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Case Report Open Access

Ruptured Abdominal Aortic Mycotic Pseudoaneurysm with Aortoenteric Fistula

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Abstract

Mycotic Pseudoaneurysms of the aorta are rare pathologic units accounting for 0.7 to 1.3% of infectious aneurysms of the aorta. Bacterial agents are the most frequently involved, while fungal agents are rare, occurring in areas of immunosuppression. The radiological diagnosis is essentially based on the five CT signs: the presence of the aneurysm sac, inflammation of the periaortic spaces, the absence of thrombi and aneurysmal wall calcifications and rapid growth. The main complication is aortic rupture with septic and hemorrhagic shock.

Keywords: Pseudoaneurysm; Aortoenteric fistula; Radiology

Introduction

Mycotic Pseudoaneurysms (MPAs) are rare pathological units representing 0.7 to 1.3% of aortic aneurysms. It is a surgical emergency with increased risk of fatal complications including rupture and aortic fistula enteric.

Case Report

This is a 50 years old diabetic and hypertensive man who consulted for a prolonged fever for two months with diffuse abdominal pain. The first-line ultrasound examination hampered by aerocoly did not show any abnormality. Suspect, an abdominal CT was requested which showed a fibro-inflammatory infiltration around the sub-renal portion of the abdominal aorta with some satellite nodes (Figure 1), a retro-peritoneal fibrosis was evoked and the patient was put on corticosteroid therapy to reduce the inflammatory syndrome. 10 days after admission, the patient presented with severe metrorrhagia and the evolution was marked by the rapid onset of severe hypovolemic shock, the patient was put under conditions with stabilization of his hemodynamic state and a second CT scan was asked who objectified a retroperitoneal para-aortic collection limited in front by the fourth portion of the duodenum with individualization of an extravasation of contrast product (Figure 2) compatible with a mycotic pseudo-aneurysm ruptured in the duodenum, Le patient underwent surgical treatment (Figure 3) with large debridement of infected tissue and arterial reconstruction. A week after the operation the patient died and the autopsy was refused by the family. The most likely pathogenic mechanism in our case is aortic infection by inoculation of an atheromatous intima during bacteremia (Figures 1-3).

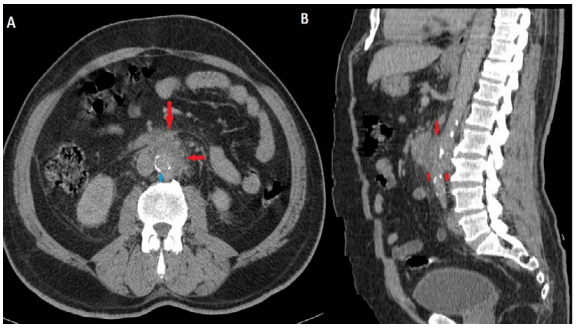

Figure 1: An injected abdominal CT scan with an axial **(A)** and sagittal **(B)** section showing an atheromatous abdominal aorta with multiple ulcerated plaques (blue arrows) associated with a peri-aortic fibrous sleeve and a few satellite lymph nodes (red arrows).

Discussion

Infectious aortic aneurysms, also called mycotic aneurysms, are rare pathological units representing 0.7 to 1.3% of aortic aneurysms it is a surgical emergency with increased risk of rupture and severe sepsis responsible a high mortality rate of 16 to 40% even after surgery [1].

The term mycotic is used to designate any aneurysms of infectious origin, whatever the germ involved, this name dates back to 1885 by Sir William Osler who introduced the term mycotic for the first time to describe the appearance of fresh mushrooms (fresh fungal vegetations) of an aortic aneurysm complicating bacterial endocarditis. As well as the term aneurysm here is used to designate any aortic dilation of infectious origin, regardless of its size [1-3].

MPA can occur according to four mechanisms: Infectious

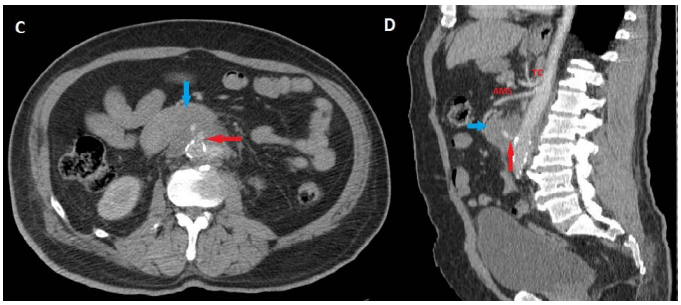

Figure 2: a control abdominal CT scan 10 days after admission with an axial **(C)** and sagittal **(D)** objective showing an aneurysmal sac limited anteriorly with the fourth portion of the duodenum (blue arrow) with extravasation of contrast product in the endoluminal (Red Arrow).

Note: TC- The Celiac Trunk, AMS- Superior Mesenteric Artery

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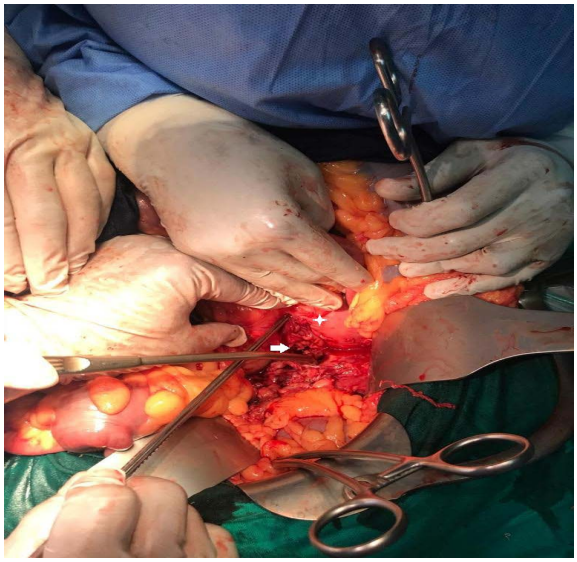

Figure 3: A photo during the surgical exploration showing the aortic breach (the arrow) pressed against the fourth portion of the duodenum (star).

microemboli in vasa vasorum, infection of an atheromatous intima by an infectious agent circulating during a bacteremia, infectious arterial involvement by extension of a focus contiguous infectious and ultimately direct infectious inoculation by trauma to the arterial wall. Pseudoaneurysm is the focal blood collection limited by surrounding tissue secondary to arterial rupture, unlike true aneurysms which involve all three layers of the arterial wall (intima, media and adventitia) [3-5].

Bacterial agents are the most frequently involved in particular Gram-positive Cocci (*Staphylococcus aureus, streptococci, enterococci*) and Gram-negative bacilli (*Salmonella*), fungal agents are rare causes occurring in areas of immunosuppression (Corticosteroid therapy, Immunosuppressant, Chemotherapy, Diabetes and Alcoholism) and atheromatous pathology remains the main risk factor for mycotic aneurysms [6-9].

The clinical presentation is variable and nonspecific explaining the frequent diagnostic delay ranging from a prolonged fever with a pulsatile thoraco-abdominal mass to a surgical complication, in particular aortic rupture or fulminant sepsis, biologically it results in a manifest biological inflammatory syndrome with a hyperleukocytosis, an increase in sedimentation rate and C-reactive protein [9-12].

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