



Acute a Calcular Cholecystitis in a Patient with Brucellosis

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Abstract

Objective: This report was designed to review the critical complication following infection with Brucellosis. Although acute acalculous cholecystitis is a rare complication of brucellosis, it can be because devastating problems are not treated early and properly.

Case Presentation: Acalculous cholecystitis is strongly associated with a variety of clinical conditions. The clinical presentation is variable and often depends on the underlying predisposing conditions. In the critically ill, who may be intubated and sedated, the appearance of unexplained fever, leukocytosis, or vague abdominal discomfort may be the only clue, and warrants a high suspicion for the disease. The insidious presentation in such cases is associated with a high incidence of gallbladder gangrene and perforation. The complications may be manifested by sepsis, shock, and peritonitis. One of the rare causes of this is brucellosis which is reported in this review.

Discussion: The pathogenesis of acute cholecystitis associated with brucellosis is not well understood. Clinically, the patient may have all or some elements of the SIRS as well RUQ tenderness. Radiologically, mostly ultrasound was done and it will show a thickened gallbladder wall with pericholecystic fluid with or without distention. The gallbladder may contain some fluid which could be harboring the organism. Medical management of acute cholecystitis caused by Brucella infection will be regimens include tetracycline or doxycycline with rifampin. The surgical option will not usually need unless evidence of gallbladder perforation is occurred.

Conclusion: Although the acute cholecystitis is a very rare complication of brucellosis, it should be kept in mind especially in the endemic area and a typical presentation.

Keywords: Acalculous cholecystitis; Brucellosis

Introduction

Acalculous cholecystitis is an acute necroinflammatory disease of the gallbladder with a multifactorial pathogenesis. It accounts for approximately 10% of all cases of acute cholecystitis and is associated with a high morbidity and mortality.

The liver is commonly affected in patients with brucellosis, but the biliary duct is very rarely involved. We report here the occurrence of acute a calculous cholecystitis in the course of brucellosis.

Case Presentation

A 40-year-old male patient with a 5-day history of Right upper abdominal pain and fever was admitted to our hospital through ER. A preliminary diagnosis of acute ascending cholangitis was made. An ultrasound scan showed a thickened gallbladder wall, with partially contracted associated with pericholecystic edema and fluid with no obvious stone in the common bile duct (CBD) with normal diameter.

Laboratory data at the time of the admission were as follows: total bilirubin, 93 mmol/l (normal ~ 0-17); direct bilirubin 70mmol/l; alkaline phosphatase, 177 U/l (normal ~38-117); aspartate aminotransferase, 5U/l (normal ~30); alanine aminotransferase, 10 U/l (normal ~30); g glutamyl transferase, 45 U/l (normal ~25); serum amylase, 26 U/l (normal ~130); erythrocyte count, 4 700 000 /mm³ (normal 4 000 000–5 400 000); hemoglobin, 13.6 g/dl (normal 12–16); leukocyte count, 5500/ mm³ (normal 4000–10 000) with 41 neutrophils, 45 lymphocytes, 1 monocyte; platelets, 70 000/mm³ (normal 150 000–400 000); albumin 22; creatinine, 127 and erythrocyte sedimentation rate, 11 mm/h (normal ~15). Because the patient was febrile (39.7C), blood cultures were performed prior to the start of antibiotic treatment. After second blood cultures were obtained, therapy with Tazocin 4.5 g and metronidazole 0.5 g was begun. With this treatment, combined with fasting and i.v fluid with pain killer medications patient's temperature returned to normal within 4 days. On day 5 after admission, one blood culture was positive. The organism was identified as Brucella. Serology

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Table 1: Details of reported cases of acute cholecystitis associated with *brucella* species.

No	Author(ref)	Age/Sex	Risk Factor	Blood culture	Bile Culture	Gallstones	Treatment
1	Mettier	57/M	No	<i>B. melitensis</i>	<i>B. melitensis</i>	Absent	No
2	White	58/M	No	Negative	<i>B. abortus</i>	Present	Streptomycin
3	Valenzuela	56/M	Sheep and goat contact	NA	NA	Absent	Tetracyclin+streptomycin
4	Morris	34/M	Microbiologist	<i>B. suis</i>	<i>B. suis</i>	Present	Tetracyclin+streptomycin
5	Berbegal	33/M	No	<i>B. melitensis</i>	Negative	Absent	Tetracyclin+streptomycin
6	Shaheen	42/F	No	<i>B. melitensis</i>	<i>B. melitensis</i>	Absent	Tetracyclin+streptomycin
7	Colmenero	58/M	Shepherd	<i>B. melitensis</i>	Negative	Present	Doxycyclin+ streptomycin
8	Fasquelle	72/F	Contaminated milk of dairy products	<i>B. melitensis</i>	<i>B. melitensis</i>	Present	Doxycyclin+rifampin
9	Serrano	59/M	No	<i>B. melitensis</i>	Negative	Present	Doxycyclin+ streptomycin
10	Ashley	6/M	No	<i>B. abortus</i>	NA	Absent	TMP/SMX+ rifampin
11	Miranda	34/M	Sheep and goat contact	Negative	<i>B. melitensis</i>	Present	Doxycyclin+rifampin
12	Andriopoulos	72/M	No	<i>B. melitensis</i>	<i>B. melitensis</i>	Absent	Doxycyclin+Streptomycin
13	Lopez-Prieto	56/F	No	Negative	<i>B. melitensis</i>	Present	Doxycyclin+Streptomycin
14	Kanafani	55/M	No	<i>Bucella spp</i>	<i>Brucella spp</i>	Present	Doxycyclin+rifampin
15	Kanafani	29/F	No	Negative	<i>Brucella spp</i>	Present	Doxycyclin+rifampin
16	Alotaibi(PR)	42/M	Raw milk intgestion	<i>B.melitensis</i>	NA	Absent	Doxycyclin+Streptomycin

titer showed *Brucella Abortus* 1: 2560; *Brucella melitensis* 1: 2560.

ERCP showed a normal biliary tree, papillitis noticed with a small amount of pus came out. CT abdomen showed right side pleural effusion, free fluid in the pelvis, no liver abscess, contrast seen in the gallbladder, CBD, bowel loops.

Discussion

Brucellosis, like typhoid, is an enteric fever in which systemic symptoms generally predominate over disorders of the gastrointestinal tract [1]. Localized brucellosis may result as a complication of bacteremia and may be the only manifestation of chronic infection.

Bacterial contamination of the gallbladder via the lymphatic network may occur during a systemic infection such as tuberculosis, typhoid [2] or brucellosis. Bile cultures are not always positive in cases of acute cholecystitis: according to a French study performed in 1991 by Freland.

They are positive in more than 60% of cases at the time of acute cholecystitis. When the culture is positive, gram-negative bacilli are usually isolated, but sometimes gram-positive cocci and anaerobic bacteria are found. Therefore, it is imperative that blood cultures be performed.

After determining the antibiotic sensitivity of the organism, therapy was switched to streptomycin 1000 mg and doxycycline 200 mg, according to World Health Organization recommendations [1]. The double antibiotic treatment was continued for 6 weeks.

In this case, brucellosis was certainly linked to contaminated unpasteurized milk from camel where have been drunk by the patient & his family. As mentioned by the patient, also his brother admitted to the other hospital 2 weeks earlier with the same presentation and diagnosed to have Brucellosis; so all his family members were sent for screening.

Ingestion of such products is the main cause of contamination in people working in an environment that is otherwise free of brucellosis



Figure 1: Ultrasound image showing an evidence of a calculous cholecystitis.

risk [3]. Brucellosis was not suspected at the time our patient was admitted.

The diagnosis was reached only when blood cultures were performed due to the patient's fever. Cholecystitis occurring as a complication of brucellosis has been reported as early as 1934 [4,5]. However, this complication is very rare, with only a few cases reported since 1979 [6]. Cholecystitis is generally a calculous; two recent cases of *Brucella*-induced acalculous cholecystitis were reported in the USA in 1979 [2] and in Spain in 1986 [7]. To the best of our knowledge, only one case of acute calculous cholecystitis associated with *Brucella* has been described previously [8]. As in our case, the species of *Brucella* involved in cholecystitis is generally *melitensis* [7], but Morris et al. [2] reported a *Brucella Suis* infection. In these previous cases, blood cultures and bile cultures both were positive at the time of the infection.

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