

Letter to the Editor

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Infective endocarditis in a patient with metastatic colorectal cancer

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Sir,

Infective endocarditis (IE) is defined as a microbial infection of the endocardial surface, either on native valve (NVE) or prosthetic valve (PVE). It is a rare disease (incidence about 3-10 per 100,000 people) but with greater associated challenges than ever, considering that affected patients are older and have many comorbidities. Despite the classical risk factor for developing an IE (the rheumatic heart disease), other comorbidities, such as degenerative valve disease, diabetes, intravenous drug use or cancer, have also been well defined [1]. There is a decreasing proportion of native NVE, and occurs mainly in patients with no previously known heart disease, in whom degenerative changes are thought to be the predisposing condition. The most frequently affected valve is the mitral valve, involving 50% of the cases, followed by the aortic valve (39%) and the tricuspid valve (19%).

We describe a case of a patient with a history of native prolapsed mitral valve and a concomitant neoplastic process, who presented an IE caused by *Streptococcus gordonii*. We take advantage of this atypical circumstance to make a review of the management of IE.

A 60-year-old man with a history of native prolapsed mitral valve and severe mitral regurgitation was diagnosed with advanced colorectal cancer (hepatic metastases) in January of 2014. Until November of 2015, he received different regimens of chemotherapy, with satisfactory tolerance and quality of life, alternating radiological response with pulmonary and hepatic disease progression.

With a stable and controlled tumoral disease, in February of 2016 he started presenting mild fever (38.5°C), with an initial positive blood culture for *S. gordonii*, but with a negative

transthoracic echocardiography. Nevertheless, because of the persistence of repeated positive blood cultures for the same pathogen, we conducted another transthoracic echocardiography, without evidence of vegetation but showing a major mitral regurgitation.

In April of 2016, he presented dermatological purpuric lesions in lower extremities, another positive blood culture for *S. gordonii*, and fever, so a transesophageal echocardiography was conducted, showing a filiform image compatible with IE (figure 1).

A CT scan taken for evaluating the extension of the tumoral disease showed hepatic and pulmonary progression, the patient remaining absolutely asymptomatic. In a multidisciplinary committee, we decided to conservatively treat the IE with ceftriaxone 4g daily for three months, starting in March 24th. Once we started, the culture bloods became negative, the dermatological lesions disappeared and the patient continued asymptomatic, even being able to make significant physical activity.

In a next echocardiographic control in July of 2016, the vegetation had disappeared (figure 2), the mitral regurgitation was moderate and the blood cultures remained negative.

Once the resolution of the IE was confirmed, in September of 2016 we started a chemotherapeutic retreatment, which the patient continues at the present moment.

The microbiology of an IE depends on whether it occurs on a native (NVE) or prosthetic (PVE) valve, and whether the disease is hospital or community acquired, being the *Staphylococcus aureus*, *Streptococcus* spp and *Enterococcus* spp responsible for >80% of all cases. The portal of entry of most pathogens is more often cutaneous than dental. In our case report, the portal of entry was not clarified. In numerous occasions, we tried to obtain blood cultures from the venous central catheter, without success; however, it never showed inflammatory or infectious signs, so we did not remove it.

Regarding the diagnosis of IE, it involves an integration of

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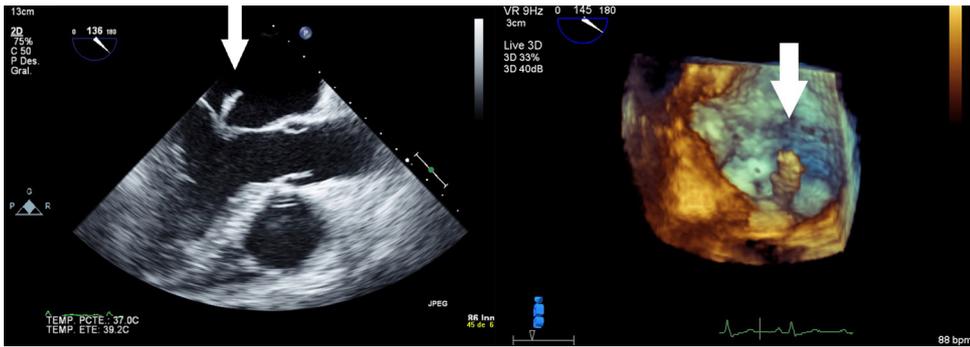


Figure 1 | Vegetation image (arrows) by transesophageal echocardiography bicommissural and 3-dimensional atrial.



Figure 2 | Transesophageal echocardiography without vegetation.

clinical, laboratory and echocardiographic data. The modified Duke clinical criteria [2] have been shown to be highly specific for ruling out IE in patients with acute fever or fever of unknown origin, being the positive blood culture the cornerstone of microbiological diagnosis and the echocardiography the cornerstone of imaging. Recent guidelines suggest that transesophageal echocardiography is the preferred initial diagnostic test for patients in whom IE is suspected on the basis of clinical criteria, with suspected complicated IE, and with suspected PVE [3]. In our patient, a definite diagnosis was achieved because of the echocardiographic image, the repetitive positive blood cultures for *Streptococcus gordonii*, the deterioration of the mitral regurgitation and the fever.

In terms of treatment of IE, it ranges from medical treatment to surgery. Long-term parenteral bactericidal antibiotics in high concentrations are the main treatment. Indications for and the timing of surgery are still a matter of debate. Decisions on surgical intervention are complex and depend on many clinical and prognostic factors that vary among patients, including infecting organism, vegetation

size, age, non-cardiac and cardiac comorbidities such as the presence of perivalvular infection, embolism or heart failure, as well as available surgical expertise. Therefore, decisions should be determined by a multidisciplinary team with expertise in cardiology, imaging, cardiothoracic surgery, infectious diseases, and, in this case, oncology.

Our patient never showed signs of significant cardiac or neurological events, but our main concern was the deterioration of his mitral valve regurgitation. The main decision was whether to operate early to limit the risk of severe cardiac insufficiency, or, considering the surgical mortality and the comorbidities of patient (presence of an active cancer), to start the management conservatively. Also, the life expectancy of our patient was taken into account. The metastatic colorectal cancer is almost always an incurable disease, but, at the same time, has changed drastically within the last years in terms of prognosis. Nowadays, the median overall survival (OS) for patients with mCRC being treated both in phase III trials and in large observational series is about 30 months (more than double that of 20 years ago), leading to what we could call a "chronic disease" [4]. Hence, why not consider the possibility of a surgery? Considering that our patient remained hemodynamically stable, that he responded quickly and well to the antibiotherapy and that suffered a slow progressive tumour disease, the course of action was undoubtedly right, as further demonstrated by the subsequent evolution.

Despite the prevention, the noticeable progress in diagnosis and aggressive treatments of IE, its management remains complex, not only because of the optimal therapeutic approach but also because of the patients' comorbidities. Therefore, coordinated and sustained action taken in multidisciplinary teams is necessary to achieve the better approach.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest

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