

## Mycotic Axillary Artery Aneurysm

### To the Editor:

A mycotic aneurysm is defined as the limited dilatation of an artery, secondary to an infection of the vascular wall. Spreading of the infection can be intravascular (bacteraemia and septic embolisms especially in infectious endocarditis) or extravascular (contiguous infectious spots, such as abscesses). The relationship between mycotic aneurysms and infectious endocarditis was described for the first time by Osler in 1885 and is a rare complication, especially since it is found in the axillary artery. In the existing literature, only a few isolated documented cases can be found.

We present the case of a 22-year-old woman who was admitted to our institution for a study of periodic fever syndrome. Her history shows a mitral valve prolapse. During the physical examination, a new intense murmur from mitral failure was detected and other peripheral signs consistent with infectious endocarditis (Roth spots, Janeway lesions, Osler's nodes, embolism in the left upper limb). Laboratory analysis presented leukocytosis (90% neutrophils, of immature form) and increased erythrocyte sedimentation. Haemocultures were 3/3 positive for *Staphylococcus aureus* non-resistant to methicillin. A transthoracic echocardiogram was also carried out, in which there was evidence of vegetation on the posterior mitral valve. The transoesophageal echocardiogram showed the mitral valve with a myxomatous appearance in which, on the atrial wall of the base of the posterior valve, a multilobed image occupying a large portion of the left atrium was observed. The patient underwent mitral valve replacement with a mechanical prosthesis (the decision was based on the size of vegetation and multiple embolic events), and she completed her antibiotic treatment for infectious endocarditis, progressing without complications. Fifty days after surgical procedure, she presented with peripheral paresthesia-paresis in the left upper limb (predominantly radial, confirmed in the electromyogram); in the clinical exam, a small axillary pulsatile mass was detected. An arterial echo-Doppler was requested, and then an angiography, which showed evidence of a large fusiform aneurysm of the left axillary artery (Figure 1). First, the aneurysm was attempted for repair by inserting an endoprosthesis, but the procedure was not successful. Therefore, conventional surgical treatment was decided, with exeresis of the aneurysm, brachial plexus liberation and axillo-humeral bypass with vein (Figure 2). The patient was discharged

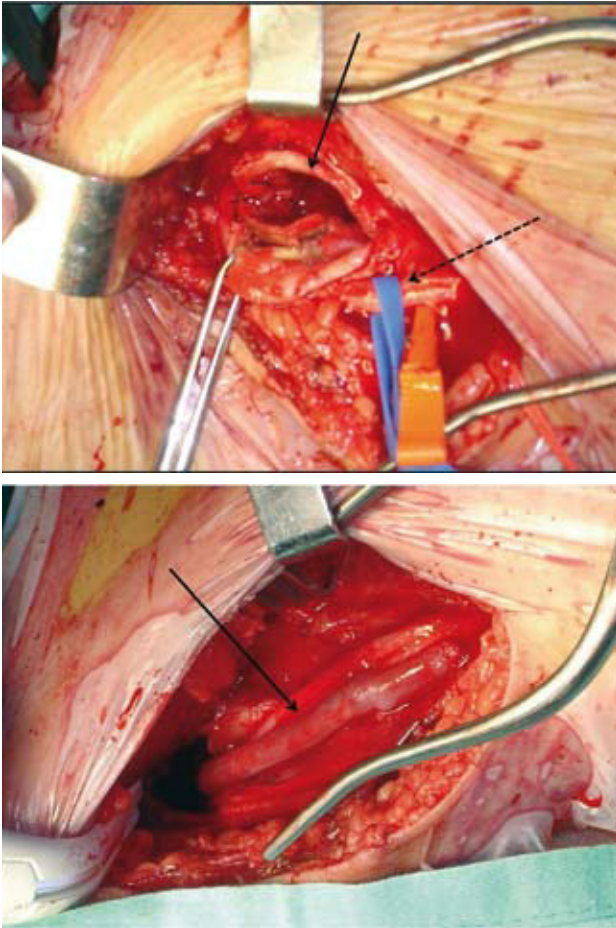


**Figure 1.** Peripheral angiography of the left subclavian artery which shows the aneurysm of the axillary artery.

4 days after surgery and after 1 year of follow-up, did not present complications.

Mycotic aetiology was based on the patient's symptomatic profile, absence of arterial traumatism (including iatrogenic), subsequent anatomopathologic study with degenerative changes and polymorphonuclear leukocytic infiltrate from the intima to the adventitia.

In a bibliographic revision, we found that the physiopathology of mycotic aneurysms includes distal embolism, a pre-existing infection in an arterial lesion, or stent, traumatism of the arterial wall and infection of a contiguous spot.<sup>1</sup> Regarding isolated germs, when the aneurysm is associated with infectious endocarditis, we found *Staphylococcus aureus* and *Staphylococcus epidermitis*, *Streptococcus viridans* and *Staphylococcus faecalis*, *Pneumococcus* and *Haemophilus*. Of these, the most frequently isolated is *Staphylococcus*.<sup>1,2</sup> Other registered germs are *Salmonella*, *Klebsiella*, and *Escherichia coli*. With respect to clinical manifestation, it may vary from asymptomatic—which is detected by pulsatile mass—to serious neurovascular condition due to compression of the brachial plexus or distal embolic events. Spontaneous rupture tends to be a serious complication.<sup>3</sup> In the complementary studies, increased leukocytosis and erythrocyte sedimentation are the most important findings. Haemocultures are positive in 50%-70% of patients. Definitive diagnosis of aneurysms can be made through arterial



**Figure 2.** Intraoperative images. A: The aneurysm of the open axillary artery is shown (continuous arrow) and its relationship with part of the brachial plexus (dotted arrow). B: Axillo-humeral venous Bypass connected in the surgery

echo-Doppler, computerized tomography, magnetic resonance, or angiography. Angiography is an essential tool for planning treatment.<sup>2</sup> Therapeutic procedure includes antibiotic treatment for infectious endocarditis, according to individual case, and exeresis of the aneurysm with rebuilding of flow with a bypass. As a minimally invasive alternative, successful cases of repair with endovascular prosthesis with fewer incidences of lesions to structures next to the aneurysm compared to surgery, have been described.<sup>2,4</sup>

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#### REFERENCES

1. Jhirad R, Kalman P. Mycotic axillary artery aneurysm. *J Vasc Surg.* 1998;28:708-9.

2. Koseoglu K, Cildag S, Sen S, Boga M, Parildar M. Endovascular treatment of mycotic subclavian artery aneurysm using stentgraft. *EJVES.* 2006;11:97-101.
3. Gupta S, Lee D, Goldstein R, Villani R. Axillary artery aneurysm. *J Emerg Med.* 2006;28:215-6.
4. Gray R, Stone W, Fowl R, Cherry K, Bower T. Management of true aneurysms distal to the axillary artery. *J Vasc Surg.* 1998;28:606-10.