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CASE REPORT

Mycotic tubercular abdominal aortic aneurysm: A case report

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A B S T R A C T

The mycotic tuberculous aneurysm of the Abdominal Aorta is an extremely rare disease. An aortic mycotic aneurysm is a life-threatening condition caused by tuberculous infection. Tuberculous aneurysms of the aorta usually present as rapidly growing or ruptured pseudoaneurysms. Most of these aneurysms are of the pseudoaneurysm type. We presented a case of a 61-year-old man who was diagnosed with a tubercular abdominal aortic mycotic aneurysm associated with the posterior invasion of the vertebral body leading to discitis. The patient underwent a mycotic aneurysm repair with grafting. Even with a combination of surgical and medical treatment, a favorable outcome could not be achieved.

Keywords: *Aortic aneurysm, Tubercular Aneurysm, Mycotic aneurysm*

Introduction

Unlike what the name might suggest, mycotic aneurysms are predominantly bacterial and are referred to as mycotic due to their physical characteristics. According to a study published in 2001 out of the 2520 cases of thoracoabdominal aortic aneurysm reported, only 1.31% were mycotic in nature.[1, 2] Salmonella and Staphylococcus are the most commonly recognized organisms,[3] whereas, Tuberculous aneurysms are seen in extremely rare cases.[4] Currently, there are 2 recognized surgical approaches for the management of mycotic aneurysms of the abdominal aorta; in situ repair and endovascular repair, with preliminary data suggesting that in situ repair is associated with decreased incidence of graft infection but shows higher operative mortality compared to the endovascular approach.[5] However high-quality data is not available for the management of tuberculous mycotic aortic aneurysms.

Case report

The patient is a 61-year-old male with a history of untreated pulmonary tuberculosis. He presented at a local hospital with the complaint of lower back pain for 2 months which radiated to the right leg. There was an associated low-grade fever and a 17 kg weight loss. On examination, there was tenderness over the L3-L5 vertebrae. An MRI was done and the patient was diagnosed with a right-sided iliopsoas abscess and discitis of the L4 vertebrae and an incidental finding of a possible tuberculous mycotic aneurysm of the abdominal aorta just proximal to the aortic bifurcation. Ultrasound-guided drainage of the abscess was performed. The patient was started on Anti-Tuberculous therapy (ATT) and referred to a tertiary care center for elective aneurysm repair. A Computerized tomography study was conducted (Figure 1, *2* and *3*), suggesting a broad-based saccular aneurysm arising posteriorly from the aorta measuring 26 x 47 x 46 mm (AP x TR x CC), closely abutting the L4 vertebral body.

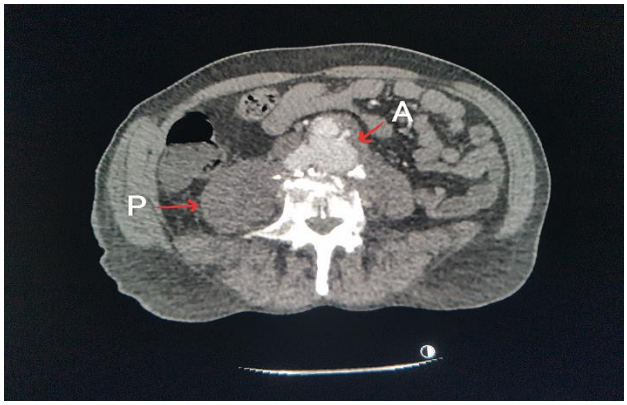

Figure 1: CT Angiogram

An edematous and heterogeneous right psoas muscle (P) is demonstrated due to the presence of the right-sided psoas abscess. Abdominal aortic aneurysm (A) originating from the posterior aspect of the vessel is also visible.

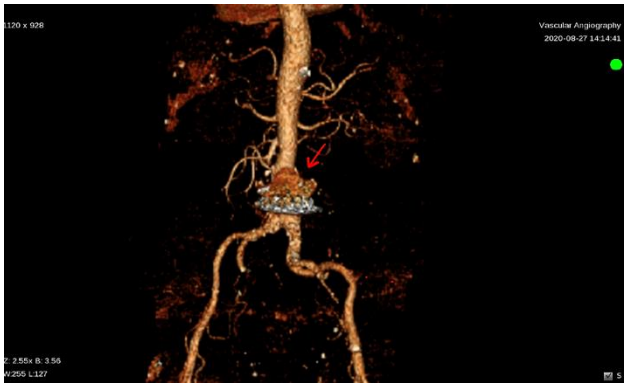

Figure 2: CT Angiogram

A broad-based saccular aneurysm arising posteriorly from the aorta is demonstrated. No active contrast extravasation visible.

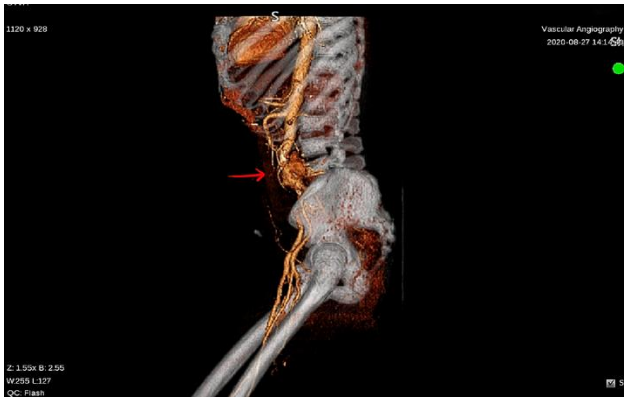

Figure 3: CT Angiogram

A broad-based saccular aneurysm measuring 26 x 47 x 46 mm (AP x TR x CC) is demonstrated.

The patient underwent open surgical repair under general anesthesia, Midline laparotomy was done, the aorta was exposed till the aortic bifurcation, the aneurysm was infrarenal. Proximal and distal control was obtained, and repair was done by resecting and then using a 16x08 Dacron graft. Omentum was packed and secured over the Dacron graft, and the aortic wall was sent for culture and Acid-fast bacteria.

The patient was extubated on postoperative day 1. He remained stable on postoperative days 1 and 2. He subsequently developed increasing abdominal distension and shortness of breath along with worsening renal function tests, hence there was a suspicion of abdominal compartment syndrome secondary to intraperitoneal hemorrhage or fluid overload. The patient and family were offered a re-laparotomy, but they refused. The patient subsequently expired on post-op day 6 due to cardiac arrest.

Discussion

Tuberculous aortitis was first described in 1882.[1] The transmural perforation induced by direct extension of a contiguous tuberculous focus to the vessel, most commonly lymphadenitis,[6] but also the pulmonary,[7] digestives,[8] or spinal TB, is the most common cause of tuberculous aneurysms. Other theories have been proposed, such as spread via blood through the vasa vasorum[9] or an autoimmune response to the tuberculosis.[10] The aorta is the most common site of involvement, affecting both the thoracic and abdominal aortas.[11]

Diagnosing tuberculosis can be difficult if not suspected initially. A preliminary diagnosis is often made based on the presence of A.F.B on microscopic examination of a medical specimen. Treatment may be continued to completion of a conventional course of anti-tubercular medication if Mycobacterium tuberculosis is isolated or confirmed via further testing.

Previously done studies show the evidence that in the tuberculous aneurysms which were treated with a combination of medical and surgical treatment such as periaortic tissue debridement and in situ or extra-anatomic reconstruction accompanied by anti-tuberculous drug therapy for a long time, the mortality rate was just 14%. [9]

Despite the effectiveness of suturing the false aneurysm primarily and its closure by synthetic patch, aortic replacement is recommended since determining the degree of damage to the wall of aorta intraoperatively is challenging.[9] According to a study the normal treatment for tuberculous aortic aneurysm includes graft placement (in situ) along with anti-tuberculosis medication in the majority of cases with long-term follow-up, which usually reveals no signs of future false aneurysms.[12]

Endovascular treatment of tuberculous aortic aneurysms has also been reported in a few places and is now an emerging new surgical option.[13] Endovascular repair may be linked with a significant risk of infection, recurrence and severe bleeding because it does not allow comprehensive debridement of infected periaortic tissues.[14] Furthermore, surgical repair of tubercular aortic aneurysm can have some serious complications such as life-threatening bleeding and prosthetic graft infection.

Conclusion

Tuberculous abdominal aortic aneurysms are extremely rare. However, in the Southeast Asia region where tuberculosis is endemic it is not uncommon and should be suspected highly. As surgical treatment alone cannot cure a tuberculous abdominal aortic aneurysm a prompt diagnosis of tuberculous involvement should be made with the initiation of ATT as soon as possible. The surgical treatment of aortic aneurysms is associated with certain complications, in our case, the patient developed a suspicion of abdominal compartment syndrome secondary to intraperitoneal hemorrhage or fluid overload for which he was offered re-laparotomy, but he refused, leading to ultimately the patient's unfortunate demise.

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