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Brucella Endocarditis in Prosthetic Valves

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SUMMARY

Introduction: Brucella endocarditis (BE) is a rare but severe and potentially lethal manifestation of brucellosis. Pre-existing valves lesions and prosthetic valves (PV) are favorable for BE. **Case report:** We represent the case of a 46-year-old man who was treated at the Clinic for Infectious Diseases, Clinical Center of Sarajevo University, as blood culture positive (*Brucella melitensis*) mitral and aortic PV endocarditis. He was treated with combined anti-brucella and cardiac therapy. Surgical intervention was postponed due to cardiac instability. Four months later he passed away. Surgery was not performed.

Key words: Brucella endocarditis, prosthetic valves.

1. INTRODUCTION

BE occurs in 0.5%-2% of all *brucella* cases, causing 80% of deaths (1). Its characteristic features, such as valve ulcers and destruction, myocardial abscess and aneurysm, besides verucca, make it different from other infective endocarditis (IE). The major cause of death in BE is congestive heart failure due to destruction of valve and paravalve structures (2). Since 1967, when the first case of valve replacement due to BE was reported (3), combination of medical and surgical therapy is considered as treatment of choice (4, 5).

2. CASE REPORT

We present here the case of a 46-old man, a stock-breeder from the Central Bosnia Canton who was treated for PV endocarditis due to *Brucella* during 2007. In 1998, he underwent an aortic and mitral mechanical valve replacement surgery due to juvenile rheumatic fever. He was doing well, being work-engaged until 2006, when he started to complain about night sweating, chills, exhaustion, dyspnea, palpitations and chest oppression. At that time he did not measure his body temperature. After more than one year of over repeated hospitalizations at the Department of Internal Medicine of Regional Hospital due to "symptoms of heart failure", he was referred to the Clinic for Infectious Diseases, Clinical Center of Sarajevo University. Upon confirmation of the disease, based on positive blood cultures (*B. melitensis*) taken during everyday subfebrile temperatures, formerly unrecognized, and on transthoracic echocardiography (TTE)

indicative of endocarditis, the patient was transferred to Clinic for Infectious Diseases in Sarajevo.

Upon admission, he had cardiac and extra-cardiac manifestations of endocarditis (systolic-diastolic murmur with absolute arrhythmia, splinter haemorrhages, and laboratory criteria for glomerulonephritis) and symptoms of severe heart failure (class III/IV) according to the New York Heart Association (NYHA) criteria. Standard chest radiography and abdominal ultrasound revealed cardiomegaly, hepatosplenomegaly and stasis in the lungs and liver. *Coxiella burnetii* coinfection was confirmed by ELISA (enzyme linked immunosorbent assay) test (IgG F2+, IgG F1+, IgA F1+).

Transesophageal echocardiography (TEE) confirmed the presence of restenosis, multiple mobile vegetations (5-8 mm) attached to mitral and aortic valve (MV, AV) and signs of severe pulmonary hypertension. He did not respond to quadruple antimicrobial and cardiac therapy. A follow-up TEE performed at the end of the third therapeutic week confirmed progression of the disease: "...persistent multiple mobile vegetations at both valves 7-10 mm, left atrial thrombus 7x10 mm...".

According to cardiac surgeons, surgical intervention had to be postponed due to cardiac instability. The patient was discharged with recommendation to continue conservative treatment and need for follow-up by cardiologist, cardiac surgeon and infectious diseases (ID) specialist. Four months later he passed away. Surgery was not performed.

3. DISCUSSION

The case of a double prosthesis valves BE (MV, AV) is presented here. Prosthetic valve BE occurs in 8.3% of all cases but literature lacks reports on *double* prosthetic valves BE. The first case report dated 1980 (6), with only two cases since then, in 2006 and 2009 (2, 7).

Diagnosis of BE is confirmed late in this case, after more than a year, despite a clearly positive epidemiological survey and the fact that the patient was under continuous observation by general practitioner, and hospitalized several times. Low-grade suspicion by physician and incomplete epidemiological survey are the reasons for laterecognition of the disease (8, 9). Etiological diagnosis of BE is made on the basis of positive blood cultures, even today BE is classified as negative-blood cultures endocarditis due to a long course of the disease and irrational antibiotic treatment (10, 11). Abscess is a common complication of BE (12), but it is not the case here.

The patient met all the criteria for urgent surgical treatment (13), but PV replacement was postponed due to cardiac surgeons' opinion of a high risk cardiac instability. Conservative treatment with four antibiotics (2, 14, 15) led to slight recovery in the sense of reduction of symptoms of general infective syndrome, while PV damage progressed. Despite reported cases of successful treatment of prosthetic valve BE with medications (8,15), most authors agree that combined antimicrobial and surgical treatment is the only effective form of therapy (2).

4. CONCLUSION

There is no consensus on optimal therapeutic approach to BE but it is proved that the outcome of treatment is in function of time that passes from the onset of the disease to the administration of the causal therapy. High grade suspicion by physician significantly shortens that time and contributes to the successfulness of treatment. Prolonged febrile state in patients with PV and clearly positive epidemiological survey is considered equivalent to BE.

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