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RESEARCH ARTICLE

ENTERIC PERFORATION – A CASE REPORT

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ABSTRACT

Enteric fever is a faeco-orally transmitted disease, common in developing countries. It is fraught with numerous complications of which intestinal perforation is a dreaded one. Timely diagnosis and adequate medical and surgical management is key to preventing morbidity and mortality. In our case report we present a case of enteric perforation and discuss about the various factors predisposing to perforation and the outcome thereof.

Key words:

Enteric fever,
Enteric Perforation.

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INTRODUCTION

Enteric fever or typhoid fever is caused by the gram negative bacilli *Salmonella typhi*. It is transmitted by the faeco-oral route and is still a major public health problem in developing countries of Asia and Africa. Intestinal perforation is a life threatening complication of enteric fever and causes considerable morbidity and mortality. Various factors that govern the incidence of perforation include age, sex, inadequate antibiotic therapy, immunization status and immunity of the individual. These factors in turn influence the outcome in case there is intestinal perforation.

Case report: 47 years old male, known case of hypertension controlled with medication reported to the hospital with complains of fever of 05days duration and pain abdomen of one day. Fever was initially low grade with associated malaise. He developed high grade fever for the past 2days. It was associated with aching pain initially around umbilicus which progressed overnight and he had pain over whole of abdomen. Pain was aggravated with coughing and movement. There was no history of associated vomiting. On examination patient was lying still in bed, febrile (102F) with tachycardia. Other vital parameters were within normal limits. Abdominal exam reveal diffuse tenderness with rigidity. Bowel sounds were present. Rest of the systemic examination was within normal limits. Investigation revealed leukocytosis with TLC of 15800/mm³ with predominant neutrophilia.

Remaining hematological and biochemical parameters were within normal limits. Radiograph of chest standing showed pneumo-peritoneum (Fig. 1). USG abdomen revealed likely appendicitis with sealed perforation. Patient was admitted and kept nil per orally and started on broad spectrum IV antibiotics. He was taken up for emergency laparotomy. Per operatively a 0.5 X 0.5cm perforation was found 06cm proximal to ileo-caecaljunction (Fig. 2) with appendicular lump with appendix deeply buried between the ileal loop and caecum. Perforation was sealed with omental patch and drains placed in right paracolic and pelvic space. Patient was continued on iv antibiotics post operatively. Ambulation with incentive spirometry started first post op day onwards. Patient was initially started on RT feeds and subsequently switched to oral feeds. The recovery was uneventful.

DISCUSSION

Typhoid fever remains a global health problem and the exact incidence is difficult to estimate as the myriad of clinical features resembles many other diseases and that a lot many cases go undiagnosed due to lack of laboratory resources. Humans are the only natural host and reservoir. Incubation period is 08-14 days, but may range from 03days to 3months. About 2-5% of infected people become chronic carriers and harbor the bacilli in gall bladder (World Health Organisation, 2011). Clinical feature may vary from an acute uncomplicated form characterized by fever, malaise, headache, sore throat, bowel disturbance (diarrhea in children and constipation in adults) to a severe complicated form with complications like intestinal hemorrhage and perforation, typhoid meningitis, encephalomyelitis, Guillian Barre syndrome, cranial or

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Table 1.

	Incubation : Week 1	Week 2	Week 3	Week 4	Post
Systemic				Recovery phase or death (15% of untreated cases)	10-20% relapse, 3-4% chronic carriers, long term neurologic sequelae (extremely rare), gall bladder cancer (RR: 167; carriers)
Step ladder fever pattern or insidious onset fever	Very common	Very common			
Acute high fever	Very rare				
Chills	Almost all				
Diaphoresis (Rose spots on the trunk)	Very common				
Neurologic					
Malaise	Almost all	Almost all	Typhoid state		
Insomnia		Very common	Common		
Confusion/ Delerium	Common	Very common			
Psychosis	Very rare	Common			
Catatonia	Very rare				
Frontal headache (usually mild)	Very common				
Meningeal signs	Rare	Rare			
Parkinsonism	Very rare				
Ear, nose and throat					
Coated tongue	Very common				
Sore throat					
Pulmonary					
Mild cough	Common				
Bronchitic cough	Uncommon				
Rales	Common				
Pneumonia	Rare(lobar)	Rare	Common (basal)		
Cardiovascular					
Dicrotic pulse	Rare	Common			
Myocarditis	Rare				
Pericarditis	Extremely rare				
Thrombophlebitis			Very rare		
Gastrointestinal					
Constipation	Very common	Common			
Diarrhoea	Rare	Common (pea soup)			
Bloating	Very common				
Diffuse mild abdominal pain	Very common				
Sharp Right lower quadrant pain	Rare				
Gastrointestinal haemorrhage	Very rare (usually trace)	Very common			
Intestinal perforation			Rare		
Hepato Splenomegaly	Common				
Jaundice	Common				
Gall bladder pain	Very rare				
Urogenital					
Urinary retention	Common				
Haematuria	Rare				
Renal pain	Rare				
Musculoskeletal					
Myalgias	Very rare				
Arthralgias	Very rare				
Rheumatologic arthritis (large joints)	Extremely rare				
Dermatologic					
Rose spots		Rare			
Miscellaneous					
Abscess (anywhere)	Extremely rare	Extremely rare	Extremely rare		

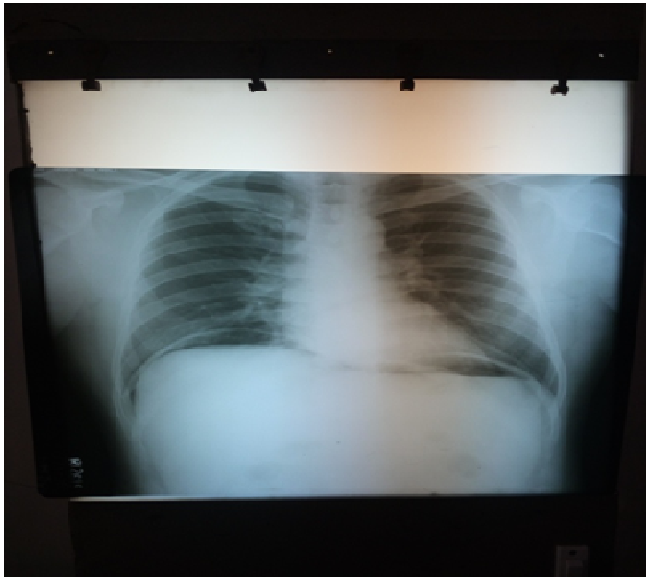


Fig. 1. Chest radiograph showing pneumoperitoneum

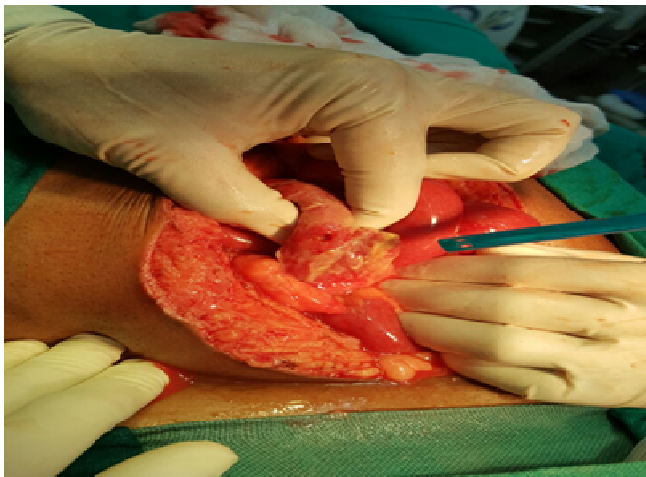


Fig. 2. 0.5X0.5 cm perforation in terminal ileum

peripheral neuritis, psychotic symptoms. Incidence of complications is given to be 10% of typhoid cases with intestinal perforation accounting for 3% of the admitted cases¹. Classically clinical features of enteric fever and its complications are given as per a timeline which is elucidated in the summary table (World Health Organisation, 2011) (Table 1). Among the cases of intestinal perforation, ileal perforation is the commonest. Other sites of perforation may be jejunum and colon.²Boyd (1976) reported colonic perforation in 6 cases of salmonella poisoning on post mortem examination (Boyd, 1976). Higher incidence of perforation in ileum as compared to rest of the gut is attributed to the higher concentration of Peyer's patches.

By 2nd week the bacilli reaches small intestine leading to lymphoid hyperplasia. This leads to necrosis and perforation of the gut. Various factors that have been implicated as predisposing factors include male sex, age 15-30 yrs, virulent strain, inadequate treatment. Pediatric age group accounts for more than 50% of all cases of typhoid intestinal perforation (Ameh, 1999). Although perforation is common after 2nd to 3rd week of fever, there have been reports of perforations occurring as early as in the first week. In our case, the individual had fever of only five days duration when he first sought medical help. Prognosis depends largely on the time elapsed before treatment is started. In resource poor countries due to delayed reporting and lack of adequate and sensitivity guided therapy, the mortality is higher.

Out of simple closure, wedge excision of ulcer and anastomosis or segmental resection and anastomosis, segmental resection and anastomosis seems to be the best treatment for typhoid perforation (Kalra *et al.*, 2003). Enteric perforation is the commonest life threatening complication of typhoid fever and operation for typhoid perforation remains the commonest emergency operation for children over 3 years of age with the yearly incidence rising, the complications remaining the same and the mortality rising (Adeniran *et al.*, 2005). Delayed diagnosis and inadequate treatment are the major culprits. Once perforation occurs, it has to be promptly identified and aggressively managed. The morbidity and mortality associated with typhoid fever in our environment can only be reduced significantly when the nation and public health officials begin to pursue the principles of primary health care with all seriousness it deserves i.e. emphasis on provision of potable water supply and sanitation (Na'aya, 2004).

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