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GASTRIC PERFORATION IN A PATIENT WITH TYPHOID FEVER ILEAL PERFORATION: A CASE REPORT

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Abstract

Typhoid intestinal perforation is still prevalent in many developing countries. Despite the advances in the management, the outcome in these patients in resource limited countries is still very poor. Perforation can be single or multiple occurring in both ileum and colon but none have been reported in the stomach. We therefore report a 22-year-old male who presented with high-grade continuous fever of two weeks and generalized abdominal pain and swelling, of five days duration. Prior to development of abdominal pain had received over-the-counter medications comprising of multiple Non-steroidal anti-inflammatory drugs (NSAIDs: ibuprofen, diclofenac) pain relief (paracetamol), antibiotics (ampiclox, flagyl) and others. He is not a known peptic ulcer disease patient, and does not drink alcohol or smoke. A provisional diagnosis of intestinal perforation secondary to typhoid fever was made.

He was resuscitated and urgent investigations were done and included; biochemical profile, complete blood count, widal test, chest x-ray showing upper abdomen, abdominopelvic ultrasound. The deranged parameters were corrected and patient had emergency exploratory laparotomy.

Intra-operatively, gross peritoneal contamination, fibrinous exudates in between bowel loops and two perforations at ileal anti-mesenteric border and gastric lesser curvature were noted. Peritoneal decontamination with copious saline lavage was done. Perforations were biopsied and closed and broad-spectrum antibiotics continued with intensive care admission. Patient was followed up on out-patient after discharge with no further complaints.

Conclusion: Gastric perforation can occur in patients with typhoid fever ileal perforation following abuse of over-the-counter medications. During exploration this should be searched for especially when there's such history.

Keywords: Typhoid ileal perforation, Gastric perforation, Non-Steroidal anti-inflammatory drugs (NSAIDs), antibiotics abuse.

INTRODUCTION

Typhoid intestinal perforation is one of the intestinal complications of typhoid fever.¹ It is still prevalent in many developing countries.¹ Despite the advances in the management, the outcome in these patients in resource limited countries is still very poor. Perforation can be single or multiple, occurring in both ileum and colon² but none has been reported in the stomach. The incidence of typhoid ileal perforation in tropical countries ranges from 0.9% to 30%.² In West African sub-region, the incidence of typhoid ileal perforation varies from 15% to 33%.³ This rise in incidence, is as a result of lack of clean and portable water supplies with inadequate waste-disposal system in the rural areas of this region. Clinical presentation ranges from fever of high grade with typical description of step-ladder, abdominal pain, progressive abdominal distension, and sepsis. These features can be worst with longer duration of illness with mortality rate of up to 58% as seen in Nigeria 50years ago.⁴ Other factors that can worsen prognosis includes disease related factors (bacterial loads and virulence of the organism), patients factors (immunity, acidity of the stomach, relative stasis at the payers patches, patients age and presence of co-morbidities) and treatment factors (delay surgical treatment, inadequate resuscitation, wrong choice of surgical technique, lack of intensive care support and inexperience of the surgeon).⁴

CASE REPORT

A 22year old male who presented with high grade continuous fever of two weeks and generalized abdominal pain and swelling of five days duration. Prior to development of abdominal pain had received over-the-counter medications comprising of multiple Non-steroidal anti inflammatory drugs (NSAIDS: ibuprofen, diclofenac) pain relief (paracetamol), antibiotics (ampiclox, flagyl) and others. He is not a known peptic ulcer disease patient, and does not drink alcohol or smoke. A provisional diagnosis of intestinal perforation secondary to typhoid fever was made.

He was resuscitated with intravenous fluids and blood transfusion, nasogastric tube insertion to decongest the abdomen, urethral catheterization to monitor urinary output and adequacy of resuscitation and broad spectrum antibiotics were given with anaerobic organisms coverage. Urgent investigations were done and included ; biochemical profile which showed hypokalemia and complete blood count showed white blood cells (WBC) of $12 \times 10^9 / L$, neutrophyllia of 80%, widal serology test for serum antibody against O and H of S Typhi antigens which was positive for both O and S antigens as there was four fold rise. Chest x-ray showing upper abdomen was also done and air under the diaphragm was noted, abdominopelvic ultrasound showed free flowing fluid in the peritoneum with loss of bowel peristalsis. The deranged parameters were corrected and patient had emergency exploratory laparotomy using a midline approach.

Intra operatively, we noted a fecopurulent peritoneal fluid of 3.5Litres with fibrinous exudates in between bowel loops. There were two perforations seen, measuring 1.5x1.0 cm on antimesenteric border of the ileum 40cm from the ileocaecal junction (figure 1) and another 3.0cmx2.0cm on gastric lesser curvature (figure 2) and inflamed payers patches, with the omentum far away from the perforation.

Peritoneal fluid sample was collected for culture, peritoneal decontamination was done with copious saline irrigation, perforations were biopsied and edges freshened and closed primarily with intra abdominal drain insertion. Abdomen was closed enmass with monofilament non-absorbable suture and skin tagged also with monofilament, leaving enough spaces in between to encourage drainage. Patient was admitted in intensive care unit for adequate monitoring and organ support. Post operative treatment orders were nil per oral, intravenous fluids, parenteral antibiotics, pain relief, steroids, omeprazole and strict vital signs monitoring for the period of five days. Thereafter patient was converted oral feeds and drugs. Wound inspection and dressing was commenced on day two post operative day and secondary wound closure was done the next 72hours. Patient was discharge home on the 12th post operative day and was followed up on out patient clinic with no further complaints.

Peritoneal fluid sample culture result was positive for *S. Typhi* and histopathology results showed inflammatory cells.



Figure 1; ileal perforation

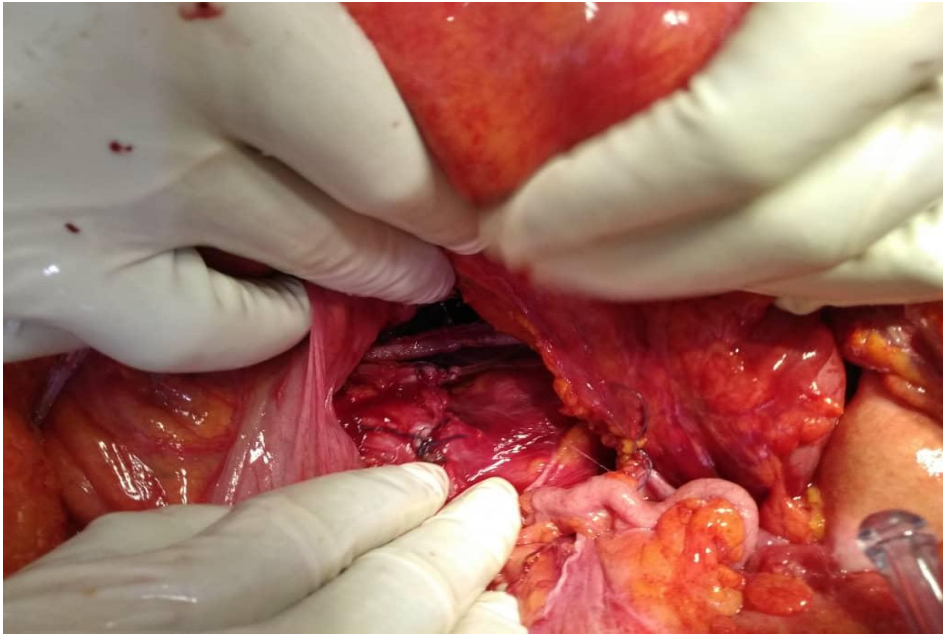


Figure 2: closed gastric perforation

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DISCUSSION

Typhoid fever is caused by Salmonella Typhi. The organism is a gram negative non spore forming facultative anaerobic bacillus. It is a systemic disease transmitted through feco-oral route. Intestinal perforation is one of the gastrointestinal tract complications and this is enhanced by decrease gastric acidity, antacid ingestion, and achlorhydra (H. pylori infection).⁵ Any disruption in intestinal integrity either due to alteration of the flora by antibiotics abuse has also been reported as a risk factor to intestinal perforation⁵ like the index case report which the patient has been on over the counter drugs including antibiotics before the abdominal pain.

Olurin et al⁶ has stated that the ultimate diagnosis of typhoid perforation depends upon culture of salmonella typhi in free peritoneal fluid and histopathological examination. In the absence of the latter, diagnosis depends on the history of fever followed by abdominal pain and features of peritonitis, others are intra operative findings of anti mesenteric located perforation that is within 2feet from ileocaecal junction and inflamed payers patches.⁷ This description is in keeping with the index case report where both the clinical history and the intra operative findings with the peritoneal fluid culture results are strongly supportive of typhoid perforation.

Patients with typhoid perforations usually require vigorous resuscitation, surgical intervention and aggressive broad antibiotic cover with intensive care unit admission for monitoring and organ support.⁸ Similar treatment was given to the index patient..

The mortality rate associated with typhoid perforation varies. Many authors have reported different values between 0.9% and 33%.^{2,3,9,10}

The mortality of typhoid intestinal perforation has been reported as not dependent on age, gender, number of perforations, location of perforations, and sizes of perforations.^{9,10,11} Mortality is affected by late presentation, extensive peritoneal contamination, associated sepsis with organ failure, and delayed appropriate medical intervention and ileostomy.^{9,10} Some authors have also included age and number of perforations as factors affecting mortality.¹² The importance of this variations in the mortality factors has called for a need for reports of cases and further investigations on dependent factors. Our patient is 22years, had two perforations, extensive peritoneal contaminations, no comorbidity and presented five days after symptoms but had effective preoperative resuscitation, early and appropriate surgical intervention, postoperative intensive care support and wide spectrum antibiotics cover, these contributed to a good outcome.

In conclusion, gastric perforation can occur in patients with typhoid fever ileal perforation following abuse of over-the-counter medications. During exploration this should be searched for especially when there's such history. Treatment consists of effective preoperative resuscitation, early surgical intervention, intensive postoperative care and use of broad spectrum antibiotics.

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