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Case report

Gall Bladder Perforation: An Unusual Presentation of Enteric Fever

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**ABSTRACT:**
Gall bladder perforation is very unusual presentation of enteric fever with high morbidity and mortality if diagnosis is delayed. We report a case of an adolescent who had enteric fever with generalized peritonitis, radiograph of abdomen is not suggestive of bowel perforation. The patient was intra-operatively diagnosed as acalculous gall bladder perforation complicating enteric fever. He was managed with cholecystectomy and appropriate antibiotic coverage. Patient recovered uneventfully. Acalculous gall bladder perforation in enteric fever is a rare surgical complication. Enteric fever is common in developing and poor countries because of poor hygiene and sanitation condition as it spread through faecal-oral route. Investigation like sonography and CT-scan lacks specificity for gall bladder perforation. In our case gall bladder perforation diagnosed intra-operatively and managed with cholecystectomy. In enteric fever with generalized peritonitis diagnosis of gall bladder perforation should be look with high suspicion if bowel perforation is not identified pre-operatively or intra-operatively. Cholecystectomy is procedure of choice to prevent high morbidity/mortality.

**KEYWORDS:** Gallbladder perforation; enteric fever; adolescent.

**INTRODUCTION:**
Gall bladder perforation in enteric fever is very unusual presentation. It has been common in acute calculous cholecystitis in adults and elderly as compare to enteric fever complicating with gall bladder perforation in an adolescent which is very rare\(^1,2\). Enteric fever causing surgical complications is a cause of significant morbidity and mortality. Intestinal perforation is the most common surgical complication of enteric fever. Gall bladder perforation in enteric fever is rarely diagnosed preoperatively has posed a difficult challenge due to its high morbidity and mortality\(^2\). We here report a case of enteric fever with acalculous gall bladder gangrene and perforation in an adolescent\(^3\).

**PRESENTATION OF CASE:**
An adolescent of age 14 year presented with fever, pain abdomen with abdominal distension since last 12 days and not passing stool/flatus since 2 days. The patient was earlier admitted at local
hospital for 5 days and then referred to us due to clinical deterioration. At the time of admission patient was febrile, ill looking but well oriented to time, place and person. Three episodes of vomiting after admission to the hospital. On examination, mild pallor was present but no cyanosis/jaundice/lymphadenopathy/pedal oedema. He had tachycardia, tachypnea with normal blood pressure. Per abdomen examination revealed diffuse abdominal distension, umbilicus central and inverted, no engorged veins, no scar marks, external genitalia and hernial sites were normal. Generalized tenderness and guarding was present, no local rise of temperature, no lump palpable. Liver dullness was not obliterated and raised bowel sounds heard over the abdomen. Respiratory system examination revealed tachypnoea with air entry bilateral equal in both lung field.

CVS examination was within normal limits. Investigation showed Hemoglobin 7.6gm%, TLC 5600/cmm with neutrophils 72%, platelet count 98000/cmm. Urine examination showed no abnormality. Optimal test for malaria was negative. Widal test was strongly positive for salmonella typhi antigen “O” and “H”. USG abdomen was suggestive of mild hepatosplenomegaly, mild amount of free fluid was seen in the peritoneal cavity/peri-hepatic space/perisplenic space and mesenteric lymphadenopathy, gall bladder was small and contracted with thickened gall bladder wall, no sonographic evidence of gall stones was seen at this stage. Chest radiography was within normal limit.

The patient was diagnosed as enteric fever with generalized peritonitis and conservative treatment was started with appropriate antibiotic coverage but as there was no improvement in symptoms decision was taken for exploratory laparotomy.
The patient was operated through midline vertical incision. Around 500 ml bilious fluids was present in peritoneal cavity with inflamed and thickened ileum but no bowel perforation found. Then gall bladder was looked for any pathology. Small and shrunken gall bladder identified with multiple
gangrenous patches and perforation with leaking bile (Fig. 2 & 3). Cholecystectomy was done and closure done after thorough wash of peritoneal cavity with normal saline. In post-operative period symptoms of patient improved gradually and discharged on postoperative day 8th. Patient was a febrile and orally tolerating with soft and non-tender abdomen, passing stool/flatus normally. Follow-up after 7 days was uneventful. Blood and bile culture reports were positive for *salmonella typhi*. Intravenous ceftriaxone 2 gm was given twice a day for five days.

**DISCUSSION**

Typhoid fever is mainly caused by *salmonella typhi*. *Salmonella typhi* is the major cause of enteric fever. S. para A and S. para B are relatively infrequent. The term "enteric fever" includes both typhoid and paratyphoid fever. Typhoid fever is transmitted via the faecal-oral route or urine-oral routes. Enteric fever is a systemic infection involving almost all organs of the body, common surgical complications include intestinal perforation, intestinal bleeding, cholecystitis, osteomyelitis and abscesses, pleural effusion. Enteric fever causing gall bladder perforation is rare phenomenon and hardly suspected preoperatively as generalized peritonitis is common feature both in ileal perforation and gall bladder perforation. Non-obstructed cholecystitis is unlikely to result in gall bladder perforation as in case of enteric fever. Intense inflammation associated with infection with more virulent organisms and existence of an immunocompromised state leads to thrombosis of the blood vessels which can lead to transmural necrosis and perforation. Investigations like CT-scan and sonography lacks specificity for gall bladder perforation. In comparative study of ultrasonography and CT-scan to detect the site of gall bladder perforation by Kim et al. found 50% success rate with CT-scan but nil on sonography. However, both modalities are equally effective in demonstrating cholelithiasis, pericholecystic fluid collections and thickening of gallbladder wall in 2001; Sood et al. showed slightly higher rate of detecting of gall bladder perforation on CT scan than with Ultrasonography.

Ultrasonography is the first line imaging modality for evaluation of gall bladder perforation as in our case sonography shows thickened gall bladder wall with small and contracted gall bladder without any evidence of gall stones. Our case fell into grade-1. Neimeier category of gall bladder perforation with mortality in this group is very high almost 55% because this type of acute acalculous cholecystitis with gall bladder perforation often associated with acute infection like pneumonia, enteric fever. Our case is unusual because laparotomy was planned with suspicion of bowel perforation but intraoperatively ileum found inflamed, without any bowel perforation, peritoneal cavity containing 500ml bilious fluid. Gallbladder with multiple gangrenous patches and perforation identified intra-operatively, managed with cholecystectomy and appropriate (ceftriaxone 2 gm/day) antibiotic coverage.

**CONCLUSION**

Suspicion of gall bladder perforation in cases of enteric fever with generalized peritonitis should be kept in mind in which plain radiograph of abdomen does not show free gas under domes of diaphragm. Delay in diagnosis can lead to fatal outcome and surgical procedure must be performed immediately. Emergency laparotomy and cholecystectomy is procedure of choice with appropriate antibiotic coverage.

**REFERENCES**


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