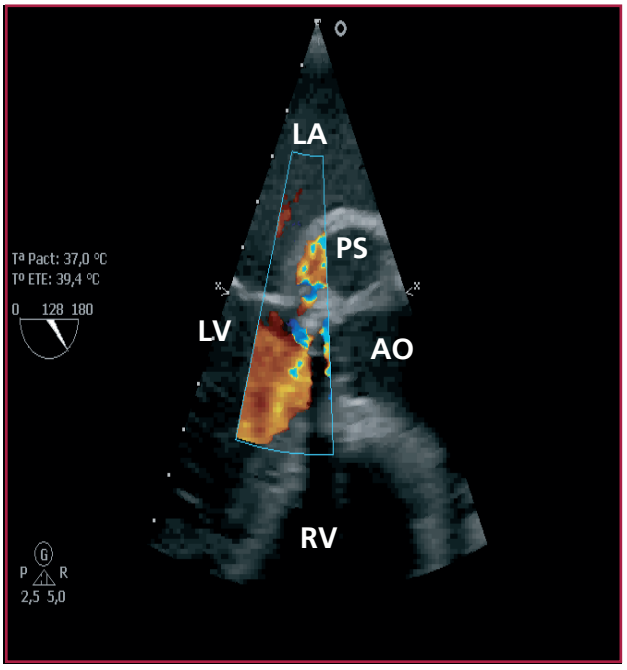

Fig. 2. TEE color zoom image showing pseudoaneurysm with LV communication. LA: Left atrium; LV: Left ventricle; RV: Right ventricle; AO: Aorta; PS: Pseudoaneurysm.

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Endovascular Resolution of Mycotic Abdominal Aortic Aneurysm

Mycotic aneurysms are uncommon. Acquired immunosuppression predisposes to its formation. Early diagnosis and prompt treatment with antibiotics impact on survival. We report a case of mycotic aneurysm of the abdominal aorta by Staphylococcus aureus, successfully treated with endoluminal stent grafting and prolonged antibiotic therapy.

A 72-year old male hypertensive patient, with type 2 diabetes mellitus was hospitalized on November 23, 2007 for acute abdomen. He underwent laparotomy with enterostomy and evolved with nosocomial pneumonia. On December 1st, 2007, he was reoperated for obstruction distal to the suture with interloop abscesses, requiring bowel resection and meropenem and amikacin antibiotic therapy. Fever persisted (December 23, 2007) due to vascular catheter. On January 21, 2008, septic arthritis is diagnosed, surgical drainage is performed and treatment with vancomycin / trimethoprim-sulfamethoxazole is started.

The patient is admitted to our hospital on January 29, 2008 with sepsis for methicillin-resistant Staphylococcus aureus (MRSA). He presents with the following intercurrent diseases: MRSA sepsis with multiple embolic foci, right iliopsoas abscess and sternoclavicular and knee septic arthritis. An abdominal CT scan (Figure. 1A) reveals mycotic aneurysm with contained partial rupture. Endovascular resolution is decided with an Excluder endoprosthesis (Fig. 2) and prolonged antibiotic therapy.

The patient progresses well, and is discharged with vancomycin-sulfamethoxazole + trimethoprim - rifampicin on March 6, 2008. He is in his fourth asymptomatic year with clinical and tomographic control (Figure 1B) and neomycin treatment for life.

Mycotic aneurysms were described by Osler in association with infective endocarditis in 1851. Their true incidence is unknown and it is estimated to be about 0.65% to 1.3% of all aneurysms. (1) Reports are more numerous due to the increase in elderly patients, imaging methods and knowledge of the disease. (2)

These aneurysms are the result of bacteremia and subsequent embolization which causes plaque overinfection. Rarely, the healthy wall is colonized through the vasa vasorum, resulting in the formation of aneurysms. Other pathways are osteomyelitis penetrating directly or through the lymphatic system to the aorta, causing necrosis of the wall with false aneurysm formations and rupture.

The most common microorganisms are Staphylococcus and Salmonella species (28-71% and 15-24%, respectively), with Streptococcus pneumoniae in the third place.

Diagnostic suspicion is based on a pulsatile mass in the context of persistent sepsis with no clear focus, and positive blood cultures (50-85%). Negative blood cultures do not rule out the disease, and in this case imaging becomes very important. Angiotomography findings are: wall disruption, swelling of adjacent soft tissue, or presence of a perivascular mass.

Early diagnosis and therapy with broad-spectrum antibiotics associated with surgical or endovascular treatment directly impact on survival. Endovascular treatment is a good alternative to surgery, as it is minimally invasive and reduces cardiopulmonary, neurological and renal complications in critically ill patients. (2, 3)

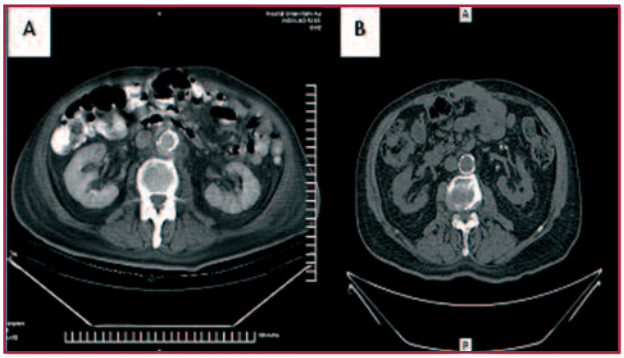

Fig. 1. A. Computed tomography scan without contrast showing mycotic aneurysm. **B.** Control computed tomography scan with stent (year 2012)

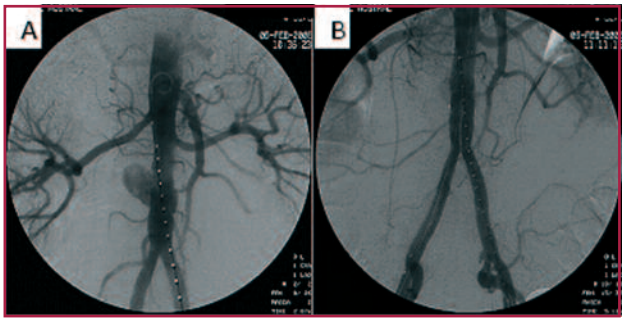

Fig. 2. A. Pre-intervention aortogram. **B.** Abdominal stent

In 1998, Semba et al., were the first to report successful stent treatment in three patients, followed by other studies with similar results.

These works have highlighted the advantage of this procedure compared with surgery [it avoids large incisions, anticoagulation, extracorporeal circulation (in case of thoracic aorta involvement), aortic cross-clamping and hemoderivative transfusions]. Moreover, it shortens hospitalization with fast social reinsertion.

A meta-analysis evaluating survival with endovascular treatment, reported 89.6 ± 4.4% at 30 days and 82.2 ± 5.8% at 2 years survival rates. Furthermore, the only significant independent predictors of persistent infection after endovascular treatment were aneurysm rupture and fever at the time of the procedure. (5)

In conclusion, endovascular treatment of mycotic aneurysm could be a valid alternative to surgical treatment, reducing morbidity and mortality in patients with multiple comorbidities and critical condition.

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