

Complicated Infectious Endocarditis on a Normal Valve, in a Severe Head Trauma Patient. Case Report

Larbi Aberouch*, Myriem Doubi Kadmiri, Youssef Garda, Salim Chajai, Yassine Haimeur, Ali Kettani and Mamoun Faroudy

Emergency Surgical Critical Care Department, Ibn Sina University Hospital, Rabat, Morocco

***Corresponding Author:** Larbi Aberouch, Emergency Surgical Critical Care Department, Ibn Sina University Hospital, Rabat, Morocco.

Received: August 01, 2022; **Published:** August 09, 2022

Abstract

Infectious endocarditis (IE) is a rare and singular pathology. Its diagnosis remains difficult and a multi-disciplinary approach is required for adequate management. It remains a serious condition whose mortality rate of 30 to 40%.

There are well codified diagnostic criteria defining IE. These criteria, called Duke criteria, are based on a set of clinical, ultrasound and microbiological arguments.

Complications are common in IE. In fact, the majority of patients develop it in the course of the disease. Among them, perivalvular abscess, found in 30 - 40% of autopsies.

The management of IE is based on the eradication of pathogens by bactericidal antibiotic therapy. Additional surgery is often necessary.

Recommendations for IE prophylaxis have been revised over the past five years. The latest French, European and American recommendations insist more on the importance of maintaining good hygiene, especially oral hygiene, than on antibiotic prophylaxis.

Keywords: *Infectious Endocarditis (IE); Severe Head Trauma*

Introduction

Infectious endocarditis (IE), described by William Osler at the end of the 19th century, is a rare and singular pathology. Indeed, its diagnosis remains difficult and a multi-disciplinary approach is required for adequate management [1].

Endocarditis remains a serious condition whose mortality rate of 30 to 40% has remained practically constant over the past decades [2].

We report the case of a patient admitted to intensive care unit for treatment of a serious head trauma complicated by infectious endocarditis causing his death.

Observation

We report the case of Mr J.A, 32 years old, with no particular history, admitted to the care unit for severe head trauma, because of a public road accident.

The initial clinical examination found a glasgow score of 7, with no deficit, or sign of convulsions. The body CT scan found a right extra dural hematoma of 12 mm with nose fracture.

The initial management consisted of administration of norepinephrine for a target MAP of 95 mmHg. Taking a right radial arterial line, a nasogastric tube and a bladder catheterization.

The patient was operated one hour after his admission and he had an evacuation of his hematoma.

After his surgery the patient had a deep sedation with a RAMSAY objective of 6, anti-epileptic prevention by phenobarbital and neurological monitoring by clinical examination and repeated transcranial doppler with prevention of ACSOS.

During his hospitalizing the patient had a pneumonia acquired by mechanical ventilation with a *Klebsiella pneumoniae*, requiring the use of sedation and antibiotic therapy with ceftazidime and amikacin.

The sedation was stopped 3 days later and was extubated few days after.

After few days, the patient installed a state of shock, namely hemodynamic instability with supraventricular tachycardia on the ECG (Figure 1) with hyperthermia 41 and disturbances of consciousness on the twenty-sixth day of his hospitalization, with a with high inflammatory markers. We immediately took a femoral venous line and introduced norepinephrine with volume management and antibiotic therapy based on Colimycin, imipenem, vancomycin and amikacin based on the results of the antibiogram showing *Acinetobacter baumannii* + MRSA.

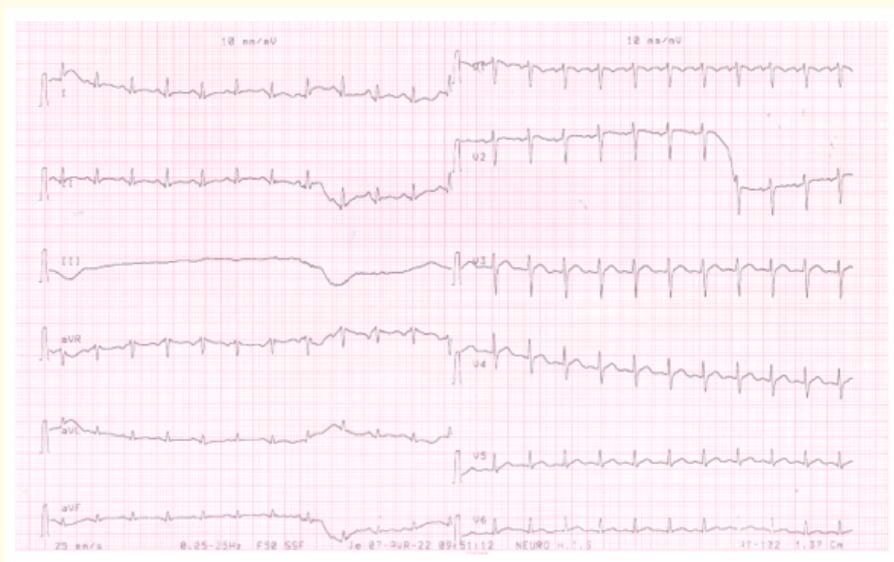


Figure 1: ECG realized per haemodynamic instability.

The transthoracic ultrasound (Figure 2-5) revealed the presence of a circumferential pericardial effusion of 12 mm in diameter, as well as a rounded hyperechoic formation of intra ventricular tissue appearance right attached to the septum with probably vegetations on the tricuspid valve

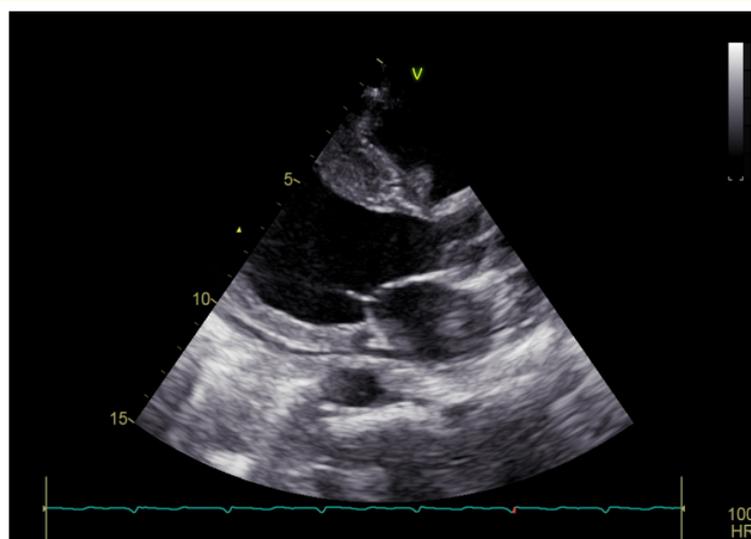


Figure 2: Long axis parasternal section.

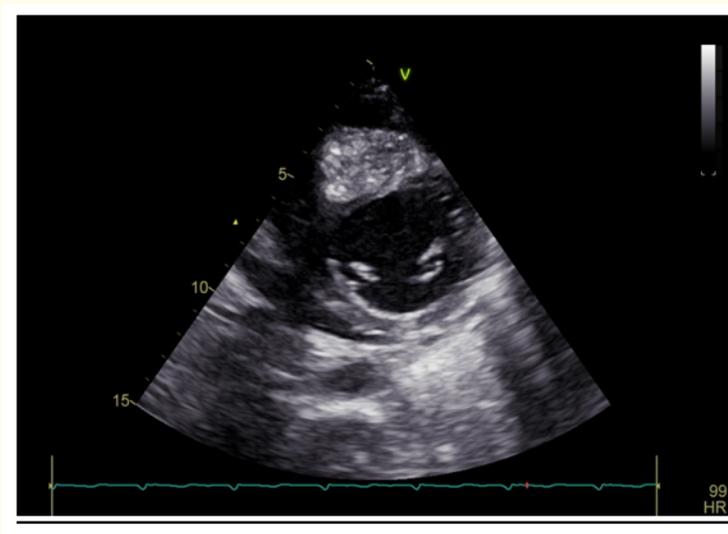


Figure 3: Minor axis parasternal slice.

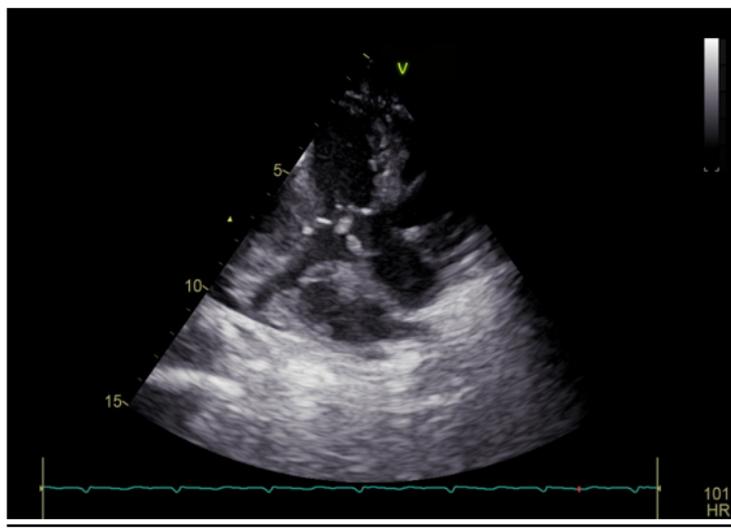


Figure 4: Vegetations of the tricuspid valve.

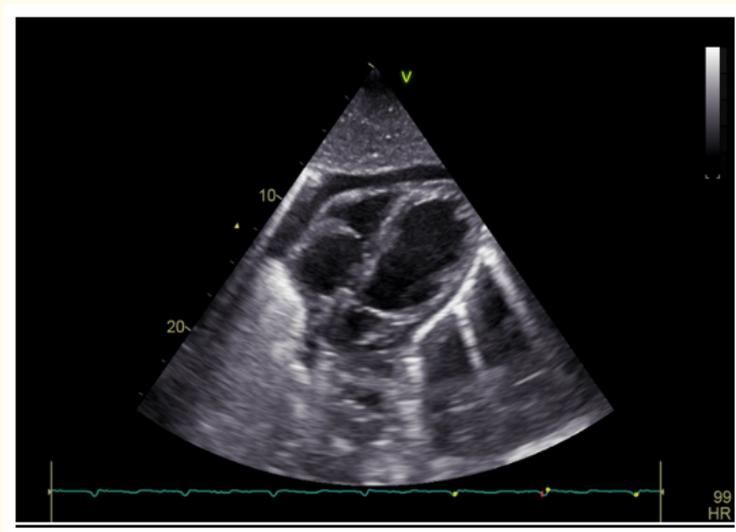


Figure 5: Pericardial effusion - subxiphoid section.

No cardiac MRI was realized because the evolution was fatal and fast, leading to the death of the patient.

Discussion

Infectious endocarditis (IE), described by William Osler at the end of the 19th century, is a rare and singular pathology. Indeed, its diagnosis remains difficult and a multi-disciplinary approach is required for adequate management [1].

In developed countries, the overall incidence of infectious endocarditis is between 2 and 6 per 100,000 human, representing 0.16 to 5.4 cases per 1,000 hospitalizations.

Despite the advent of antibiotics, endocarditis remains a serious condition whose mortality rate of 30 to 40% has remained practically constant over the past decades [2].

There are well codified diagnostic criteria defining IE. These criteria, called Duke criteria, are based on a set of clinical, ultrasound and microbiological arguments. They were modified in 2000 to adapt to epidemiological changes in the disease and to new diagnostic attitudes.

The two diagnostic pillars of IE are the presence of a cardiac lesion linked to IE and positive blood cultures for the incriminated germs. However, about 10% are “negative” and 25 - 30% of cases occur on a healthy endocardium [3,4].

Echocardiography is essential for the diagnosis and follow-up of patients. The valuable information that this examination provides is the identification, characterization and localization of adenoids, the evaluation of valvular dysfunction and hemodynamic disorders, as well as the detection of complications and predisposing factors. Both types of ultrasound, transthoracic (ETT) and transesophageal (TEO) are useful. However, if their specificities are comparable (95% for ETT vs 96% for TEE), the sensitivity of TEE is clearly superior (92 vs 62%), both for the diagnosis and for the detection of complications [5].

Other imaging techniques, such as computed tomography or nuclear magnetic resonance, are currently mainly useful for remote diagnosis and evaluation of complications [6].

Complications are common in IE. In fact, the majority of patients develop it in the course of the disease. The best test to detect them is the TO ultra sound. Its sensitivity, although less than 100%, is very much higher than that of TT ultrasound (87 vs 28%).

Of course, the ECG as well as the biological and clinical data provide valuable clues to which cardiac complications are the most frequent (30 to 50%). Among them, perivalvular abscess (this is probably the case for our patient) is found in 30 - 40% of autopsies.

Arguments to suspect this complication are: appearance of a conduction disorder, persistence of fever despite targeted antibiotic therapy, aortic localization or IE on intravenous injection of drugs. On the other hand, the size of the vegetation does not influence this risk. Since the heart tissues are subjected to high pressures in systole, the abscessed wall can give way and form an intracardiac fistula [7].

The management of IE is based on the eradication of pathogens by bactericidal antibiotic therapy. Additional surgery is often necessary. In addition, the search for and the elimination of infectious entry points according to the micro-organism responsible constitutes a part of the care that should not be neglected.

Optimal antibiotic therapy must take into account the characteristics of the isolated germ and those of the patient. It is administered parenterally for a minimum duration ranging from 2 to 6 weeks. There is no consensus validating the interest of an oral relay.

In almost half of the cases, additional surgical treatment is necessary. Three major indications lead to an intervention: refractory heart failure, non-control of the infection despite appropriate antibiotic therapy and prevention of embolic events [4-8].

Recommendations for IE prophylaxis have been revised over the past five years. The latest French, European and American recommendations insist more on the importance of maintaining good hygiene, especially oral hygiene, than on antibiotic prophylaxis. In patients at high risk of IE, antibiotic prophylaxis is recommended during invasive dental care. As far as other invasive procedures are concerned, no prophylaxis is routinely recommended anymore [4].

Conclusion

Despite progress in the diagnosis and management of infective endocarditis and its complications, this pathology remains burdened with a heavy mortality. It must therefore be detected as early as possible.

The clinic, biology and echocardiography make it possible to make the diagnosis. Treatment consists of targeted antibiotic therapy and in nearly half of cases, supplemented by surgery.

Bibliography

1. Li JS., *et al.* "Proposed modifications to the Duke criteria for the diagnosis of infective endocarditis". *Clinical Infectious Diseases* 30 (2000): 633-638.
2. Hogevik H., *et al.* "Epidemiologic aspects of infective endocarditis in an urban population. A 5-year prospective study". *Medicine* 74 (1995): 324-339.
3. Sexton DJ. "Epidemiology, risk factor and microbiology of infective endocarditis". Up to Date (2010).
4. Habib G., *et al.* "Guidelines on the prevention, diagnosis and treatment of infective endocarditis. The Task Force on the Prevention, Diagnosis, and Treatment of infective endocarditis of the ESC". *European Heart Journal* 30 (2009): 2369-2413.
5. Schiller NB and Ristow B. "Role of echocardiography in infective endocarditis". Up to Date (2008).
6. Vilacosta I and Gomez J. "Complementary role of MRI in infectious endocarditis". *Echocardiography* 12 (1995): 673-676.
7. Spelman D and Sexton DJ. "Complications and outcome of infective endocarditis". Up to Date (2010).
8. Delahaye F., *et al.* "Indications and optimal timing for surgery in infective endocarditis". *Heart* 90 (2004): 618-620.

Volume 6 Issue 8 August 2022

©All rights reserved by Larbi Aberouch., *et al.*