

Clinical Communications: Adults

HARD TO DIAGNOSE AND POTENTIALLY FATAL: SLOW AORTIC EROSION POST SPINAL FUSION

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Abstract—Background: Delayed aortic injuries are a rare, but well-recognized complication of spinal surgery. They are a result of slow erosion of osteosynthesis material into the aorta. Although this is a life-threatening complication, patients might present years later with nonspecific symptoms. **Objective:** A complex case of slow aortic injury after thoracic spinal surgery is presented, which highlights the challenges involved in diagnosis and treatment. **Case Report:** A 62-year-old man had a T6 vertebrectomy and T5–7 anterior spinal fusion for multiple myeloma 5 years earlier. Two years postoperatively, the patient developed intermittent hemoptysis that triggered several presentations to the emergency department and consecutive hospital admissions during a 3-year period. All investigations, including endoscopy, bronchoscopy, and repeated chest computed tomography (CT) scans, were unremarkable. Eventually, the patient presented with frank hemoptysis associated with severe left-sided chest pain. Urgent CT angiography revealed a pseudoaneurysm measuring 34 × 20 mm at the level of the vertebrectomy. The patient underwent emergency surgery and an endoluminal stent graft was successfully placed. The patient remains well after 6 months. **Conclusions:** The close proximity of the aorta and spine entertains the risk of aortic injury associated with vertebral osteosynthesis. Long-term complications of slow aortic erosion are extremely difficult to diagnose. The presented patient suffered from an undetected bronchio-aortic fistula with consecutive pseudoaneurysm formation and rupture. Awareness of slow aortic erosion is important for correct diagnostic pathways and subsequent early diagnosis to ensure a positive outcome for the

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Keywords—thoracic aorta injury; spine surgery; bronchial fistula; endovascular procedures; pseudoaneurysm; aorta

INTRODUCTION

Delayed aortic injuries are a rare, but well-recognized complication of spinal surgery. They often pose a great diagnostic challenge, as patients might present years after surgery with a wide range of nonspecific symptoms. Awareness of this potential diagnosis is essential because, if left untreated, it will result in fatal hemorrhage.

We report a case of aortic erosion injury that presented with an acute thoracic hemorrhage 5 years post-vertebral fusion of the thoracic aorta. During the previous 3 years, the patient had several presentations to the emergency department (ED) with hemoptysis. He underwent multiple investigations by various medical specialties before the correct diagnosis was finally made.

CASE REPORT

In 2007, a 62-year-old male patient had a vertebrectomy of the sixth thoracic vertebra (T6) in combination with

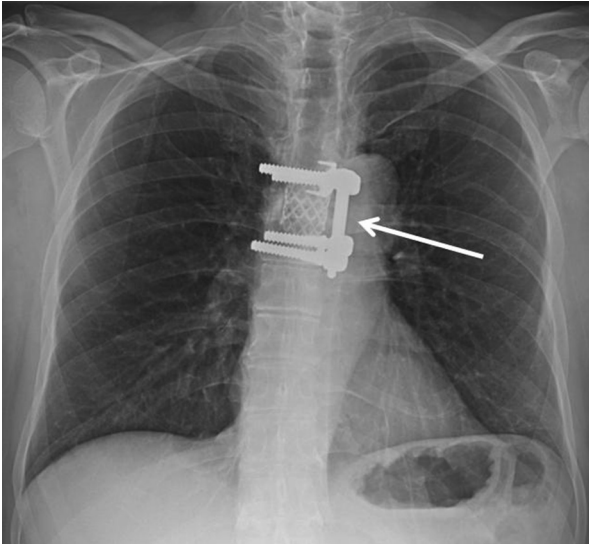


Figure 1. Chest x-ray study demonstrating vertebral screws at T5–7 with lateral rod fixation (arrow).

T5–7 anterior spinal fusion for the management of vertebral destruction by multiple myeloma. An anterior approach was chosen and the fusion was performed using the Kaneda Anterior Scoliosis System (KASS®; DePuy AcroMed, Raynham, MA). Orthopedic follow-up showed satisfactory placement of the vertebral screws at T5 and T7 with a lateral fixation rod (Figure 1).

Two years postoperatively, the patient developed symptoms of mild hemoptysis and back pain, which occurred intermittently. After no satisfying diagnosis was found by the family physician, the patient presented to our ED on each onset of hemoptysis thereafter. Initial computed tomography (CT) scans found no intrapulmonary pathology (Figure 2). After additional presentations, he was referred by the emergency physicians to gastroen-



Figure 2. Computed tomography chest scan 2 years post spinal surgery at level T7 showing metallic lateral rod of vertebral fixation (black arrow) and thoracic aorta (white arrow).

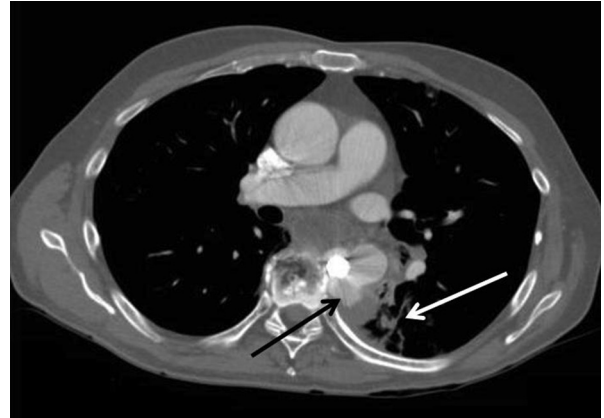


Figure 3. Computed tomography chest scan 5 years post spinal surgery at level T7 showing the pseudoaneurysm (black arrow) and extravasations of contrast (white arrow).

terology for an endoscopy. This identified only mild esophagitis without erosions and the patient was discharged from that service. The ED then initiated a referral to the respiratory physicians with a suspected aortobronchial fistula. However, a bronchoscopy was unremarkable. Additional brief admissions followed without any specific investigations.

In February 2012, the patient re-presented to the ED with hemoptysis associated with severe left-sided chest pain. It was noted that the amount of blood coughed up on this occasion was significantly larger than on previous admissions. There was no history of fevers, shortness of breath, palpitations, or preceding illness reported by the patient. Physical examination was unremarkable. The



Figure 4. Completion angiogram demonstrating successful deployment of the endovascular graft (arrow).

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