

CASE REPORT

Abdominal aortic pseudoaneurysm diagnosed 42 years after abdominal gunshot wound

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INTRODUCTION

Traumatic pseudoaneurysm of the abdominal aorta is a life threatening and a rare condition in aortic injuries. Most lesions are caused by a penetrating injury and may not be detected during the first evaluation. The time interval from initial trauma to appearance of clinical signs and symptoms may range from a few days to many years, and there are only a few reports of delayed presentation.

We describe the case of a 59-year-old man who presented with abdominal pain 42 years after an abdominal gunshot injury. A traumatic pseudoaneurysm of the infrarenal abdominal aorta was diagnosed. Resection of the pseudoaneurysm and a Dacron graft interposition were the treatment, and there were no postoperative complications. The time interval from injury to diagnosis of the traumatic abdominal aorta pseudoaneurysm is the longest found in the literature.

CASE REPORT

A 59-year-old man presented with a history of mild abdominal pain in the lower abdomen for almost a year. The pain had become severe, with radiating to his back, in the 4 days before the patient was seen in our hospital. His medical history included an exploratory laparotomy after an abdominal gunshot injury 42 years earlier. The bullet had entered the epigastrium and did not exit the abdomen. Information about the initial laparotomy was limited because his medical records were not available.

Physical examination revealed that the patient was afebrile and hemodynamically stable (heart rate 72 beats/min; blood pressure 120/90 mmHg). His abdomen was soft, and he had mild pain on palpation of the umbilical region; there was no pulsatile mass. Lower limb pulses were normal, and laboratory tests showed no relevant abnormalities. Contrast-enhanced CT revealed a metal fragment, probably a bullet, impacted in the vertebral body of S1, and a pseudoaneurysm measuring 5.3 cm in diameter in the anterior wall of the infrarenal aorta (Figures 1 and 2).



Figure 1 - Computed tomography in the axial plane shows the chronic pseudoaneurysm of the infrarenal aorta.



Figure 2 - Computed tomography in the sagittal plane shows the pseudoaneurysm in the anterior aortic portion (arrow) and a metallic fragment impacted in S1 (arrowhead).

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The patient underwent a laparotomy with midline incision. The pseudoaneurysm was in the anterior wall of the infrarenal aorta and there were no signs of local

infection or pseudoaneurysm rupture. Repair was performed with resection and placement of an 18 mm Dacron tubular graft with end-to-end anastomosis. During the procedure, embolization of the lower limbs occurred, and bilateral femoral embolectomy was performed successfully. No blood transfusion was required, and the patient remained stable during the procedure.

The aortic wall cultures were all negative; the patient had an uneventful recovery and was discharged 7 days later. At 1-year follow-up examination, he remained asymptomatic.

DISCUSSION

Penetrating aortic trauma is a severe condition, and its mortality rate has remained high despite recent advances in trauma care. The retroperitoneal position of the abdominal aorta and the large amount of surrounding tissue may result in a tamponade of the local hemorrhage. The absorption of this contained hematoma and the fibrosis of surrounding tissues may lead to the formation of a chronic pseudoaneurysm, a rare and severe complication of aortic injuries.¹

Only a few reports have been published since Makins described the first case in 1920.² In a review conducted by Chase et al.¹ 24 cases of traumatic abdominal aortic pseudoaneurysm were identified. Its usual initial presentation is abdominal or back pain, but a pulsatile abdominal mass may also be detected, as well as thromboembolism, compression of adjacent structures, gastrointestinal bleeding and sudden rupture, which is a lethal presentation.^{1,3-5} Clinical signs may be detected from a few days to many years after the injury. The case reported here, with clinical signs and symptoms detected 42 years after the trauma, had the longest time interval from injury to diagnosis ever described. In 1997, Chase et al. reported a case diagnosed 32 years after the initial lesion, and their patient had biliary obstruction and jaundice owing to pseudoaneurysm enlargement.¹ These lesions seem to grow slowly over the years. The diameter may be the main cause of the compression symptoms and may be associated with the hemodynamic stress on the pseudoaneurysm walls and their risk of rupture.

This is an unusual pathology with a wide variability of presentations. Therefore, its diagnosis is usually difficult and greatly dependent on imaging studies. Contrast-enhanced CT has an important role in diagnosing and surgical planning because it can reveal where the lesion is, its extension and its relation to adjacent structures. Moreover, it is usually readily available in trauma care centers and is less invasive than aortography. CT also has high sensitivity and may be used alone to diagnose most cases of this type of pseudoaneurysm.^{6,7}

Surgery may be performed using an open technique for primary aortorrhaphy, patch aortoplasty or resection with graft placement,^{1,8} or an endovascular technique for endoprosthesis placement. When the location is infrarenal, pseudoaneurysm resection and graft interposition is the preferred treatment according to other cases reported in the literature, and we adopted this technique because the patient was young and in good health.^{1,4} In selected patients, the endovascular approach has been effective and avoids a hostile abdomen and retroperitoneum.⁵ In 1996, Parodi successfully described this approach for pseudoaneurysms and other vascular traumas.⁹ Alternative treatments, such as pseudoaneurysm embolization, have been described in selected cases.¹⁰

In patients presenting with abdominal pain and a medical history of abdominal trauma that may have occurred many years before, a high index of clinical suspicion is crucial for the diagnosis of abdominal aortic pseudoaneurysms, particularly when symptoms include back pain or a pulsatile abdominal mass. Imaging examinations should be performed promptly for a precise diagnosis, and the treatment should not be delayed because of the high mortality associated with the spontaneous rupture of these lesions.

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