aorta (*figure 1*).

WHAT IS YOUR DIAGNOSIS?

See page 445 for the answer to this photo quiz.

Figure 1. Chest X-ray on admission showing a broadened mediastinum, a large density in the upper left part of the thoracic cavity and a tortuous outline of the thoracic aorta



ANSWER TO PHOTO QUIZ (ON PAGE 444)

A 75-YEAR-OLD WOMAN PRESENTING TO THE EMERGENCY DEPARTMENT WITH BACKACHE AND RESPIRATORY DISTRESS

DIAGNOSIS

The chest X-ray showed a large subpleural haematoma in the left upper part of the thoracic cavity, which was suspected to be caused by a ruptured thoracic aneurysm. Moreover, laboratory tests revealed a severely decreased haemoglobin level of 4.6 mmol/l (normal range 7.5 to 9.8 mmol/l).

To confirm this diagnosis, computerised tomography (CT) was performed immediately after the chest X-ray. It showed a saccular aneurysm of the thoracic aorta, with an extraluminal diameter of 1.9 cm, located in the distal part of the aortic arch. Apparently, the aneurysm had ruptured into the left extrapleural space, between the parietal pleura and thoracic wall, producing a large haematoma of 13 x 8 x 20 cm and subsequent compression atelectasis of the left lung, which contributed to the respiratory distress (figures 2 and 3). A 4.2 cm asymptomatic infrarenal abdominal aneurysm was detected as well. This life-threatening ruptured aneurysm was treated immediately with a GoreTAG® endovascular graft, covering both the aneurysm and the left subclavian artery (figure 4). The extrapleural haematoma was evacuated by thoracocentesis. Due to collateral circulation, there was no circulatory impairment of the left arm. The patient needed multiple blood transfusions. After two days of observation on the intensive care unit she could be discharged to the medical ward. Unfortunately, the procedure was complicated by a stroke, with left-sided hemiparesis and paraparesis of the legs. After 40 days she was discharged to a nursing home, communicating well but in a severely disabled physical condition.

Extrapleural haematoma is a rare condition characterised by a collection of blood between the pleura parietalis and the thoracic wall, mostly due to life-threatening conditions such as a (traumatic) aortic aneurysm rupture. In this patient the bleeding had been delayed due to the effort

needed to leak into this non-existing space. Obviously, bleeding into a non-existing space requires more effort and time than leakage into, for example, the pleural cavity. If the aneurysm had ruptured into the pleural cavity itself, the patient would most likely have died immediately from a hypovolaemic, haemorrhagic shock. Containment of rupture of a thoracic aneurysm is the only chance of survival.

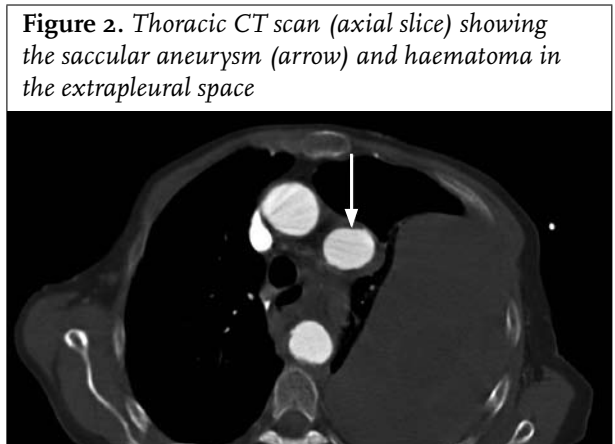


Figure 2. Thoracic CT scan (axial slice) showing the saccular aneurysm (arrow) and haematoma in the extrapleural space



Figure 3. Intraoperative angiography image of the aortic arch

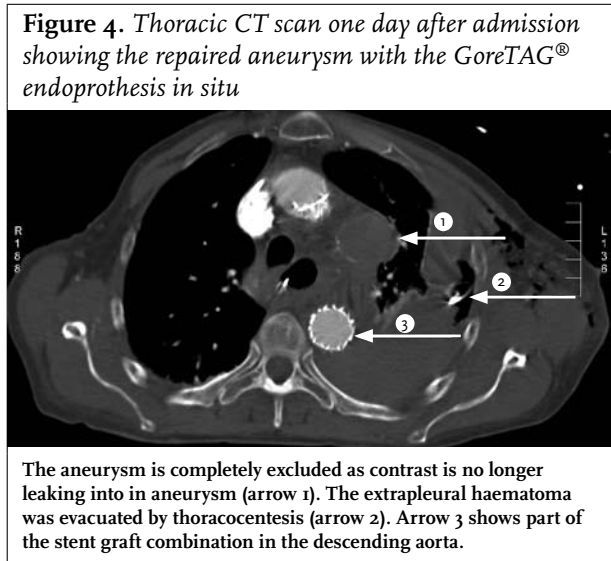


Figure 4. Thoracic CT scan one day after admission showing the repaired aneurysm with the GoreTAG® endoprosthesis in situ

The aneurysm is completely excluded as contrast is no longer leaking into in aneurysm (arrow 1). The extrapleural haematoma was evacuated by thoracocentesis (arrow 2). Arrow 3 shows part of the stent graft combination in the descending aorta.