

**INFECTIOUS ENDOCARDITIS COMPLICATED BY A DOUBLE MITRO AORTIC PERFORATION, VENTRICULAR SEPTAL DEFECT AND ISCHEMIC STROKE****Dr. Z. El Arbaoui\*<sup>1</sup>, Dr. A. Qat<sup>1</sup>, J. Zarzur<sup>1</sup>, N. Doghmi<sup>1</sup>, L. Oukerraj<sup>1</sup>, I. Fellat<sup>1</sup> and M. Cherti<sup>1</sup>**

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Article Received on 15/07/2019

Article Revised on 05/08/2019

Article Accepted on 26/08/2019

**INTRODUCTION**

Infectious endocarditis (IE) corresponds to a microbial adherence (often bacterial) to an injured valvular endocardium (IE on a native valve), less frequently to a parietal endocardium, or even to an intracardiac prosthesis (Prosthetic valve endocarditis PVE). Thus the colonisation and multiplication of the microbial agent result in infected vegetations with destructive lesions. Infective endocarditis is a serious disease. Its complications are serious, both local and systemic, and are associated with high morbidity and mortality rates.

**OBSERVATION**

A 43 year old male patient with a history of smoking and drinking consulted for dyspnea and chills.

Clinical exam revealed tachycardia and polypnea. Cardiac auscultation revealed pansystolic murmur of mitral regurgitation (MR) and clinical signs of right heart failure with crackles found on pulmonary auscultation.

ECG showed atrial fibrillation at 120 bpm.

Chest X Ray revealed alveolar- interstitial syndrome with bilateral perihilar infiltrates.

Biology showed an elevated CRP up to 100 mg/l, Hyperleukocytosis with 15000/ ml with a predominance of neutrophils. Blood culture and cyto-bacteriological exam of urines were negative.

Transthoracic echocardiography results were:

- Perforation of the anterior leaflet (severe MR) with two mobile elements that surround the perforation.
- Perforation of the posterior aortic valve cusp.
- Perimembraneous septal defect with a shunt.

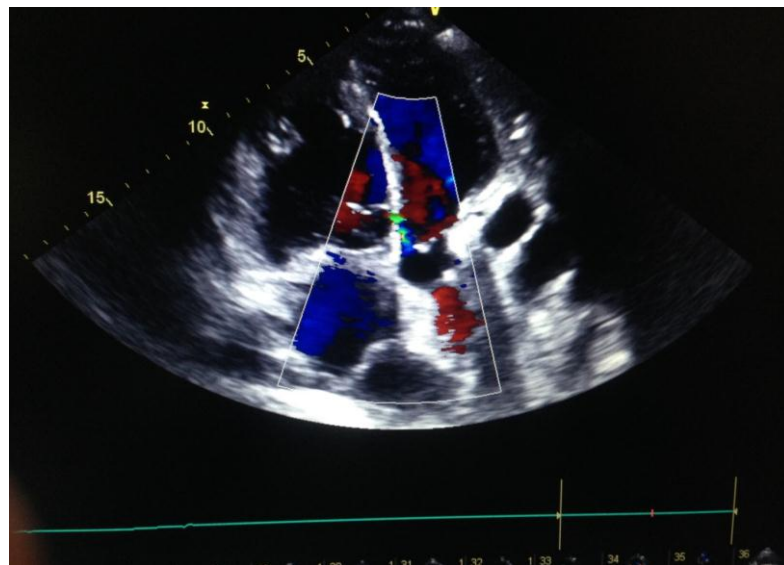
Cerebral scan as part of the imaging investigations done in infective endocarditis revealed a sub-acute stroke of the right frontal lobe.



Echocardiography image revealed a perforation of the large mitral valve.



Echocardiography image revealed a double mitroaortic perforation.



Echocardiography image revealed a shunt at the level of the membranous septum.

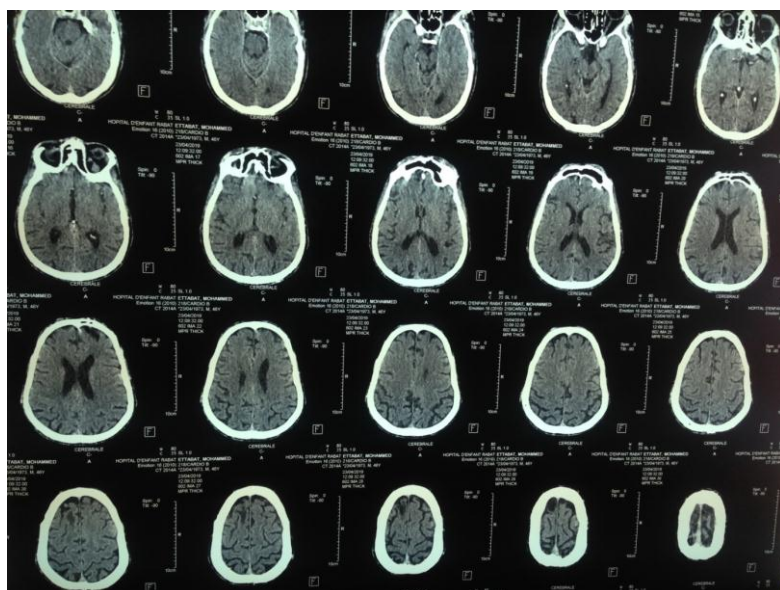


Image of a cerebral scan revealed a sub-acute stroke of the right frontal lobe.

Thus the diagnosis of infective endocarditis was accepted and antibiotic therapy was started.

Clinical evolution was favorable with regression of congestive signs and inflammatory syndrome.

The patient was later referred for cardiac surgery for double valve replacement (mitral and aortic valves).

## DISCUSSION

Infective Endocarditis (IE) is a serious disease, characterized by considerable morbidity and mortality due to its complications.<sup>[1]</sup> Despite all progress made in its management, the number of patients who had one complication or more or who needed surgical treatment has not changed throughout the years.<sup>[2]</sup>

In many European studies, ischemic stroke accounts for 20 to 60% of neurologic complications of IE, especially in the territory of the middle cerebral artery.<sup>[3]</sup> Incidence of embolic events is unknown, with high estimates ranging from 10 to 50%.<sup>[4]</sup> Moreover, cerebral emboli can sometimes be inaugural, becoming a worse prognosis with a mortality risk of 21 to 81%.<sup>[4,5]</sup>

Coronary emboli also have a poor prognosis but remain exceptional. Splenic, renal emboli as well as some cerebral emboli can be totally asymptomatic and thus unexpectedly discovered through imaging investigations of IE.<sup>[6]</sup>

However, renal infarction should not be taken lightly, because of the risk of acute renal failure.

Moreover, perforations of the heart valves are fearsome and may lead to death if not managed surgically. Their frequency remains poorly defined, and diagnosis is made by transthoracic and transoesophageal echocardiography (which was the case for our patient). 3D echocardiography allows a better visualization of the perforation.<sup>[7]</sup>

Infected (Mycotic) aneurysm complicates 2.5 to 10% of cases of IE, and it can develop in different arteries: aorta, cerebral, visceral and peripheral arteries.<sup>[1,8]</sup> Their risk of rupture is significant (between 38 and 50%) with a high mortality rate (between 40 and 60%).<sup>[9]</sup> CT angiography is the most useful imaging technique for diagnosing infectious aortic and cerebral aneurysms. It's also easily available than MRA (magnetic resonance angiography).<sup>[8,9]</sup>

Multi-complicated endocarditis has a poor prognosis, with a fairly high mortality rate due to septic and hemodynamic repercussions. In addition to effective antibiotic therapy, surgery is often required in the shortest amount of time, in order not to endanger vital prognosis.

## CONCLUSION

Infective Endocarditis remains a very serious disease. It requires urgent diagnosis through a rapid assessment of the patient's condition, using microbiology, echocardiography and other imaging techniques. Initial assessment helps estimate various risks of severe complications, particularly embolic, as well as vital prognosis, thus leading to effective therapeutic management. Indeed, it is thanks to empiric antibiotherapy management at first, then adapted after identification of the micro-organism, and also surgery if it's necessary, that we can prevent potential complications (especially embolic) that may endanger vital prognosis.

## Competing interests

The authors have declared that no competing interest exists.

## Ethical Approval

Ethics Committee of the cardiology department of the university hospital of Rabat, Mohammed 5 University, Rabat, Morocco.

## Author's contributions

MY drafted the manuscript and all authors read and approved the final manuscript.

## ACKNOWLEDGEMENTS

We thank cardiovascular surgery department and cardiology B department of university hospital of Rabat who provided care and support for this patient.

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