



Case report

Hepatic brucelloma

Vinus Taneja, Rishikesh Dessai*, Pooja Khosla, Kishan Majithiya

Dept. of Internal Medicine, 1417, Sir Ganga Ram Hospital, Old Rajendra Nagar, New Delhi, 110060, India



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ABSTRACT

The liver is commonly affected in human brucellosis, reflected the effect of *Brucella* on the RES (reticuloendothelial system) (Akritidis et al. 2007 [1], Sadia Pérez et al. 2001 [2]). The formation of liver abscess (brucelloma) is uncommon (Rovero et al. 2003 [3]). Here we report an interesting case of brucellosis with a liver abscess in a young immunocompetent individual with no known comorbidities.

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Introduction

The liver is commonly affected in human brucellosis, reflected the effect of *Brucella* on the RES (reticuloendothelial system) (Akritidis et al. 2007 [1], Sadia Pérez et al. 2001 [2]). The formation of liver abscess (brucelloma) is uncommon (Rovero et al. 2003 [3]). *Brucella* spreads from animals to human through ingestion of infected food products, by direct contact with infected animal or inhalation of aerosols [4]. Involvement of the liver is common in human brucellosis but liver brucelloma or pseudotumor necrotizing granuloma is a very uncommon negative effect of this infection, observed only in 1.7 % of individuals [5]. Hepatic brucelloma is very rare to be the first clinical manifestation in brucellosis, and if missed can cause focal suppurative lesion [6]. We hereby, report a case of liver abscess caused by *Brucella* infection in an immunocompetent individual with no known comorbidities.

Case report

A 30 year old male, presented to our hospital with chief complaints of fever of up to 101.3 degrees F, cough with expectoration, breathlessness and abdominal pain for approximately 10 days. The patient gave no history of past medical illness.

He reported exposure to animals in the recent past. The patient had visited his farm, where he had touched and grazed the cattle. For the above mentioned complaints, the patient was managed elsewhere as a case of Enteric fever with hepatosplenomegaly and polyserositis.

On general examination, the patient's heart rate and blood pressure was within normal limits. Patient was febrile. On abdominal examination, he had hepatosplenomegaly with tenderness in the right hypochondrium. Laboratory investigations showed WBC 13,400/ μ L, total bilirubin 1.29 mg/dL, AST 145 IU/mL, ALT 80 IU/mL, total protein 5.21 g/dL and albumin 1.86 g/dL.

Chest x ray, revealed bilateral pleural effusion. Serum Agglutination test for detection of *Brucella* was positive (1:1280). Ultrasound Abdomen revealed necrotic area of size 14.2 \times 12 \times 12.6 cm in left lobe of liver, the remaining parenchyma was normal. A pigtail catheter was placed and approximately 2100 mL of purulent material was drained and was sent for microbiological investigations, which revealed presence of Gram negative coccobacilli (short rods, non-sporing and without capsule or flagella) on gram stain, compatible with brucellosis. The diagnosis of brucellosis was then confirmed. Patient was treated with Tab. Doxycycline 100 mg orally twice daily, Tab. Rifampin 600 mg/day orally, given for 6 weeks, Inj. Streptomycin 1 g intravenously once daily for 14 days. Patient improved clinically and became afebrile after treatment.

Discussion

Brucella has preference for reticuloendothelial cells (spleen, liver, bone marrow, lymph nodes) and the disease can go on for months or even years [7–9]. Liver involvement in brucellosis has various patterns like derangement of transaminase levels, hepatosplenomegaly, chronic suppurative disease, and rarely, acute hepatitis [10–15]. A brucelloma are very rare complications caused by necrosis of granulomatous tissues secondary to the presence of *Brucella* organism in macrophages [6,16]. The common sites of brucelloma are either liver or spleen and it is seldomly seen in acute brucellosis [12,17,18]. It is generally seen in a chronic

* Corresponding author.

E-mail address: desairishikesh@rediffmail.com (R. Dessai).

disease that remains undiagnosed or untreated. In the presented case, brucelloma was one of the initial clinical presentation of a previously undetected acute brucellosis, and an important feature of the underlying long-term disorder.

Radiological test like ultrasound of abdomen, CT scan or MRI are helpful for diagnosis of brucellar abscess. On ultrasound, hypoechoic, centrally calcified lesions are suggestive of brucellar liver abscess.

The most preferable method for the detection of brucellosis is the tube agglutination test, which detects antibodies against the smooth lipopolysaccharide (LPS). The titres of more than 1:160 along with clinical history and examination of the patient are highly indicative of the infection. In endemic areas titres more than 1:320 are seen and are taken to be very specific.

Tissue diagnosis of *Brucella* organism remains to be the definitive measure for diagnosis. Blood cultures with improved techniques such as the Castaneda bottles is further improved by the lysis-centrifugation technique, have better sensitivity, approximately 60 % [19].

Treatment measures include doxycycline and rifampin given for 6 weeks or doxycycline for 6 weeks and injected streptomycin for 2–3 weeks.

A Cochrane review in 2012 found that treatment with doxycycline for 6 weeks plus streptomycin for 2–3 weeks was more effective compared to the other regimen [20].

Surgical intervention is recommended when the patient does not show signs of improvement with conservative management and so interventional therapeutic management for hepatic brucelloma are preferred.

Conclusion

Brucelloma is a rare cause of liver abscess & Brucelloma as the presenting feature of Brucellosis is very rare. However, it should be considered as a possible causative organism for liver abscess in endemic areas.

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Declaration of Competing Interest

The authors report no declarations of interest.

CRediT authorship contribution statement

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