

Staphylococcus cohnii endocarditis in native valve

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Abstract

We present a first case of *Staphylococcus cohnii* endocarditis in an 80-year-old patient with a history of valve regurgitation. Endocarditis by this organism has not been reported previously. The patient declined treatment and died a few days later. When present, *S. cohnii* endocarditis has a poor prognosis as a result of associated comorbidities and the infection itself.

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but it is the cause of human disease in only 0.5% to 8%, as presented in different case series [2].

Here we present what is to our knowledge the first *Staphylococcus cohnii* endocarditis case reported in the literature.

Introduction

Coagulase-negative staphylococci (CoNS) are less virulent than *Staphylococcus aureus* as a result of the absence of free coagulase. More than 40 species of CoNS have been described and have been found colonizing skin and mucosa [1]. CoNS are not commonly responsible for infections; however, more recently they have been associated with implantable devices and in immunocompromised patients as an opportunistic organism [2]. In the general population, it can cause hospital-related infections [3,4]. There have been multiple reports of skin and bile duct infections, bacteraemia and even meningitis.

Staphylococcus cohnii belongs to the CoNS group. It is Gram positive, immobile, coagulase negative, catalase positive, oxidase negative and resistant to novobiocin [2,5]. It is classified into *S. cohnii* subspecies *cohnii* and *urealyticu* [3].

S. cohnii is found colonizing skin and mucosa. Nevertheless, there is little literature regarding its involvement in human infections. Cases of catheter-associated infection, meningitis, urinary infection and cholecystitis [3–5] have been reported,

Case report

An 80-year-old man, a merchant, from Bogotá, Colombia, presented with 10 days of dyspnoea at rest, fatigue and lower-extremity oedema. He denied fever or cough. He had a history of mitral and aortic regurgitation needing surgical intervention; however, he had declined surgery previously and had an advanced directive refusing certain therapies. He had undergone a dental procedure 5 days before admission. Clinical signs were the following: heart rate 102 bpm, oxygen saturation of 86% on ambient air, grade II jugular engorgement, mitral holosystolic murmur of intensity III/VI, rales in lung bases and lower limb oedema as signs of decompensated heart failure.

Laboratory investigations showed renal failure, leukocytosis and hyperkalaemia (leukocytes 25800 cels, neutrophils 23700 cels, creatinine 2.4 mg/dL, potassium 5.6 mEq/L). Transthoracic echocardiogram revealed a mobile mass attached to the anterior mitral leaflet base (Fig. 1), and all three blood cultures showed bacterial growth after 14 hours' incubation. *Staphylococcus cohnii* was the isolated organism, which was confirmed by matrix-assisted desorption ionization–time of flight mass spectrometry (MALDI-TOF MS). Duke criteria were met for

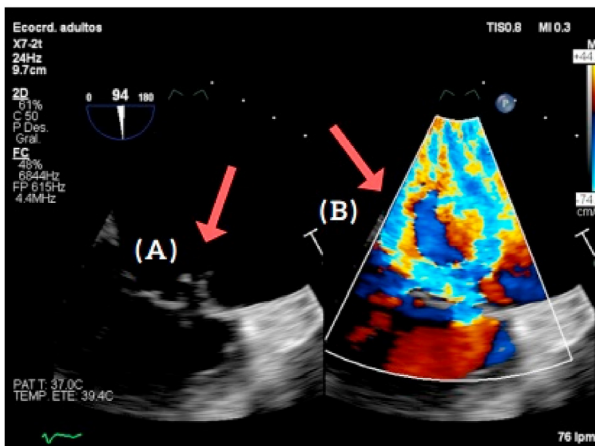


FIG. 1. Transesophageal echocardiogram. (A) Anterior mitral valve vegetation of 10 × 8 mm. (B) Colour Doppler image showing severe mitral regurgitation.

endocarditis by *Staphylococcus cohnii*. The methicillin resistance profile was determined by interpreting an antibiogram and by the MALDI-TOF MS results. Therapy with vancomycin and gentamicin was initiated. The patient progressed to septic shock, and vasopressor treatment were started. Considering the vegetation size and the worsening of valve insufficiency, surgical management was proposed again, but the patient's advance directive was respected, and surgery was not performed. Clinical worsening and progression to multiple organ failure occurred, followed by death on the seventh day after admission.

Discussion

In India, Singh *et al.* [6] carried out an epidemiology study in 2016, and Thirunavukkarasu and Rathish [7] performed one between 2008 and 2009 [7]. Results indicated that *Staphylococcus cohnii* was isolated in 4.3% to 5.08% of CoNS bacteraemia cases. An algorithm described by Beekmann *et al.* [8] helped identify clinically significant bacteraemia by CoNS by

using leukocytosis, hypotension and septic shock, as illustrated in our patient. CoNS endocarditis is unusual compared to the usual setting of a patient with prosthetic valve and *Staphylococcus epidermidis* bacteraemia or catheter-associated infection [1,2].

Staphylococcus cohnii is a rare cause of infection in humans, but when it occurs, it involves skin and bile duct and is a catheter-associated infection. More severe symptoms are due to patient-associated comorbidities and the infection itself. To our knowledge, our case is the first described in the literature of native valve endocarditis in an immunocompetent patient with *Staphylococcus cohnii*.

Conflict of interest

None declared.

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