Brucella endocarditis on double valvular prosthesis

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Summary
The case is reported of a 48-year-old man suffering from Brucella endocarditis on a double prosthesis. The successful medical and surgical treatment is described. So far as the authors know, this is the first report of Brucella endocarditis from a heart valve prosthesis.

Introduction
Endocarditis following valvular prosthesis is a well known complication in heart surgery (Shafer and Hall, 1970; Arnet and Roberts, 1976).

An unusual species of Brucella (B. melitensis) was the cause of endocarditis following double prosthesis which is now described. The infection was successfully treated both medically and surgically.

A 48-year-old male presented in 1971 when catheterization led to a diagnosis of double aortic lesion and double mitral lesion. That same year a Bjork/Starr prosthesis was carried out. The post-operative clinical course was good until March 1976, when the patient became pyrexic and his general state was affected. Normal blood tests were negative and, because endocarditis was suspected, he was treated with benzylpenicillin (5 × 10⁴ u./4 hr) and streptomycin (one g/day) for 21 days at the end of which time he was discharged home without fever. He had not had any previous prophylaxis.

One month later he again became pyrexic and had petechiae. On auscultation, no murmurs were heard. Brucella agglutinations (titre 1/5120) showed positive. Blood cultures (Ruiz Castañeda (1947) method) were positive to B. melitensis. Brucella endocarditis was thereby diagnosed and the patient was started on tetracycline 2 g/day and sulphanzadine 6 g/day for 3 courses of 21 days each. Shortly after beginning this treatment, the temperature returned to normal and the blood and marrow cultures were negative.

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Fig. 1. X-ray after first operation showing a Bjork/Starr prosthesis.

At the end of the first course, the diastolic murmur of valvular dysfunction appeared at the left side of the sternum. From that moment, heart function deteriorated progressively; a severe leak through the catheterization of the aortic prosthesis was confirmed. Further surgery, to replace 2 new Bjork prostheses in the aortic and mitral positions, was carried out using Tycron sutures. Tests on the removed prostheses were negative. The post-operative course was uneventful and the patient was discharged 25 days later without sign of infection or of heart insufficiency. At 12 months later the patient remains asymptomatic.

Discussion
Endocarditis is an uncommon but serious complication of brucellosis (Spink and Nelson, 1939).
The species most often implicated are *B. melitensis* and *B. abortus* (De La Chapelle, 1929; Bagley, Muller and Wells, 1936; Vittori *et al.*, 1971). The most frequently affected valve is the aortic (Peery and Belter, 1960).

The present patient presented with endocarditis due to *B. melitensis* on a double valve prosthesis. The criteria on which diagnosis was based were: signs of prosthesis dysfunction and repeatedly positive blood and marrow cultures. Macroscopic anatomy tests during operation showed there was a leak from the prosthetic ring in the aortic position, and there were vegetations on both prostheses.

The formation of aneurysms in the sinuses of Valsalva, and dissecting aneurysms have been described from cases of *Brucella* endocarditis (Grant, 1953; Dudley, Morgan and Lacey, 1951), but there were no such lesions in the present case, neither were there such lesions as reported from an ECG of *Brucella* endocarditis reported by Dudley *et al.* (1951).

The patient was given 3 courses of tetracycline and sulphanilamide and, although with the first course blood and marrow cultures became negative, he was given 2 more courses to prevent a relapse leading to the characteristic chronic condition of *Brucella* infection.

A second operation was necessary 3 months after the first owing to the heart failure caused by a severe leak of the prosthesis in the aortic position. The removed prostheses were tested routinely and with the Ruiz Casteñeda (1947) method with negative result.

The patient was discharged, with no symptoms, 25 days after surgery and remains asymptomatic after one year's follow-up.

References


Grant, G.H. (1953) Rupture of the heart as result of *Brucella abortus* endocarditis. *British Medical Journal*, 1, 914.


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