Brucellar Testicular Abscess Presenting as a Testicular Mass: Can Color Doppler Sonography be used in Differentiation?

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SUMMARY

Brucellosis is an endemic disease in various regions of the world. Testicular abscess is a very rare complication of brucellosis which can be misdiagnosed as a testicular mass and may lead to unnecessary orchiectomy. To our knowledge there are only eight reported cases in the literature of a brucellar testicular abscess. We present a case of testicular abscess due to brucellosis diagnosed with serologic tests and color Doppler sonography, and treated with antibiotics and fine needle aspiration.

Key words: Abscess; brucellosis; color Doppler sonography; testicular; ultrasonography.

Introduction

Brucellosis is an endemic, zoonotic disease in some regions of the world and affects several organs and tissues in humans. Direct contact with infected animals or ingestion of contaminated animal products are routes of transmission to humans.[1,2] Brucellar orchi-epididymitis is a complication of systemic brucellosis in humans and can be seen in 5.7% of affected patients.[1] Brucellar testicular abscess can be misdiagnosed as a necrotic testicular mass leading to unnecessary orchiectomy.[3-8] Thus, the diagnosis of an abscess is of critical importance to avoid testicular loss in these patients. We present the case of a 23-year-old man with a brucellar testicular abscess that was diagnosed with color Doppler sonographic findings, and treated with drainage and administration of combined antibiotic therapy.

Case Report

A 23-year-old male patient was admitted to the Emergency Department for right testicular swelling for 2 months. The patient declared that he was prescribed gentamycin 1x100 mg in 7 days by a family physician one month before his admission, but his complaints continued. The patient had no history of direct contact with infected animals but had a history of relatively recent ingestion of unpasteurized cheese. Physi-

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cal examination revealed a body temperature of 36.5 °C and blood pressure of 110/70 mmHg. There was right testicular swelling and tenderness. There was no color change on the scrotum. His laboratory findings included: leukocytes 8470/mm3, hemoglobin 13.4 g/dl, thrombocytes 467.000/mm^3, ALT (alanine aminotransferase) 24.7 IU/L (normal range, 7-40), AST (aspartate aminotransferase) 27.1 IU/L (normal range, 8-41), ESR (erythrocyte sedimentation rate) 19 mm/h, CRP (C-reactive protein) 0.335 mg/dl (normal value, 5 mg/dl), and the Brucella agglutinin titer was positive at 1/1280. The blood cultures of the patient were negative. Sonographic evaluation was performed with a Nemio ultrasound scanner using a 9-12 MHz linear transducer (Toshiba, Tokyo, Japan). Real time scrotal sonography revealed an anechoic cystic lesion with irregular borders and a thick wall measuring 31x41x74 mm, and containing low level echoes with few septa, which almost replaced the entire right testis (Figure 1a). The peripheral border of the lesion and the septa were hypervascular on color Doppler sonography suggestive of an abscess (Figure 1b). The right epididymis and entire right testis tissue were also hypervascularized on Doppler sonography consistent with orchi-epididymitis. The left testis was normal on scrotal gray-scale and Doppler sonography. The patient was diagnosed with brucellar orchi-epididymitis with right testicular abscess based on the constellation of laboratory and sonographic findings. Antibiotic therapy with doxycycline (100 mg twice daily) and streptomycin (1 gram daily) was initiated for 7 days. However, the diameter of the abscess did not change at the end of 7 days, and we decided to drain the abscess using fine needle aspiration to reduce the size of lesion and increase the efficacy of medication. The patient received a 6-week course of oral doxycycline (100 mg twice daily) and rifampicin (600 mg once daily), and follow-up scrotal sonography after two months showed complete resolution of the lesion leaving a residual small area of heterogeneity in the right testis (Figure 1c).

Discussion

Brucellosis, caused primarily by *B. melitensis*, remains the most common zoonotic disease all over the world, and it is endemic particularly in Mediterranean countries.[1,2,7] Brucellosis is a multisystem infectious disease which may cause suppurative complications most frequently at the bones and joints.[2] Most common clinical findings of brucellosis are fever, osteoarticular involvement, and sweating. The genitourinary system is the second most common site of focal brucellosis which can appear as orchi-epididymitis or nephritis. Orchi-epididymitis can be seen in 5.7% of affected patients.[1] Brucellar abscess occurs when the necrosis occurs in the region of granulomatous infection induced by the persistence of the bacteria in macrophages.[9] Testicular abscesses associated with brucellosis in the process of orchi-epididymitis are very rare, and only eight cases have been reported in the literature to our knowledge.[3-8,10,11] The characteristics of the reported cases are summarized in Table 1.

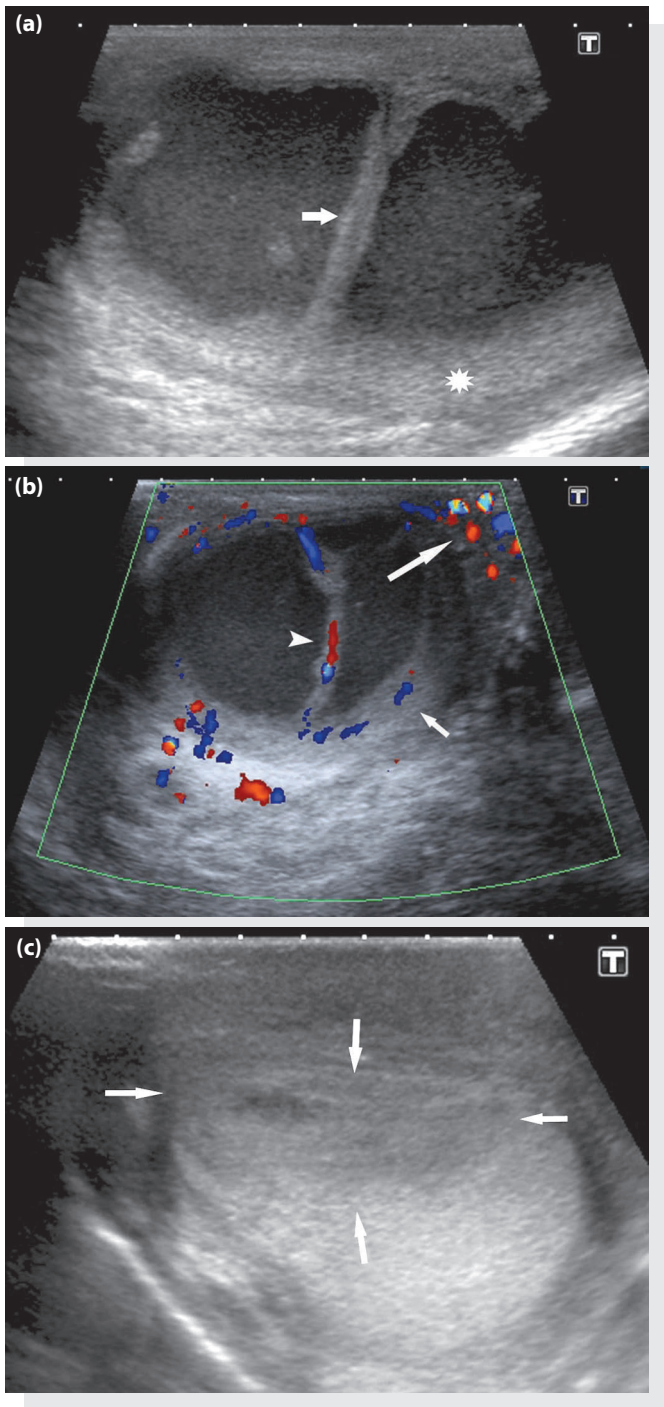

Figure 1. (a) Gray-scale sonography image demonstrates a large anechogenic cystic mass with a thick septum (arrow) and pressed testicular parenchyma (asterisk). **(b)** Color Doppler sonography image demonstrates the hypervascularity in the thick septum (arrow head), pressed testicular parenchyma (short arrow) and epididymis (long arrow) resembling orchi-epididymitis. **(c)** Gray-scale sonography image demonstrates heterogeneous hypoechogenic area (arrows) at the right testis on follow up sonography after 2 months.