

A Rare Case of Infective Endocarditis in an Immunocompetent Patient

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ABSTRACT

Infective endocarditis is a relatively rare disease, but with a significant impact. *Staphylococcus aureus*, *Coagulase-negative staphylococci* and *oral streptococci* are commonly causative organism. *Mycobacterium tuberculosis* or *non-tuberculous mycobacteria* are very rare etiology of infective endocarditis. Here, we report a case of tuberculosis of hematopoietic organs and tuberculous endocarditis in an immunocompetent patient. A 32-year-old man was hospitalized for a 15-day-history of persistent fever, asthenia, anorexia and diarrhea. His laboratory investigations showed elevated inflammatory markers and pancytopenia. All investigations, even sputum smear, were negative for acid-fast bacilli.

Thoracoabdominal computed tomography showed abdominal lymph nodes with a slight pleural and peritoneal effusion. Transthoracic echocardiography revealed a 25 mm mobile vegetation on the large mitral valve. Blood cultures were negative. The serological testing for *Coxiella burnetii*, *Bartonella quintana*, *Bartonella henselae*, *Brucella* species and *Legionella* species were negative, as well. Bone marrow biopsy showed tuberculosis of hematopoietic organs. The patients received antitubercular therapy for a 15-month-duration. The disease evolution was favourable. The echocardiography showed no vegetation after 70 days therapy. Tuberculous endocarditis should be bearded in mind, especially in endemic countries. An early diagnosis followed by the adequate antitubercular treatment might avoid serious complications and death.

Key words: Diagnosis; Immunocompetent; Infective endocarditis; Tuberculosis

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INTRODUCTION

Infective endocarditis is a relatively rare disease, but with a significant impact. It is characterized by increased morbidity and mortality^[1]. *Staphylococcus aureus* is now the most common causative organism. *Coagulase-negative staphylococci*, *oral streptococci*, *enterococci* are also common microorganism^[2]. *Mycobacterium tuberculosis* or *non-tuberculous mycobacteria* are very rare etiology of infective endocarditis^[3]. Only few cases of tuberculous endocarditis (TBE) were reported in the literature. The diagnosis was mainly confirmed after autopsy owing to the diagnosis difficulty^[4-6]. In fact, cardiac involvement of tuberculosis (TB) is unusual, accounting for 0.5% of extrapulmonary TB^[7]. It was especially reported with immunocompromised patients, in miliary TB or after valve replacement using an infected prosthetic valve^[4,5].

Here, we report a case of tuberculosis of hematopoietic organs and TBE in an immunocompetent patient.

CASE REPORT

A previously healthy 32-year-old man was hospitalized for a 15-day-history of persistent fever, asthenia, anorexia and diarrhea. He received symptomatic treatment, but no improvement was noted. He had no night sweats, nor intentional weight loss. He had a history of intravenous drug addiction and had been incarcerated for a while. Physical examination on admission revealed a body temperature of 39°C, an oral thrush and hepatosplenomegaly. Cardiac auscultation revealed a systolic murmur in the mitral area. Abnormal laboratory investigations included elevated inflammatory markers such as elevated erythrocyte sedimentation rate (70 mm/h) and C-reactive protein levels (52 mg/L), associated to a pancytopenia. Aspartate aminotransferase and alanine aminotransferase concentration were two times above the upper limit of the normal level associated to a cholestasis. Human immunodeficiency virus (HIV) serology was negative. All investigations, even sputum smear, were negative for acid-fast bacilli. Thoracoabdominal computed tomography showed abdominal lymph nodes with a slight pleural and peritoneal effusion. Transthoracic echocardiography revealed a 25 mm mobile vegetation on the mitral valve associated to mitral insufficiency (Figure 1). The diagnosis of infective endocarditis was confirmed, but with no identification of the microorganism. Blood cultures were negative. The serological testing for *Coxiella burnetii*, *Bartonella quintana*, *Bartonella henselae*, *Brucella* species and *Legionella* species were negative, as well.

The patient received empiric antibiotics including glucopeptide, imipenem and amikacine. A surgical removal of the vegetation was indicated, but, rejected because the patient was unstable. No improvement was noted with antibiotics. His temperature remained high and his blood tests showed a worsening pancytopenia. No clear diagnosis was made until a bone marrow biopsy was performed, which showed TB of hematopoietic organs. The polymerase chain reaction (PCR) test result was positive for *Mycobacterium tuberculosis*. The patient was treated with antitubercular quadritherapy for a 3-month-duration, followed by isoniazid-rifampicin bitherapy. The disease evolution was favourable. His fever, as well as his follow-up laboratory tests, resolved in 2 weeks with treatment. A repeat transthoracic echocardiography showed no vegetation after 70 days therapy. Our patient completed 15 months of antitubercular treatment.

DISCUSSION

Tuberculous endocarditis presented a diagnostic challenge. Not only due to its non-specific clinical presentation, but also, due to the low index of suspicion^[3]. In 1935, post-mortem diagnostic criteria for TBE were made by Baker, including microscopic evidence of TB, positive staining for tubercle bacilli and exclusion of other causes of endocardial lesions^[4,5]. The development of polymerase chain reaction, specific cultures and acid-fast staining were helpful for pre-mortem diagnosis, saving, therefore, lives.

Furthermore, TBE was mostly noted in immunocompromised patients such as those with HIV infection or patients treated with long-term glucocorticoid^[5]. However, the disease was reported with immunocompetent patients as well^[3,6], like the case of our patient. Researchers showed that TBE was usually associated with miliary TB^[4]. In fact, a rapid diagnosis can be easily provided when there is a proof of TB elsewhere in the body, since TBE is often a part of



Figure 1 Transthoracic echocardiography showing large sessile vegetation on the auricular side of the large mitral valve (Arrow).

disseminated TB^[3]. Otherwise, histopathological proof, requiring surgery, is not always possible. In our case, the clinical and biological context, the confirm diagnosis of TB of hematopoietic organs, the valvular vegetation found on echocardiography and the adequate response to antitubercular therapy confirmed our diagnosis.

Besides antitubercular therapy, a surgery might be indicated in case of hemodynamic instability, refractory arrhythmia, or a life-threatening impending embolism^[7]. The prognosis of TBE was severe. Cases reported in the literature were dead before even the diagnosis was made^[3]. Therefore, TBE should be bearded in mind in front of prolonged unexplained fever among both immunocompromised and immunocompetent patient. It should be included in the etiological assessment of endocarditis with negative blood cultures, especially in endemic countries. The diagnosis remains challenging despite the different means of investigations. An early diagnosis and treatment might improve the prognosis.

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