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Case Report

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Caecal typhoid perforation: case report

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ABSTRACT

Typhoid fever leading to only caecal perforation is a rare cause of acute abdomen in children. We present a case of a 15 year male child with typhoid fever admitted with perforation and peritonitis. At laparotomy a large perforation was noted in the caecum which was histologically consistent with typhoid. The ileum was spared. Very few cases have been reported in literature where only the caecum was involved in typhoid, sparing the terminal ileum which is the most common part to be affected.

Keywords: Typhoid fever, Caecal perforation

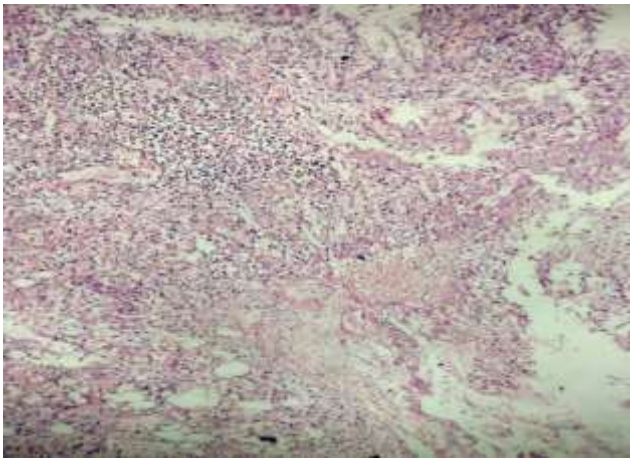
INTRODUCTION

Intestinal perforations due to typhoid are still prevalent in many developing countries including India. The rates of perforation in patients with typhoid reported in literature vary between 0.8% and 18%.[1] The high incidence of perforation in developing countries is due to late diagnosis and emergence of MDR strains of salmonella typhi. Ileum is the most common site for typhoid perforations. Studies suggest that caecal typhoid perforation is very rare and is reported to be between 0% to1.8% out of the typhoid perforation spectrum.[1,2]

CASE SUMMARY

A 15 years old male child presented to the emergency department with complaints of fever for 3 weeks, pain abdomen and vomiting for the past 6 days and failure to pass either stools or flatus for the past 3 days. On examination, the patient was conscious and oriented but was dehydrated and had tachycardia. Abdomen was distended with severe guarding and rigidity. Bowel sounds were sluggish. Digital rectal examination was normal. Patient was resuscitated and investigated. Ultrasound abdomen suggested large air containing fluid collection with thick internal echoes in the paracolic gutter bilaterally, likely resulting from perforation. A few enlarged lymph nodes were also seen. X-ray abdomen showed typical air under the diaphragm. Blood investigations showed hemoglobin of 8g/dl, TLC 13000/cu mm, DLC of P 67%, L 28%, E 5%, M 0% and platelet count of 4.8 lacs/cu mm. Renal functional tests and serum electrolytes were grossly normal. Widal test was reported as salmonella typhi O titres of 1:160 suggesting that the patient had typhoid. The patient was adequately resuscitated with intravenous fluids to maintain a urine output of 2 ml/hour. Nasogastric tube was inserted and around 200ml of bilious fluid was drained. Foley's catheterization was done and intravenous antibiotics were started. 1 unit of whole blood was transfused and patient was taken to the operating room. Under general anesthesia laparotomy using a mid line incision was carried out. Intraoperatively around 2.5 litres of thick foul-smelling pus was drained. Dense adhesions were present involving the terminal ileum, caecum and ascending colon which had formed a mass in the right inguinal fossa.

Figure 1: Cut section of the excised ileum , caecum and appendix.



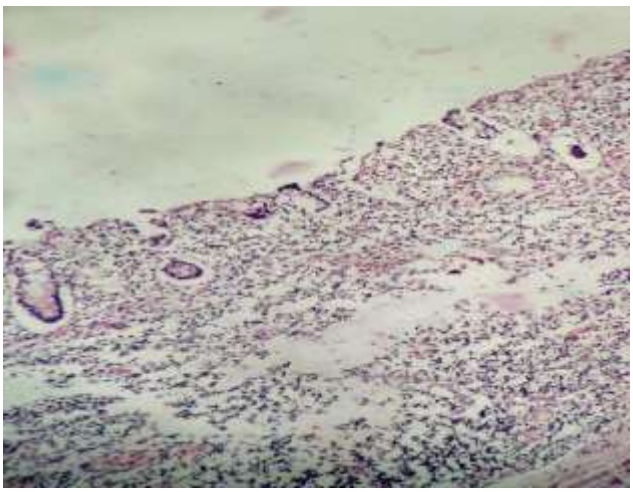


Figure 2: Histological sections of the perforation margin.

A large 2x2 cm perforation was found in the caecum and the appendix was inflamed. Adhesiolysis and resection of the ilieocaecal junction with end to end anastomosis of ileo-ascending colon was done. The patient had a hectic post-operative period with regular spikes of fever. The abdominal drain had around 300-400ml of foul-smelling pus post-operatively which gradually reduced and ceased by the 5th post-operative day. IV fluids with potassium supplementation and IV antibiotics were administered. Pus culture revealed *Acinetobacter* sp. senstitive to imipenum, meropenum, amikacin and gentamycin. Patient's abdominal drains were removed on the 5th post operative day and gradually he was started on full oral diet by the 9th day. Patient was discharged on the 10th post-operative day in good clinical condition. He remained on regular follow up and was noted to be accepting oral diet and gaining weight.

Gross and histo pathology

On macroscopic pathological examination the excised gut portion of ileum, caecum and appendix measured 16 cm in length and grossly had serosa covered by exudate. On cutting open, perforation was seen at the postero-lateral wall of the caecum about 6 cms from the smaller cut end.

Microscopically, sections from the perforated margins showed focal ulceration with hypertrophy of Peyer's patches. There was evidence of serositis composed of chronic inflammatory infiltrates including macrophages along with congested blood vessels. Section of excised lymph nodes showed lymphadenitis. The overall impression was of caecal ulcer with perforation consistent with enteric pathology.

DISCUSSION

Typhoid fever, caused by gram negative bacillus Salmonella typhi, is still a major public health issue in many developing countries.[3] It is transmitted through faeco-oral route, and due to lack of clean potable water and poor finances, continues to cause widespread disease in dwellers of these areas. Females are affected more than males with predominance in the younger age group.

Typhoid fever carries the dreaded complication of ileal perforation and rarely perforations involving other parts of the gut too.[4-7] The incidence of perforation ranges from 0.9% to 39% with a mortality rate which remains very high though showing a declining trend.[8] The mortality and morbidity of the patient primarily does not depend on the surgical technique used but on the general status of the patient, the virulence of the organism and the duration of the disease before surgical treatment is carried out.[9] The major reason for adverse outcome is the associated peritonitis and sepsis.[10]

Typhoid perforation usually occurs in 2nd to 3rd week of fever as in the case reported here.[11] Although typhoid ulcers could occur anywhere from the stomach to the rectum, the terminal ileum is usually mostly involved due to the high concentration of Peyer's patches.[12] Colonic involvement is very rare.[7] It is postulated that colonic involvement is due to direct bacterial invasion while ileal lesions are due to enterotoxin produced from parasitized

macrophages that caused hyperplasia, necrosis and ulceration.[1,12]

The patient presented here had history and examination of typhoid fever with intestinal perforation and peritonitis, along with consistent findings on abdominal imaging. The late arrival to the hospital after onset of features of perforation led to peritonitis causing a stormy course even after surgery. As bacteriological and serological investigations usually take one to three days for results, vigorous resuscitation is done and when patient is stable patient may be taken up for surgery, as was done in this case.[13-16]

Typhoid perforation mainly affects the terminal 40 cm of the ileum in 72% - 78% of cases; the jejunum, caecum, colon and gallbladder are involved to lesser degree.[17] Pathological changes are not just restricted to perforation sites. The diseased gut is characterised by diffuse non-specific enterocolitis with hypertrophy, necrosis and ulceration of intestinal and mesenteric lymphatic tissue. This is the reason for mainly the terminal 60 cm of the ileum to be oedematous and friable.

Early surgery is the optimal treatment in typhoid perforations as it stops the source of further fecal contamination of the peritoneal cavity.[16] There are various surgical procedures but resection of the affected gut and anastomosis was carried out in this patient leading to satisfactory outcome.

CONCLUSION

Early recognition and adequate resuscitation followed by timely surgery along with appropriate antibiotics is important in the management of typhoid perforation. The most common site for typhoid perforation is ileum although perforations may also occur though less commonly in jejunum, caecum, colon and gallbladder. Not only the perforated site but the entire diseased gut is characterised by diffuse non-specific enterocolitis with hypertrophy, necrosis and ulceration of intestinal and mesenteric lymphatic tissue.

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REFERENCES

1. Chalya P, Mabula J, Koy M, Kataraihya J, Jaka H, Mshana S et al. Typhoid intestinal perforations at a University teaching hospital in Northwestern Tanzania: A surgical experience of 104 cases in a resource-limited setting. World J Emerg Surg. 2012;7(1):4.
2. Na'aya H, Eni U, Chama C. typhoid perforation in Maiduguri, Nigeria. Annals African Medicine. 2004;3(2):69-72.
3. Ahmed HN, Niaz MP, Amin MA, Khan MH, Parhar AB. Typhoid perforation still a common problem: situation in Pakistan in comparison to other countries of low human development. J Pak Med Assoc. 2006;56(5):230-2.
4. Sharma A, Sharma R, Sharma S, Sharma A, Soni D. Typhoid intestinal perforation: 24 perforations in one patient. Annals Medical Health Sci Res. 2013;3(5):41.
5. Bonatti H. Typhoid intestinal perforations: twenty-six year experience. Yearbook Surg. 2008;2008:140.
6. Ugochukwu A, Amu O, Nzegwu M. Ileal perforation due to typhoid fever review of operative management and outcome in an urban centre in Nigeria. Int J Surg. 2013;11(3):218-22.
7. Chang Y, Lin J, Huang Y. Typhoid colonic perforation in childhood:a ten-year experience. World J Surg. 2006;30(2):242-7.
8. Anupama PK, Ashok AC, Rudresh HK, Srikantaiah HC, Girish KS, Suhas KR. Mortality in typhoid intestinal perforation-a declining trend. J Clinical Diag Res. J Clinical Diag Res. 2013;7(9):1946-8.
9. Edino ST, Yakubu AA, Mohammed AZ, Abubakar IS. Prognostic factors in typhoid ileal perforation: a prospective study of 53 cases. J Am Med Asso. 2007;99:1043-5.
10. Jhobta RS, Attri AK, Kaushik R. Spectrum of perforation peritonitis in India-review of 504 consecutive cases. World J Emergency Surg. 2006;1:26.
11. Edino ST, Mohammed AZ, Uba AF, Sheshe AA, Anumah M, Ochicha O. Typhoid enteric perforation in North Western Nigeria. Nig J Med. 2004;13:345-9.
12. Elesha SO. Pathology and pathogenesis of typhoid fever. Nig P Med J. 1994;1:38-40.
13. Saxe J, Cropsey R. Is operative management effective in treatment of perforated typhoid? Am J Surg. 2005;189(3):342-4.
14. Nuhu A, Dahwa S, Hamza A. Operative management of typhoid ileal perforation in children. Afr J Paediatr Surg. 2010;7:9-13.
15. Malik MA, Laghari AA, Mallah Q. Different surgical options and ileostomy in typhoid perforation. World J Med Sci. 2006;1(2):112-6.
16. Ukwenya AY, Ahmed A. Progress in management of typhoid perforation. Annals African Medicine. 2011;10(4):259-65.
17. Ansari AG, Syed QHN, Ali AG, Abdul HJ, Altaf AT. Management of typhoid ileal perforations: a surgical experience of 44cases. Gomal J Med Sci. 2009;7(1):27-30.

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