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Scientific letters

Prosthetic valve with infective endocarditis caused by *Propionibacterium avidum*. A case report

Endocarditis infecciosa protésica causada por Propionibacterium avidum

Sir,

We report the case of an 85-year-old woman with a history of hypertension, diabetes mellitus and permanent pacemaker implantation, who underwent bioprosthetic aortic valve replacement (Sorin Crown PRT 19 mm) due to aortic stenosis. Eight months later the patient presented at the emergency room with fatigue, malaise and weight loss over a period of 8 weeks. She was febrile (38.3 °C) and presented clinical and radiologic features of heart failure. Laboratory test revealed anemia (Hb 8.2 g/dL), leukocytosis (14,800/mcL), and C reactive protein was 86 mg/L. Electrocardiogram showed a complete atrioventricular block with normal pacemaker stimulation. Two sets of blood cultures were obtained. The patient was admitted with a diagnosis of viral respiratory infection and congestive heart failure. Antibiotic therapy was not initiated. Twenty-four hours after admission she presented a ventricular tachycardia without pulse requiring electric cardioversion. A transthoracic echocardiogram showed a severe prosthetic aortic valve stenosis with calcified unstructured leaflets and thickened calcified mitral leaflets, without images of vegetations. For the next three days the patient remained afebrile but congestive heart failure worsened. On day 4 transesophageal echocardiogram (TEE) revealed a vegetation (4 mm) in the aortic prosthesis and a possible perivalvular abscess; after that an Infectious Disease specialist was consulted. Three further sets of blood cultures were obtained, empirical therapy was started with daptomycin, ampicillin and ceftriaxone, and surgery was recommended. On day 3, coryneform Gram-positive bacilli grew in anaerobic bottles of blood cultures collected at admission (after 65 h of culture). This result was initially regarded as a contamination and was not reported to clinicians till the next day when the microbiologist was informed about the infective endocarditis (IE) suspicion. These bacteria were initially identified as *Propionibacterium* spp., and subsequently as *P. avidum* by MALDI-TOF. On day 8 all three sets of blood cultures obtained before antibiotic therapy was initiated were growing coryneform Gram-positive bacilli in anaerobic bottles. So *Propionibacterium* spp. were considered the responsible for the IE and an antibiogram-guided de-escalation was made to penicillin G (24 million IU/24 h). The patient underwent surgery on day 11. Unfortunately the postoperative course was complicated by refractory shock and multi-organic failure, and the patient died 48 h after surgery.

Propionibacterium spp. are ubiquitous Gram-positive coccobacilli which are constituents of human skin microflora. Major species include *P. acnes*, *P. granulosum* and *P. avidum*. Traditionally considered to be species of low virulence, *P. acnes* and to a lesser extent *P. granulosum* have been implicated in serious infections, including IE.[1–5] *P. avidum* has been reported as an overlooked cause of breast abscesses after surgery, of septic arthritis after intraarticular treatment, and of abscesses in other locations after surgery or invasive procedures.[1,6] However, to the best of our knowledge this is the third case of IE due to *P. avidum* reported in the literature, after the ones reported by Vetromile[7] and Braun.[8]

The incidence of *Propionibacterium* spp. IE is reported to be 0.3–1.4 cases per year.[2] As in our case, *Propionibacterium* spp. is usually associated with a long history of minimal clinical signs of infection.[3] It involves prosthetic valves in 67% of cases and abscess formation occurs in 36% of cases, specially involving prosthetic cardiac devices.[3]

In *Propionibacterium* spp. IE the reported median growing time in blood cultures is 7 days.[3] Therefore, blood samples should be cultured for more than 7 days before a diagnosis of bacteremia can be rejected,[2,3,5] especially when IE is suspected, in order to permit the growth of fastidious microorganisms other than the HACEK group bacteria like *Propionibacterium* spp. We stress that only a minority of *Propionibacterium* spp. bacteremias are clinically significant.[9] The clinical context and the number of positive bottles are essential to an assessment of the real significance of *Propionibacterium* spp. bacteremias, but microbiologists should be alert to the possibility of IE.

Propionibacterium spp. are highly susceptible to a wide range of antibiotics, including beta-lactams, quinolones, clindamycin and rifampin, but not metronidazole. In absence of consensus on the management of *Propionibacterium* spp. IE, most physicians choose a 6-week course of a beta-lactam antibiotic, alone or in combination with aminoglycosides.[2,3] Surgery is needed in a high proportion of patients, mainly due to perivalvular extension and abscess formation.[3,10] Although *Propionibacterium* spp. have low virulence, the overall mortality rate in *Propionibacterium* spp. IE is relatively high (16–27%) due to the frequent valvular and perivalvular destruction.[2,3]

To conclude, this case emphasizes a number of important concepts. First, both clinicians and microbiologists should be aware of the possibility of *Propionibacterium* spp. (even other than *P. acnes*) as a possible etiology of IE, especially in view of its significant mortality. Second, blood samples should be cultured for prolonged periods of time in order to permit the identification of fastidious microorganisms like *Propionibacterium* spp. Third, permanent feedback between microbiologists and clinicians is essential to ensure that significant information is not missed.

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Conflict of interest

The authors declare no conflict of interest.

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Unusual clinical presentations of *Actinotignum* (*Actinobaculum*) *schaalii* infection

Presentaciones clínicas inusuales de la infección por Actinotignum *(*Actinobaculum*)* schaalii

Actinotignum (*Actinobaculum*) *schaalii* are considered commensal bacteria of the genital and urinary tract.[1] They have been transferred to a new genus, *Actinotignum*, along with *A. urinale* and *A. sanguinis*.[2]

They are frequently overlooked because of their slow growth and their difficult identification by conventional methods, and their prevalence is very likely underestimated. Newer identification methods, such as MALDI-TOF MS, have made it an emerging pathogen involved in UTIs, but also in other locations such as osteomyelitis, bacteremia and skin infections.[3] We describe three unusual clinical presentations of *A. schaalii* infections.

Case # 1

70-Years-old immunocompetent male, attending to the Emergency Room (ER) because of 48 h febricula with shaking chills, malaise and scrotal and perineal pain. Two years before, he suffered a perianal abscess, which evolved to a Fournier's gangrene with several sepsis episodes. The exploration showed a scrotal abscess which was drained. After 48 h incubation, grayish colonies growing on blood agar plates were identified as *A. schaalii* by MALDI-TOF MS (MicroFlex, Bruker Daltonik GmbH, Germany). Antibiotic susceptibility was tested by the disk diffusion method (Table 1). The patient received amoxicillin/clavulanic acid for 2 weeks, remaining asymptomatic thereafter.

Case # 2

43-Years-old male attending to the ER because of 1-month dysuria. Empirical treatment with ciprofloxacin led to an initial improvement with relapse within a few days. Azithromycin was then started, with no improvement. When the patient returned to the ER, he was afebrile, but he referred a purulent urethral discharge, hemospermia, hematuria and painful erection. Blood count and serum biochemistry were normal. Hematuria and pyuria, but not bacteriuria, were observed. Empirical treatment with cefixime was started, but one month later the patient had not improved. He continued with leucocyturia, so urine and urethral discharge samples were sent for culture, and empirical treatment with ciprofloxacin was started. The patient improved, and cultures were negative. Four months later the patient got back to the Urology office with hematuria and urethral discharge, but no specific pain. Prostate ultrasounds study showed prostatic parenchyma calcifications, suggesting chronic prostatitis. Urethral discharge culture was again performed, and this time *A. schaalii* was isolated and identified (MicroFlex, Bruker Daltonik GmbH, Germany). Disk diffusion susceptibility appears in Table 1. After two weeks with amoxicillin-clavulanate, urethral discharge disappeared, control urine cultures were negative, and the patient was asymptomatic.

Case # 3

70-Year-old woman, who attended to her primary care doctor because she had detected a 2 cm lump in her right breast areolar area. No skin or nipple retraction, galactorrhea, or axillary