Eustachian Valve Endocarditis

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Eustachian valve endocarditis is a rare condition that affects mostly injectable drug users and patients using pacemakers or central venous catheter. We describe the case of a patient who underwent myocardial revascularization with extracorporeal circulation and who presented Eustachian valve endocarditis in the postoperative period, diagnosed by echocardiogram. The blood culture identified *Klebsiella pneumoniae*. He received appropriate antibiotic therapy and presented resolution of the condition within four weeks.

**Key words**
Endocarditis; Eustachian valve, heart valves.

**Introduction**
Eustachian valve endocarditis is a rare condition that affects mostly injectable drug users and patients using pacemakers or central venous catheter.

In fetal circulation, the Eustachian valve deviates blood from the inferior vena cava to the left atrium through the oval foramen.

The objective of this study is to report a case of Eustachian valve endocarditis in the postoperative period of cardiac surgery.

**Case Report**
A 45-year-old male patient, with diagnosis of coronary insufficiency, who underwent myocardial revascularization with anastomosis from the right internal thoracic artery to the right coronary artery, as well as from the left radial artery to the left marginal branch, with extracorporeal circulation and no intercurrent events. The invasive procedures during surgery were mean arterial pressure and placement of a central venous catheter. The patient was discharged from the intensive care unit on the first postoperative day in good clinical conditions, on prophylactic antibiotic therapy with cefuroxime 750 mg, three times a day.

On the third postoperative day, he presented abdominal bloating and on the next day, shivering and fever. Blood was withdrawn for culture, the central venous catheter was removed and the patient initiated on empirical antibiotic therapy with ciprofloxacin 400mg/day.

The results of blood culture and microbiological examination of the central venous line tip was *Klebsiella pneumoniae* resistant to ciprofloxacin and sensitive to imipenem, which was prescribed at 2g/day, with clinical and laboratory improvement.

A transthoracic Doppler echocardiogram was performed to investigate endocarditis and the following were observed: preserved right and left ventricular function, discreet mitral and tricuspid valve reflux and presence of a mobile mass on the right atrium.

Therefore, a transesophageal echocardiogram was required and showed a mobile and hyperechogenic mass on the right atrium, with random movement and measuring approximately 30 mm, attached to the Eustachian valve, suggesting an endocardial vegetation (Figure 1).

The infectious condition improved and the patient had no fever as of the 5th day on antibiotic, with simultaneous improvement in complete blood count.

On day 26 of specific therapy, a control transesophageal echocardiogram was performed and the Eustachian valve was observed with no vegetation signs. No other alterations were found in the echocardiogram. The patient was afebrile and the laboratory test results were not compatible with an infectious condition.

He was discharged after four-week antibiotic therapy, with no clinical or laboratory signs of infection (Figure 2).

**DISCUSSION**
Eustachian valve endocarditis is a rare condition and there...
Eustachian valve endocarditis resulted from a central venous catheter placed during a myocardial revascularization surgery. The agent more often isolated in this condition is *Staphylococcus aureus* [5,7,8], and there are no reports of *Klebsiella pneumoniae*, as observed in this patient.

The diagnosis of Eustachian valve endocarditis is commonly made by means of transesophageal echocardiogram, which enables better visualization of the region as compared with transthoracic echocardiogram. Nevertheless, the latter remains the first choice exam; the transesophageal echocardiogram should be carried out if any vegetation is suspected on a transthoracic echocardiogram, or in case of a clinical picture suggesting endocarditis [5,9,10].

The initial treatment for this condition is clinical, with appropriate antibiotic therapy, and surgery is indicated in non-responsive cases. Our patient presented remission of the infectious process after four-week treatment with specific antibiotics and required no surgical intervention.

**Conclusion**

Isolated Eustachian valve endocarditis is a condition that should be investigated in case of clinical suspicion in patients using central venous catheters.

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**References**