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CASE REPORT

Chronic pseudoaneurysm of the thoracic aorta due to trauma: 30 year delay in presentation and treatment

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Introduction

Acute traumatic disruption of the aorta (TDA) is a well-recognised sequela of blunt chest trauma caused by severe deceleration. Most patients die at scene; those patients that survive to reach hospital do so because the rupture is constrained by peri-aortic adventitia. Once diagnosed, management options include open surgical repair and prosthetic replacement of the damaged aorta, deployment of a covered endovascular stent or, in carefully selected cases, conservative treatment. Conversely, if TDA is not recognised it may remain asymptomatic for many years, with potential for aortic rupture as the aneurysm sac expands with time.

We report a case in which an endovascular stent was used to treat an acutely symptomatic thoracic pseudoaneurysm caused by a motor vehicle accident that had occurred 30 years previously.

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Case history

A 45-year-old previously fit and healthy male consulted his family practitioner with a 4-week history of persistent cough and intermittent low anterior chest pain that radiated to the back. Previously, the patient had experienced at least two bouts of similar chest pain, one of which necessitated leave of absence from work, although medical attention had not been sought. There was no prior history of cardiac or chest disease. Physical examination was unremarkable. A chest X-ray was ordered which demonstrated a superior medastinal mass with a calcified rim, suggesting a false aneurysm of the thoracic aorta. Computed tomagraphy (CT) of the thorax revealed a non-leaking pseudo aneurysm, 4.7 cm in maximum transverse diameter, arising 4 cm distal to the origin of the left subclavian (Fig. 1). The appearance of the mediastinal mass, which was displacing the trachea and left main bronchus anteriorly, was consistent with long-standing, organised haematoma.

Upon further questioning, the patient recalled a motor vehicle accident that had occurred some 30

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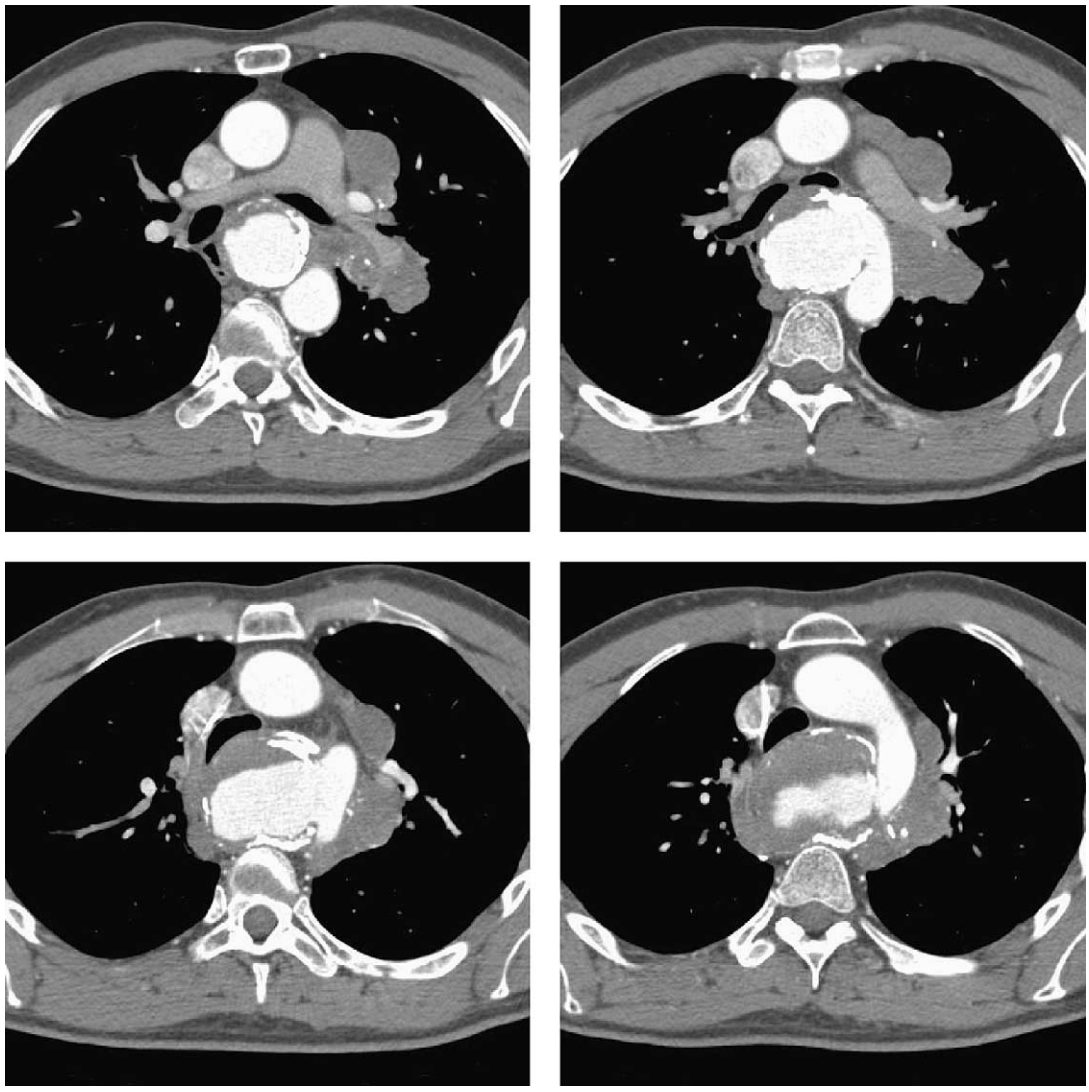

Figure 1 Representative slices of thoracic CT scan, demonstrating thoracic aortic pseudoaneurysm.

years previously when he had been a passenger in a car that was side-impacted by another vehicle. At the time of impact the patient had been asleep and unrestrained in the rear left passenger seat, leaning against the door that was hit. The patient was admitted to his local hospital and diagnosed with a fractured left 1st rib and a left pneumothorax, which was treated with a chest drain. After 2 weeks in-patient stay he was discharged home.

Following the diagnosis of pseudoaneurysm the patient was referred to our unit for further management. He was informed of the available treatment options, and it was decided to proceed with endovascular stenting.

Using a combination of conscious sedation and local anaesthesia, both common femoral arteries were accessed percutaneously and angiography performed (Fig. 2). A 28 mm $\times$ 110 mm thoracic stent (Endomed Inc., Phoenix, AZ, USA) was successfully deployed across the injured segment, with the bare portion of the stent covering the origin of the left subclavian artery. Completion angiogram was satisfactory (Fig. 3). The patient was discharged 4 days later. Check CT scan at 3 months confirmed shrinkage of the aneurysm sac with no evidence of endoleak.

Discussion

Traumatic disruption of the aorta occurs when a number of stresses, generated by a large and sudden change in velocity, combine to tear the aortic wall usually immediately distal to the ligamentum arteriosum.[4] Recent evidence suggests patients are particularly susceptible to aortic injury through nearside, relatively low energy 'T-bone' vehicle accidents.[9,12] The condition may be easily overlooked