CASE REPORTS

MYCOTIC AORTIC ANEURYSM AS A RARE CASE OF CONSTIPATION AND WEIGHT LOSS

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Abstract

Mycotic aortic aneurysm is a rare entity, manifesting with nonspecific symptoms of abdominal pain, fever, general malaise.

We present a case of an 83-years-old-man, with hematemesis, generalized abdominal pain, and a six-month history of constipation, anorexia, and involuntary weight loss. Upper endoscopy revealed an erosion with oozing hemorrhage and hemostasis was performed. Later he developed a hemorrhagic shock. Abdominal computed tomography disclosed a 3,7x2,5x-2,5cm aneurysm of the abdominal aorta with an aortoduodenal fistula, inducing an inflammatory plastron that encompassed the descending colon and duodenum. The inflammatory plastron prompted partial duodenal and colonic obstruction and led to an atypical presentation of an aortic aneurysm.

Mycotic aneurysms complicated with aorto-enteric fistulas are potentially life-threatening conditions. We highlight the rarity of this case, as the clinical manifestations were prolonged and atypical. The goal is to drive awareness to maintain a high clinical suspicion, as early detection is critical to avoid a tragic outcome.

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Keywords: *mycotic aortic aneurysm, constitutional syndrome, aortoduodenal fistula, EVAR*

INTRODUCTION

Mycotic aortic aneurysms (MAA) comprise 0.6-2% of all aortic aneurysms1. The term 'mycotic' is derived from the mushroom-like appearance of the aneurysms and originally described by William Osler in 18852. The term is used in a broad sense to define any kind of infected aneurysm, regardless of its pathogenesis and underlying microbiological etiology2. Patients usually present with nonspecific symptoms of abdominal pain, fever, general malaise1,3. A late presentation might be septicemia or consequence of fistulization, such as hematemesis3. Primary aorto-enteric fistulas occur as a result of erosion between an aortic aneurysm and a segment of the gastrointestinal tract, most commonly the duodenum, which is involved in 60% of cases4. It manifests as a self-limiting early hemorrhage, followed hours to days later by a life-threatening hemorrhage5.

The diagnosis of a MAA and its complications requires high clinical suspicion and is confirmed by imaging. Surgery and broad-spectrum antibiotics are the treatment's mainstays; however, prognosis is poor, and peri-operative mortality stands between 26-44%1.

Here, we present a rather rare presentation given the insidiousness of the symptoms.

CLINICAL CASE

An 83 years-old-man, presented to the Emergency Department with hematemesis and generalized abdominal pain. On physical examination, he was alert (Glasgow coma scale 15), orientated, with discolored skin, hemodynamically stable and apyretic. A rude vesicular murmur was disclosed

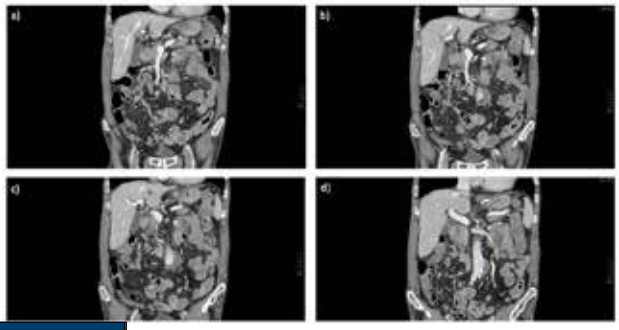

Figure 1 *a) to d) – Axial contrast-enhanced CT showing a mycotic aneurysm at the abdominal aorta. In c) and d) It is evident the presence of gas in the aneurysmatic lumen*

at pulmonary auscultation. The abdomen was soft and depressible, painful to deep palpation, without rebound tenderness or rigidity. Blood tests were remarkable for a hemoglobin of 11g/dL, leukocytes 12000/uL and C-Reactive protein (CRP) of 7,2mg/dL.

There was a six-month history of constipation (intractable), anorexia and involuntary weight loss (unquantified). He had a personal history of chronic obstructive pulmonary disease (COPD) and smoking.

Urgent upper endoscopy disclosed an erosion at the gastroesophageal junction, with oozing hemorrhage. Endoscopic hemostasis was accomplished with clips, polidocanol and adrenaline.

The patient was admitted for surveillance and investigation of the constitutional scenario. He evolved with aggravating inflammatory parameters (leukocytosis, neutrophilia, elevating CRP up to 17mg/dL) along with breathlessness, cough, and purulent sputum. Amoxicillin/clavulanic acid and azithromycin was started, considering the history of COPD and probable superinfection.

On the 5th day of hospitalization, he developed a sudden onset of hypotension and tachycardia, followed by abundant hematemesis, progressing to hemorrhagic shock. Clinically he was obtunded, with painful abdomen but without signs of peritoneal irritation. Urgent CT disclosed a 3,7x2,5x2,5cm aneurysm of the abdominal aorta, distally to the emergence of the inferior mesenteric artery. It was also evident the presence of gas in the aneurysm lumen and there were no cleavage plans with the 4th part of the duodenum/proximal jejunum (Fig. 1 and 2). It was agreed to proceed to open surgical repair (OSR).

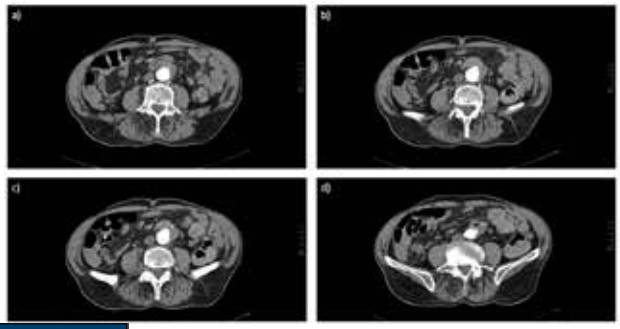

Figure 2 *a) to d) – Coronal contrast-enhanced CT showing the mycotic aneurysm at the abdominal aorta. In a), b) and c) is evident the presence of gas in the aneurysmatic lumen*

Intraoperatively there was an inflammatory plastron that encompassed both the descending colon and the duodenum. This inflammatory reaction led to partial occlusion of the colon and duodenum. An infrarenal aorto-aortic interposition was performed with a 16mm silver-coated Dacron graft. The surgery proceeded with suture of the 4th portion of the duodenum and patch of the greater epiploon, with pyloric exclusion, derivative duodenostomy, gastrojejunostomy and creation of a Witzel feeding jejunostomy(Fig.3). The colon was intact, after detachment of the inflammatory plastron.

Aneurysmatic liquid was collected for microbiological culture and antibiotic therapy switched for meropenem plus vancomycin and maintained for 17 days. Initially the patient evolved favorably, with reestablished intestinal transit and without evidence of hemorrhagic recurrence. He then developed a complicated lobar nosocomial pneumonia and died on the 22nd day of hospitalization.

Blood, urine and aneurysmatic microbiological cultures were negative. Endocarditis as a cause was ruled out by a normal transesophageal echocardiogram. Skin and soft tissue infections were discarded. The only positive culture was a Pseudomonas aeruginosa, isolated on tracheobronchial aspirate.

DISCUSSION

MAA are rare but a life-threatening infection[3,5]. Some risk factors include atherosclerosis, male sex, cigarette smoking, vascular abnormalities and old age[2,6]. The endarterial infection may arise through hematogenous seeding from distant septic foci6, causing superinfection of a diseased and roughened atherosclerotic surface[2,6]. Fistula formation as a complication of a MAA can occur in up to 18% of cases, although some series report an incidence of 69%[2,7].

Blood cultures are positive in 50–75% of patients, with reduced rates in those already under antibiotic therapy[2]. Aortic aneurysm's cultures are positive in only up to 15% of cases, being bacteria the most common pathogens[2,3,7]. In all patients, a transesophageal echocardiogram must be performed to exclude endocarditis5.

Despite the abovementioned recommended investigation, the etiologic source of infection is often unclear, as stated in our case; there was no evidence of endocarditis on transesophageal echocardiogram and no history of trauma, intravenous drug use or immunosuppression.

Pseudomononas aeruginosa is a rare causative pathogen of MAA, especially in immunocompromised patients[1,8]. In our patient, the isolation was only on tracheobronchial aspirate and although it might be the responsible pathogen, it was most probably associated with tracheobronchial infection.

An untreated MAA most certainly leads to a fatal outcome, by uncontrolled sepsis or massive hemorrhage[2,7]. The

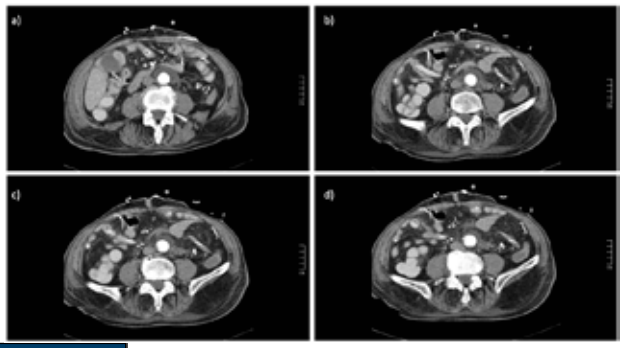

Figure 3 *a) to d) - Coronal contrast-enhanced CT post-surgical intervention*

cornerstone of treatment is broad-spectrum antibiotics and surgery, either by OSR or endovascular aortic repair (EVAR)1. OSR allows resection of the infected aorta and debridement of the surrounding periaortic tissue, followed by revascularization with in situ reconstruction or aortic ligation and extra-anatomic bypass[1,9]. On the other side, EVAR is a minimally invasive approach and, although the stent graft is deployed in an infected field without resection, it has been associated with superior survival1. According to Sörelius et al, we are assisting to a paradigm shift in the treatment of MAA, where EVAR is gradually being performed preferentially over OSR1. This same systematic review concluded that antibiotic treatment for MAA is associated with better outcomes when continued for more than six months post-surgery[1].

In this elderly and comorbid patient, EVAR could have been a valuable option, since the advanced age, rupture and delayed diagnosis were some of the poor prognostic factors that he had[3,10].

We highlight the rarity of this case, as the clinical manifestations were prolonged and atypical - intractable constipation and involuntary weight loss - as the inflammatory process involving the duodenum and colon caused partial intestinal obstruction. Only after six months, he presented the classic manifestation of aorto-enteric fistula, with a herald bleed followed by catastrophic bleeding, traducing a complicated MAA.

This report has the goal to drive awareness to maintain a high clinical suspicion for MAA, especially when the patient has multiple risk factors and signs of infection, as early detection and treatment are essential to avoid a tragic outcome.

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