

# Acute acalculous cholecystitis: a rare complication of typhoid fever

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## ABSTRACT

Acute acalculous cholecystitis is a very rare complication of typhoid fever, and may be due to multi-drug resistant and virulent forms of *Salmonella* infection. It is particularly rare in adults. A 21-year-old woman, presenting with fever, vomiting, diarrhoea and abdominal pain, was found to have acute acalculous cholecystitis due to typhoid fever on basis of ultrasonographical findings and a positive Widal's test for *Salmonella typhi*. She was treated with antibiotics and made a full recovery.

**Keywords:** acute acalculous cholecystitis, cholecystitis, salmonella, typhoid fever, ultrasonography

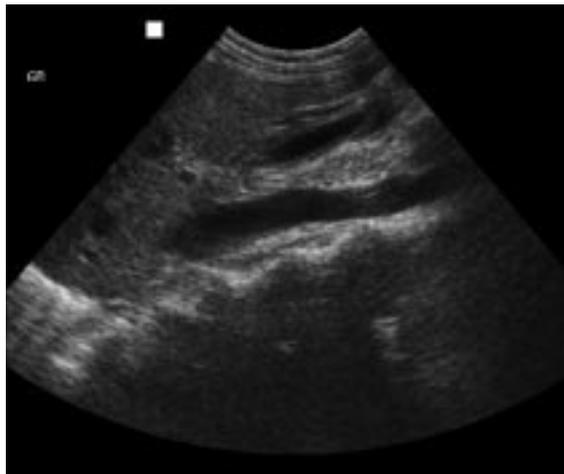
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## INTRODUCTION

Acute acalculous cholecystitis (AAC) is an acute inflammation of the gall bladder in the absence of gallstones. AAC accounts for 5% to 10% of all cases of acute cholecystitis. Very rarely is it seen as a complication of typhoid fever. The occurrence of multi-drug resistant and more virulent forms of *Salmonella* infection may explain the emergence of this rare complication of typhoid fever<sup>(1)</sup>. Although AAC complicating typhoid fever has been reported in the paediatric population<sup>(2)</sup>, its occurrence is extremely rare in adults. We therefore present this complication of typhoid fever, which occurred in a young woman.

## CASE REPORT

A 21-year-old woman presented with complaints of high-grade fever, vomiting and diarrhoea of two days duration. She was admitted to the hospital and treated symptomatically. Two days later, she developed epigastric and right hypochondrial abdominal pain. Abdominal examination revealed mild abdominal distention with guarding and rigidity in the right upper quadrant. The bowel sounds were



**Fig. 1** US image shows a thickened gallbladder wall, pericholecystic fluid and absence of gallstones, typical of acute acalculous cholecystitis.

exaggerated. The routine blood investigations were within normal limits. The Widal test was positive (*Salmonella typhi* O and H positive in dilution of 1:160). Blood cultures were negative as antibiotic treatment was commenced prior to the blood culture.

Ultrasonography (US) of the abdomen showed thickening of the gallbladder wall with a pericholecystic collection, and ultrasonographical Murphy's sign was positive (Fig. 1). On the basis of the positive Widal test and the above-mentioned US findings, the diagnosis of AAC complicating typhoid fever was made. Treatment with intravenous ciprofloxacin, cefotaxime and metronidazole was commenced. The abdominal pain subsided over a period of seven days, the patient made an uneventful recovery and was discharged on day 12. The total duration of antibiotic treatment was for two weeks (one week intravenously followed by a one-week course of oral antibiotics). Repeat US two weeks later showed complete resolution of the previous ultrasonographical findings.

## DISCUSSION

Acute acalculous cholecystitis (AAC) is usually seen in critically-ill patients after trauma, burns,

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long-term total parenteral nutrition, major non-biliary surgery and cardiopulmonary bypass. Gall bladder stasis and ischaemia have been implicated as causative factors. AAC due to primary bacterial infection is rare. AAC complicating *Salmonella typhi* infection has been reported in children<sup>(3)</sup>. In addition to *Salmonella typhi* infections, it has also been reported in non-typhoidal salmonellosis (*S. typhimurium*, *S. enteritidis*). AAC is also seen in acquired immunodeficiency syndrome (AIDS), where cytomegalovirus and cryptosporidium are the commonly associated organisms.

The ultrasonographical criteria for diagnosis include gall bladder wall thickness of >3 mm, ultrasonographical Murphy's sign, enlarged tense gall bladder, pericholecystic fluid, and absence of gall stones. AAC due to cytomegalovirus infection and cryptosporidiosis may also show bile duct thickening, in addition to the above-mentioned ultrasonographical features. This is because these infections affect not only the gallbladder, but also the entire biliary tree. Cholescintigraphy may demonstrate absence of gall bladder filling in AAC. Emergency cholecystectomy is the treatment of choice, once the diagnosis is established as AAC. This is because gangrene and perforation

are more frequent and the outcome is worse when compared to acute calculous cholecystitis. But in cases of AAC due to *Salmonella* infection, conservative management with antibiotics is recommended<sup>(4,5)</sup>.

As there is an upsurge of multi-drug resistant and more virulent forms of *Salmonella* infection, we may see more of the rarer and infrequent complications of enteric fever such as acalculous cholecystitis. Although AAC complicating typhoid fever has been previously reported in children, it may also present in adults, as in this case. Therefore, awareness of this rare complication and a high index of suspicion are required to diagnose and treat this problem effectively.

## REFERENCES

1. Jesudasan MV, Jacob John T. Multidrug resistant *Salmonella typhi* in India. *Lancet* 1990; 336: 252-4.
2. Sherlock S. Gallstones and inflammatory gall bladder diseases. Sherlock S, Dooley J, eds. *Diseases of the Liver and Biliary System*. 9<sup>th</sup> ed. Oxford; Blackwell Scientific, 1993: 562-91.
3. Subba Rao SD, Lewin S, Shetty B, et al. Acute acalculous cholecystitis in typhoid fever. *Indian Paediatric* 1992; 29:1431-5.
4. Gupta SK, Gupta V. Cholecystitis and cholelithiasis in children. *Indian Pediatric* 1991; 28:801-3.
5. Sachdev HPS, Sharma S, Khandpur SC, Kulshresta R. Sonography in diagnosis and management of acute acalculous cholecystitis. *Indian Pediatric* 1987; 24:379-83.