An Uncommon Complication of Typhoid Fever in an Adult: Acute Acalculous Cholecystitis

JIUN-LANG SU¹, CHAO-HSIN WU¹, CHUNG-MING TSAO², YING-SHU LIAO³, SHIH-MING TSAO²

Acute acalculous cholecystitis as a sequela of typhoid fever is rare in adults. Here we present a case in a 36-year-old woman who was admitted with a chief complaint of a fainting episode. A high fever developed during the observation period in the emergency room. Investigation revealed acute acalculous cholecystitis; percutaneous transhepatic gallbladder drainage was performed and antibiotic therapy was initiated. Salmonella enterica, serotype typhi, was discovered in the blood and bile cultures. The patient recovered without a cholecystectomy and was in good health at the six-month follow-up appointment.

Key words: typhoid fever, acute acalculous cholecystitis, Salmonella typhi, percutaneous transhepatic gallbladder drainage

Introduction

Typhoid fever remains an important infectious disease worldwide and it accounts for 2-3 cases per 1,000,000 population in Taiwan annually¹. Complications are common including intestinal hemorrhage and perforation, liver function impairment, jaundice and encephalopathy². Acute acalculous cholecystitis is a sequela reported mainly in children; it is extremely rare among adults³-⁸. Here we report on an adult woman with typhoid fever complicated by acalculous cholecystitis and review the relevant English literature.

Case Report

A 36-year-old woman previously in good health presented to our emergency room (ER) complaining of a fainting spell as well as a headache, dizziness, shortness of breath and tingling sensations in both hands. Her history included several weeks of a persistent and progressive headache, chest tightness, cough and general malaise despite visits to local medical, cardiovascular, neurological and ear-nose-throat clinics. In the ER, vital signs were temperature 37.8°C, pulse rate 109/min, respiratory rate 16/min, and blood pressure 118/69 mmHg. Physical examination revealed an acutely ill patient who was alert and oriented and had clear breath sounds, a normal heart rate and rhythm, a soft abdomen without tenderness and full range of motion of the extremities. Laboratory results showed the white blood cell was count 5000 /μL (64.4% segmented neutrophils, 28.0% lymphocytes, 7% monocytes), hemoglobin 14.2 g/dL; platelet count 122,000/mL.
alanine-aminotransferase 45 U/L, and C-reactive protein 9.55 mg/dL. During the observation period in the ER, her body temperature increased to 39.2°C. A chest radiograph and urinalysis showed no abnormalities. Abdominal sonography revealed slight gall bladder wall thickening (3.6 mm) and sludge. The echographic Murphy’s sign was positive. Abdominal computed tomography demonstrated dilatation of the gall bladder with wall thickening, supporting a diagnosis of cholecystitis (Fig. 1). Percutaneous transhepatic gallbladder drainage (PTGBD) (Fig. 2) was performed on the first day of hospitalization. Bile and stool cultures were collected simultaneously.

The patient was treated empirically with the antibiotic Flomoxef. The fever subsided and symptoms were relieved. Two blood samples and one bile culture grew *Salmonella enterica* serotype *typhi* (*S. typhi*). Isolates were sensitive to trimethoprim-sulfamethoxazole, ceftriaxone, levofloxacin, and ampicillin. Stool cultures were negative for *Salmonella*. Widal tests for *S. typhi* O and H were negative. Antibiotic therapy was switched to ceftriaxone after the seventh hospital day, and the Centers for Disease Control, Taiwan (Taiwan CDC) were notified. Further history revealed frequent sashimi ingestion, and travel to Bali, Indonesia, approximately one month prior to admission. The patient also reported chronic constipation, but there had been a recent episode of diarrhea. Intravenous antibiotic therapy was continued for 12 days, after which stool analysis and bile cultures were negative. The patient was discharged on oral ciprofloxacin, and there were no recurrent fevers or gastrointestinal symptoms. Six months later, repeat abdominal sonography and stool cultures were normal.

**Discussion**

Most acute cholecystitis occurs in the setting of infection and cholelithiasis, but approximately 2-15% of cases are acalculous cholecystitis, with mortality rates ranging widely, from 6-67%[9]. In 1915, Lothrop[3] reported the first case of acute acalculous cholecystitis as a complication of typhoid fever. Since then, typhoidal acalculous cholecystitis has been reported mainly in children in

![Fig. 1 Abdominal computed tomography reveals dilatation of the gall bladder with wall thickening, suggesting cholecystitis](image-url)
Therapeutic management of acute typhoidal acalculous cholecystitis is controversial. Cholecystectomy is considered the definitive treatment if it can be accomplished. A review of reported pediatric cases reveals that conservative management with antibiotics is recommended unless there are complications such as perforation or gangrene\(^7\). Nevertheless, PTGBD and sustained antibiotic therapy, as applied successfully in this instance, might be appropriate in the adult population, particularly if the patient is elderly or at high surgical risk because of poor general health\(^10\).

To ascertain whether the *S. typhi* was indigenous or imported, the three isolates from our patient were subjected to pulsed-field gel electrophoresis analysis using the PulseNet standardized protocol\(^11\) in the Central Region Laboratory of the Taiwan CDC. These were then compared to those in Taiwan CDC’s *Salmonella* Fingerprint Database, which at the time of this writing contained 365 *S. typhi* strains recovered since 1996 in Taiwan. The three isolates from the present case had identical PFGE patterns and shared 91% similarity with the two most closely related isolates in the database, which were indigenous and were recovered in 2004 and 2007 (Fig. 3). Although our patient had traveled to Indonesia one month before symptom onset, the recovered strain was distinct from all isolates in the database recovered from travelers to Indonesia and from native Indonesians working in Taiwan.

Although the prevalence of typhoid fever, indigenous and imported, has decreased in Taiwan\(^1\), two important points are illustrated by this case. First, clinicians must become aware that this rare complication of typhoid fever, characterized by nonspecific symptoms, can occur in adult patients. Second, in patients with acute acalculous cholecystitis, unusual bacterial etiologies should be considered, including *S. typhi*.

Fig. 2 Percutaneous transhepatic gallbladder drainage (PTGBD) was performed under local anesthesia by insertion of an 8-French pigtail catheter into the gallbladder.
Fig. 3  Dendrogram of PFGE patterns and epidemiological data for Salmonella enterica serotype typhi isolates. The isolates were recovered between 2004 and 2009 from patients with no travel history, travelers returning from Indonesia, and Indonesian workers in Taiwan. The three isolates recovered from the present patient (two from the blood and one from the bile) are indicated by black rectangles

References

成人傷寒罕見之併發症：非結石性膽囊炎

蘇俊郎¹ 吳肇鑫¹ 蔡仲明³
廖盈淑⁴ 曹世明²

傷寒併發非結石性膽囊炎在成人是很少的，本文報告一位36歲的女性因為昏睡而掛號急診。在急診觀察時病人發高燒，檢查後發現是非結石性膽囊炎，病人接受經皮穿肝膽囊引流並給予抗生素治療。血液及膽汁培養皆為傷寒桿菌。病人康復且無接受膽囊切除術並在門診追蹤六個月病人仍相當健康。

關鍵詞：傷寒桿菌，非結石性膽囊炎，傷寒桿菌，經皮穿肝膽囊引流