CASE REPORT

Implantable cardioverter device infection due to *Brucella melitensis* in two patients

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Brucella; Endocarditis; Lead extraction

1. Introduction

*Brucella melitensis* has been reported in limited cases of rhythm device infection and has been described as being insidious in its progression. In this report, we emphasize the role of tissue and pocket-fluid extended cultures, especially in patients coming from brucella-endemic areas. While tissue cultures may confirm diagnosis in these patients, they typically have negative blood and swab cultures.

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system removal was achieved using a CVX-300 Excimer laser extraction system (Spectranetics, Colorado Springs, CO, USA) and Lead Locking Device (LLD) (Fig. 1). Extended culture from the device pocket fluid and tissues showed growth of *Brucella melitensis*. The patient began an extended antibiotic regimen and demonstrated excellent clinical and serological improvement. A contralateral device re-implantation was scheduled three months after the CRT-D System removal.

3. Case Two

A 52-year-old male with a long-standing history of diabetes underwent coronary arteries bypass graft and mitral valve repair in 2010. He received a single chamber ICD as a secondary prevention of sudden cardiac death in 2012. One year later, he was diagnosed as having Brucellosis and received appropriate treatment for eight weeks with an excellent response. Two months prior to his current presentation, he noticed changes in the skin color over the device site, which had gradually eroded resulting in device extrusion (Fig. 2). His inflammatory markers were high, but repeated blood cultures were negative, as was a swab from the device site. He underwent a complete system removal, which was achieved by simple traction using an LLD. Extended pocket tissue culture revealed growth of *Brucella melitensis*. He received an antibiotic combination regimen for Brucella including Co-trimazole, Doxycyclin and Gentamicin for an extended period. A contralateral ICD re-implantation was scheduled for three months post-removal.

4. Discussion

Despite the improvement in procedural technique and administration of antibiotic prophylaxis, device infections continued to occur. *Brucella melitensis* has only been reported in several cases of rhythm device infection and has been described as being insidious in its progression. It is possible that device infection might occur during the asymptomatic phase of the illness as a result of the initial bacteria micro phase; the bacteria colonize the device collagen capsule and react as a permanent focus of infection, even after the standard regimen of treatment. Optimal management of infected devices should include removal of the whole system and prolonged antimicrobial therapy to eliminate the pathogen from the body, especially in the presence of an unusual organism. In all previously reported cases of Brucella infection, device removal and leads extraction followed by extended antibiotic therapy were required for its cure. In this report, we emphasize the role of tissue and pocket-fluid extended cultures, especially in patients coming from a brucella-endemic area. In the past century, the introduction and widespread application of sternal aspiration for studying living bone marrow have given clinicians a simple and practical method for studying and diagnosing diseases, such as brucellosis. In our patients, repeated blood and swab cultures were negative during all phases of infection, but tissue cultures confirmed the diagnosis.

Disclosures

None.

References