

# Brucellosis Associated with Acute Acalculous Cholecystitis

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## Abstract

Brucellosis is a rare cause of acute acalculous cholecystitis. We report a 45-year-old, previously healthy, man with brucellosis who presented with abdominal pain due to cholecystitis.

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**Keywords** • Brucellosis • cholecystitis, acute acalculous • adult

## Introduction

In 5%–10% of patients with acute cholecystitis, calculi obstructing the cystic duct are not found at surgery<sup>1</sup> and in over 50% of such cases, an explanation for inflammation is not found. An increased risk for the development of acalculous cholecystitis is especially present with serious trauma or burns, within the postpartum period following prolonged labor, and with orthopedic and other nonbiliary major surgical operation in the post-operative period.<sup>1,2</sup> Other precipitating factors include vasculitis, obstructing adenocarcinoma of the gallbladder, diabetes mellitus, torsion of the gallbladder, unusual bacterial infections of the gallbladder (e.g. leptospira, streptococcus, salmonella, or vibrio cholerae), and parasitic infestation of the gallbladder.<sup>2,3</sup> Acute acalculous cholecystitis is rarely associated with brucellosis. We report a 45-year old previously healthy man with brucellosis who presented with fever and abdominal pain due to cholecystitis.

## Case Presentation

A 45-year-old man presented with loss of appetite, fatigue and fever for 10 days. The fever ranged from 38 to 40 °C. A localized right upper quadrant pain of moderate to severe intensity developed 2 days prior to his admission. There was no history of vomiting, diarrhea or dysuria. He was constipated for 1 week. The patient had though, consumed unpasteurized cheese 2 months prior to the onset of fever.

On admission the patient appeared ill, but nontoxic, with a temperature of 38.7 °C, heart rate of 120 beats/min, respiratory rate of 32/min and a blood pressure of 120/90 mmHg. Pertinent findings were confined to the abdomen. The abdomen was soft but tender in the epigastric and right upper quadrant regions. No rebound tenderness was appreciated. Liver and spleen were not palpable.

Complete blood count revealed a white blood cell count of 6700/mm<sup>3</sup> with 53% neutrophils and 47% lymphocytes. Hemoglobin was 14.5 g/dl, and the platelet count was 149000/mm<sup>3</sup>. Abnormal laboratory data included alanine aminotransferase of 150 IU/L and aspartate aminotransferase of 164 IU/L. Alkaline phosphatase was 260 IU/L.

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Sonography and contrast enhanced abdominal CT scan revealed enlargement of spleen, thickening of the gallbladder wall and fluid surrounding the gallbladder. Acute cholecystitis was suspected, and intravenous antibiotic treatment was begun with cefazolin and gentamicin. On day 5, the patient remained clinically stable but persistently febrile. The blood culture grew a gram negative rod, which was subsequently identified as brucella, and the standard tube agglutinin titer was 1: 640. The antibiotic regimen was changed to doxycycline and gentamicin followed by streptomycin. The abdominal pain and fever resolved 6 to 8 days after institution of antibiotic therapy. The patient was doing well after 8 weeks and the antibiotic treatment was discontinued.

### Discussion

Acute acalculous cholecystitis is a rare complication of brucellosis. There is only one published report of acute cholecystitis associated with brucellosis within the past 20 years.<sup>4</sup> Even only a few cases are recorded during the era when brucellosis was more prevalent.<sup>4-8</sup>

A MEDLINE search from 1966 to 2002 yielded ten cases of cholecystitis of which, only four were acalculous. The last case of acalculous cholecystitis, associated with brucella was reported in a 6-year-old Hispanic boy in the year 2000.<sup>4</sup>

The pathogenesis of this association is unclear. The gall-bladder may contain pus harboring the organism. The collection of fluid around the gallbladder may be seen, as was found in our patient. A thickened gallbladder wall without distention is also a possible finding. Medical management of acute cholecystitis should be directed to the treat-

ment of brucella infection.<sup>4,5</sup> Currently the recommended treatment in adult includes a combination of doxycycline and an aminoglycoside (gentamicin, streptomycin or netilmicin) for 4 weeks followed by combined doxycycline and rifampin for another 4 to 8 weeks.<sup>1,2</sup> Surgical intervention appears to be unnecessary unless perforation of the gallbladder is suspected.<sup>4</sup>

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