

## Infectious Endocarditis Complicated by Embolic Accident Type Acute Ischemia of the Right Lower Limb: A Case Report

Lakehal Redha\*, Bendjaballah Soumaya, Aziza Baya and Bouzid Abdelmalek

Department of Heart Surgery, Faculty of Medicine, Dr Dajghri Mokhatr Constantine, Algeria

\*Corresponding Author: Lakehal Redha, Department of Heart Surgery, Faculty of Medicine, Dr Dajghri Mokhatr Constantine, Algeria.

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### Abstract

**Introduction:** Infective endocarditis is a serious pathology. They are an infective attack of the endocardic responsible for cardiac failure and in particular cerebral embolisms. The goal of this work is to show a case of mitral endocarditis with ischemia of the lower extremity secondary to accident embolic.

**Case Report:** We report the observation of a young woman 18 year old presented in our department an emergency for acute ischemia of the right leg with thrombus of the common femoral artery in echodoppler of members having to profit from a gesture of fogartisation of the member concerned whose etiologic exploration revealed that it was about a mitral endocarditis with presence of mitral vegetation. She was operating in emergency under cardiopulmonary bypass having to profit from mitral reparation after arterial removal of obstructions from the lower extremity.

**Results:** The postoperative course was simple.

**Conclusion:** The cardiac indication of surgical operation, on the one hand, the moment of this intervention, on the other hand, is difficult decisions. These decisions require a narrow monitoring of the patient, daily and regular private clinic by the examinations such as the CT and the transthoracic or transoesophagienne echocardiography. These decisions require also a close collaboration between the doctor, the surgeon and the microbiologist.

**Keywords:** Infective Endocarditis; Embolism Accident; Acute Ischemia of Leg; Cardiopulmonary Bypass

### Introduction

Infectious endocarditis is a serious pathology. It is an infectious attack of the endocardium responsible for heart failure and embolism. Embolic complications of infective endocarditis are serious and life threatening. Among these embolic complications, limb ischemia and cerebrovascular accidents. Their prevalence varies between 10 and 65% depending on the studies and the imaging technique used. Their spectrum is wide. The echocardiographic finding of vegetation larger than 15 mm, mobile, whose size varies during follow-up or *Staphylococcus aureus*, should raise fears of an increased embolic risk. The purpose of this work is to show a case of mitral endocarditis with mobile vegetations complicated by embolic accident type ischemia of the right lower limb.

## Observation

We report the case of an 18-year-old young woman hospitalized in a pediatric ward for cooling of mitral endocarditis evacuated urgently to our establishment for acute ischemia of the right lower limb at Rutherford stage IIa on thrombus of the common femoral artery in Doppler echo of the limbs evolving for 10 hours having benefited from an emergency fogartization gesture of the limb concerned whose etiological exploration revealed that it was a mitral endocarditis with the presence of vegetation mitral which gave infectious emboli at the level of the right lower limb responsible for ischemia of the latter. This patient was operated in emergency under cardiopulmonary bypass (CPB) after the fogartisation of the lower limb or she benefited from a mitral plasty.

On physical examination, she was afebrile with the presence of a 5/6 apical systolic murmur with some crackling rales at the lung bases and presence of dental caries.

Chest X-ray showed a cardiothoracic index at 0.58 with bilateral flaky opacities.

ECG showed sinus tachycardia.

Echocardiography showed massive mitral insufficiency grade III to IV by rupture of cords with image of mobile vegetation 6.8 mm in diameter on the auricular side of the mitral valve (Figure 1), LV slightly dilated at 55/34 mm, RV at 22 mm, LA at 38 mm, EF at 52% and SAPP at 32 mm HG.

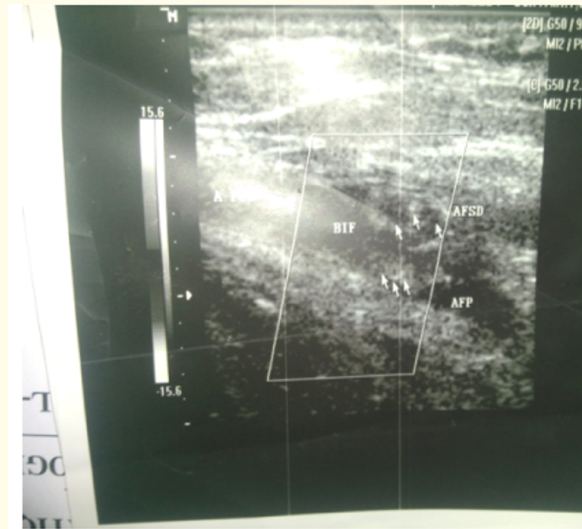


**Figure 1:** Echocardiographic image of mitral vegetation.

Transesophageal echocardiography was not done given the urgency of the intervention.

Doppler ultrasound of the lower limbs showed complete thrombosis of the right femoral bifurcation (Figure 2).

CT angiography of the lower limbs showed total thrombosis of the distal end of the common femoral artery extending to the deep femoral artery (Figure 3) and especially on the superficial femoral artery over approximately 05 mm, re-opacified satisfactorily downstream.



**Figure 2:** Doppler image of the right lower limb showed complete thrombosis of the right common femoral artery.



**Figure 3:** AngioCT image of the limbs showed total thrombosis of the distal end of the common femoral artery.

Blood cultures were positive for hemolytic B *Streptococcus*.

The renal assessment was undisturbed.

Cerebral angio-MRI showed a small left ischemic insular lacunar focus 06 mm in diameter.

This allowed us to conclude to an infective endocarditis with mitral localization, with cerebral embolic complications and the right lower limb.

The patient was already on dual anti-streptococcal antibiotic therapy in her original department.

The patient was operated on urgently for the ischemia of the right lower limb and then for her massive mitral leak.

The approach was a vertical median sternotomy. The patient was operated under CPB established between the aorta and vena cava.

Intraoperative exploration showed vegetations at the level of the anterior mitral valve with the presence of infected tissue at the level of the small mitral valve and the large mitral valve with elongation of the primary cord of the large mitral valve of segment A2.

The intervention consisted after cleaning with Betadine in resection of the P2 zone of the small mitral valve carrying their cords, which were transposed on the prolapsed zone of the large mitral valve (A2).

Reconstruction of the posterior mitral valve by P1-P3 edge-to-edge suture with plication of the opposite ring associated with a prosthetic annuloplasty with solid ring No 28 with satisfactory water test. The excised vegetation and valve tissue were sent for bacteriological study. The duration of CPB was 142 mm of aortic clamping was 90 mm and of circulatory support was 42 mm. The postoperative follow-up was simple. The length of stay in the intensive care unit was 48 hours. The intubation time was 6 hours. The follow-up echocardiography performed on first day postoperative showed perfect mitral plasty. The postoperative length of stay was 30 days in order to complete the course of antibiotic therapy.

The patient was discharged on the 30<sup>th</sup> postoperative day after continuing her antibiotic therapy with perfect mitral plasty on follow-up echocardiography.

### Discussion

Embolic complications of infective endocarditis are serious and life-threatening [1-3]. Cerebral complications are the most common [4]. Their prevalence varies between 10 and 65% depending on the studies and the imaging technique used. Thus, in a cerebral computed tomography (CT) study, Thuny, *et al.* [5-8] reported 22% of embolic neurological events of which 4% were silent. Vegetation embolized in two territories: cerebral manifested by a left insular lacunar ischemic focus 06 mm in diameter on cerebral MRI without neurological sequelae and in the right lower limb responsible for ischemia of the right lower limb.

The patient underwent emergency surgery first for ischemia of the limb and then for her mitral leak in order to avoid overextended ischemia of the limb; to avoid other embolic accidents in other territories and to avoid acute pulmonary oedema. The arterial clearing of the limb concerned was done by Fogarty probe.

The intraoperative expertise of the mitral valve damage preferred repair over valve replacement since the valve can be preserved and given the young nature of the patient.

We emphasize the interest of continuing anti-streptococcal antibiotic therapy for 30 days postoperatively associated with dental care [7]. Interest in finding and eradicating the front door that was dental for our patient. Several authors have attempted to define the predictive factors of embolic complications of infective endocarditis. Thus, in a study, Thuny, *et al.* [8] showed that the size of the vegetation was an embolic risk factor.

Indeed, the size of the vegetation was on average greater (15.5 mm versus 9 mm) in the group of patients with an embolic event compared to the group without complications. Similarly, 26 of the 28 emboli occurred on vegetations larger than 10 mm. The mobile nature also appeared as a risk factor for cerebral embolism since 19 of the 28 emboli were considered very mobile by the echocardiographers. However, these data remained at the limit of significance. Moreover, they did not find any difference in the incidence of embolic accidents according to the location of the vegetation (anterior mitral valve versus posterior mitral valve; aortic valve versus mitral valve).

The nature of the germ also seems to be another predictive factor for embolic complications, especially in the case of *Staphylococcal aureus* endocarditis [5], as is the case with our patient.

Overall, the review of the literature reveals as predictive factors of embolic events: large vegetation (> 15 mm), mobile vegetation (as is the case with our patient), vegetation whose size increases with during the follow-up and the secondary vegetation to an infection by a *Staphylococcus aureus*.

### Conclusion

The indication for cardiac surgery, on the one hand, and the timing of this intervention, on the other hand, are difficult decisions [5]. Early surgery is indicated to treat large vegetations (> 15 mm), pedunculated, mobile, or those whose size changes during ultrasound follow-up. These decisions require close monitoring of the patient, daily and regular clinical examinations such as computed tomography and transthoracic and transesophageal echocardiography. These decisions also require close collaboration between the cardiologist, the surgeon and the microbiologist.

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