

Isolated Acute Pericarditis Revealing Brucellosis

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Abstract Cardiac complications of brucellosis are extremely rare with an overall frequency estimated at less than 1%. They are dominated by endocarditis and myocarditis, while pericarditis remains exceptional and unusual with only few sporadic cases in the world literature. Brucella pericarditis is exceptionally isolated. It is often associated with the involvement of other cardiac tunics (endocarditis and/or myocarditis) or is part of a complex cardiac involvement (brucella pancarditis). This clinical presentation of brucellosis is a real diagnostic challenge for clinicians. We report an original case of acute pericarditis as the first and only manifestation revealing septicemic brucellosis in 27-year-old Tunisian woman.

Keywords: acute pericarditis, brucellosis, heart, pericardium, brucella

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1. Introduction

Brucellosis is an anthrozoosis still endemic in several countries around the world, representing a real public health problem [1]. It is characterized by a great clinical polymorphism, hence its qualification of "disease with a hundred faces" [2]. Unusual manifestations of brucellosis, the overall frequency of which does not exceed 5%, include myocarditis, peritonitis, neurobrucellosis, pericarditis, uveitis, orchitis, epididymitis, pancytopenia, and vasculitis [2,3,4,5,6].

Brucella pericarditis, first reported in French literature in 1982 [7] and in English literature in 1985 [8], remains an exceptional and poorly understood manifestation of this infection with only few sporadic cases in the world literature [9,10,11,12].

We report an original case of acute pericarditis as the first and only clinical presentation revealing septicemic brucellosis.

2. Case Presentation

27-year-old Tunisian woman, with no medical history, was admitted in our department for chest pain associated with progressive dyspnea, palpitations, and vesperal fever evolving for one month.

The somatic examination noted a fever at 38.5°C, tachycardia at 110/min with a regular rhythm, and muffled heart sounds. The electrocardiogram confirmed the sinus tachycardia without other anomalies. The chest X-ray showed cardiomegaly without pulmonary parenchymal lesions (Figure 1).



Figure 1. Chest X-ray: cardiomegaly

Baseline biology showed marked biological inflammatory syndrome with erythrocyte sedimentation rate at 120mm/H1, C-reactive protein at 62mg/l, and polyclonal hypergammaglobulinemia at 21g/l, hyperleukocytosis at 14,500/mm³ with 80% of neutrophils, and moderate normochromic normocytic anemia with hemoglobin at 10.8g/dl.

The other laboratory tests were without abnormalities: platelets, creatinine, serum calcium, plasma ionogram, blood glucose, uric acid, transaminases, lipid parameters, muscle enzymes, thyroid hormones, and urinalysis.

Transthoracic cardiac ultrasonography (Figure 2) as well as thoracic CT (Figure 3) confirmed the moderate and circumferential pericardial effusion, without other cardiac or pulmonary injuries. The abdomino-pelvic CT-scan was normal.

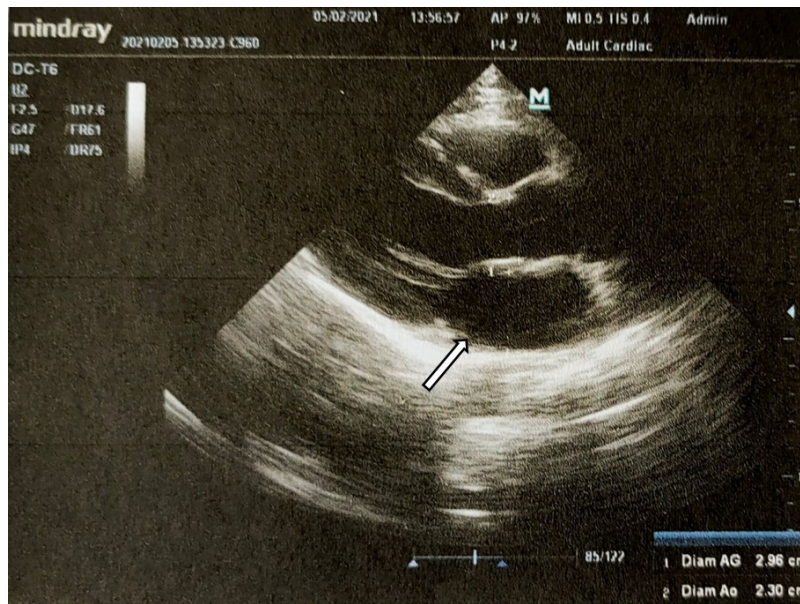


Figure 2. Transthoracic cardiac ultrasound: moderate pericardial effusion (arrow)

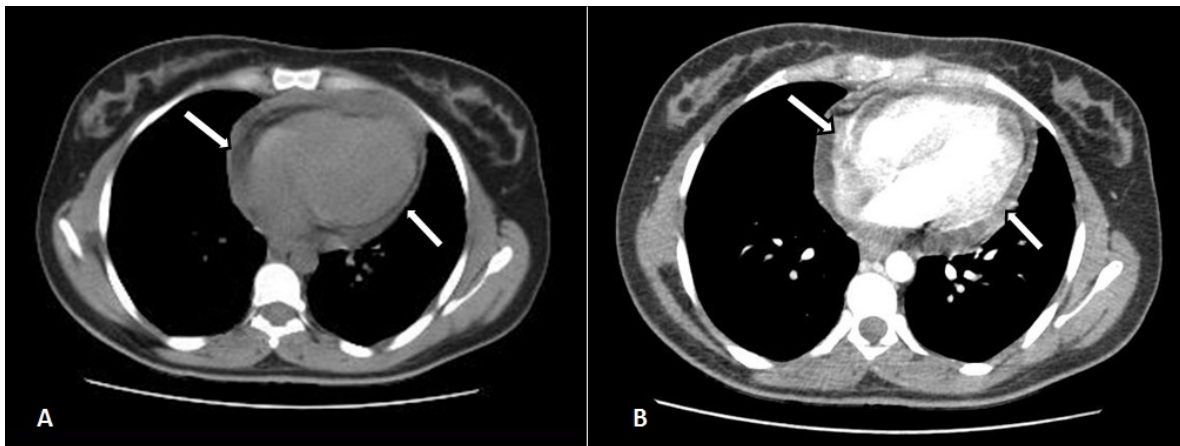


Figure 3. Chest CT-scan, coronal section, without (A) and with (B) contrast injection: circumferential pericardial effusion (arrows)

The etiological investigation of this pericarditis concluded in acute septicemic brucellosis: blood cultures were positive for *Brucella melitensis* and Wright's serodiagnosis was positive at 1/640. The other specific investigations were negative ruling out connective tissue disease, hematologic malignancies, cancer, granulomatosis, systemic vasculitis, and tuberculosis.

Thus, the diagnosis was that of isolated acute pericarditis complicating septicemic brucellosis and antibiotic therapy combining doxycycline (200 mg/j) and Rifampicin (600 mg/j) was started. The outcome was favorable with a rapid regression of clinical complaints and apyrexia from the second day, normalization of the white blood cells count and of the C-reactive protein in the second week, complete disappearance of the biological inflammatory syndrome after two months, and a normal cardiac ultrasound at three months. No recurrence has been noted for seven months.

3. Discussion

Cardiac complications of brucellosis are extremely rare. Their overall frequency is estimated at less than 1% [9,12],

but they represent the main cause of specific mortality from the disease [9,13]. Indeed, in the large Turkish series of 1080 cases of brucellosis, cardiac involvement was noted only in seven patients (0.7%) [14]. These manifestations include myocarditis, pericarditis and endocarditis [9,15,16]; While endocarditis is the most frequent cardiac presentation of brucellosis [9,15], pericarditis is rare and unusual during this anthrozoosis [3] with only a few sporadic cases [8,9,10,12,13,16,17,18]. Indeed, only two cases of acute pericarditis were noted in the two Turkish series of 240 cases of brucellosis of Hatipoglu CA et al (0.83%) [3], and of 283 cases of brucellosis of Gür A et al (0.70%) [18].

Likewise, brucellosis remains an unusual and often unrecognized etiology of acute pericarditis [17].

Brucella pericarditis is exceptionally isolated [9,10,11,12]; only one case of isolated pericarditis was noted in the Spanish series of 530 acute brucellosis of Colmenero JD et al [19]. It is often associated with the involvement of other cardiac tunics (endocarditis and/or myocarditis) [9,11,18], or is part of a complex cardiac involvement (brucella pancarditis) with fatal outcome as reported in the case of Chevalier P et al [16].

Pericarditis may, as in our observation, be the first and only manifestation of brucellosis representing a real

diagnostic challenge for clinicians even in endemic areas [17].

Pericardial effusion during brucellosis is typically minimal to moderate [8,13,17]; important effusion and tamponade are exceptional [20]. It is classically a banal serofibrinous effusion; more rarely it may be fibrinohemorrhagic pericarditis [16].

Clinically, brucellar pericarditis can present as chest pain of varying intensity which can sometimes mimic ischemic heart disease, with or without dyspnea [9,10], as it can remain totally asymptomatic and would be discovered incidentally on ultrasound or CT-scan [10,13,17].

The outcome of brucellar pericarditis is usually favorable under appropriate antibiotic therapy combining doxycycline and rifampicin [6,12]. Pericardiocentesis is required only in case of tamponade [8,12,20]. Exceptional cases of recurrence have been reported [12], as have cases of secondary constriction (constrictive pericarditis) [21].

The exact mechanism of brucella pericarditis is not yet well understood. Pericardial involvement can result of a direct effect of the bacteria as suggested by positive culture of *brucella melitensis* from pericardial effusion in the two cases of Karagiannis S et al [20], or can be of dysimmune origin (immunological disorder reacting to bacterial infection) as evidenced by the demonstration of local deposits of circulating immune complexes in cardiac biopsies [12].

4. Conclusion

As rare as it is, this unusual and often forgotten clinical presentation of brucellosis deserves to be known by any healthcare professional.

Our observation is distinguished by the isolated and revealing character of the brucella pericarditis.

Thus, screening for brucellosis may be useful for any unproven acute pericarditis occurring in endemic countries.

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