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Typhoid Ulcer Perforation: A study in 50 cases

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Abstract: Perforation of ileum is a serious complication of typhoid enteric fever where mortality and morbidity is still high. Treatment of perforation is mainly surgical and varieties of surgical procedures are performed according to the pathological change at the perforated area. Early diagnosis and proper management ensure good results.

Typhoid ulcer perforation concerns the general surgeons here badly. We tried to highlight the usual method of diagnosis, management and result achieved in different hospitals of our locality. For that a retrospective study is made on materials of 50 typhoid ulcer perforation cases managed by our surgical team in different centers including BBMH, USTC since 1988 to 2006.

Age ranges from 16-70 years (paediatric patients are excluded). Adult from 25-40 years are predominating (30 cases, 60%). Male and female ratio is 45: 5 (9:1). Low income and rural people are 35 cases (70%). Presented as acute abdomen in emergency surgical department are 30 cases (60%). 20 cases were referred from the department of Medicine where they treated for pyrexia. Radiological evidence of pneumo-peritoneum was in 47 cases (94%). Surgical intervention was applied in 48 cases (96%) and 2 cases (4%) were treated conservatively. Repair of perforation with trimming of the margins were carried out in 44 cases (88%) and in other 2 cases (4%) simple repair and peritoneal toilet and drainage was performed. Post-operative wound infection was in 30 cases (60%). Post-operative pneumonia in 2 cases (4%), death in 1 case (2%), faecal fistula in 1 case (2%). Wound dehiscence and burst abdomen in 4 cases (8%) and incisional hernia in 2 cases (4%). Good post-operative hydration and combination of 3 antibiotics (Ciprofloxacin, Metronidazole and Ceftriaxone) showed better results. Re-laparotomy was needed in two cases (2%). Follow up was done in 20 cases.

Trimming of margin, repair, peritoneal toilet and drainage of the abdomen mainly deal Typhoid ulcer perforation here. This treatment showed good result. Number of referral cases from medical units is notable. Mistake and late diagnosis carry a higher risk of morbidity and mortality. Proper examination of the abdomen is always necessary. Ascaris lumbricoides may be found in the peritoneal cavity and bulk of greater omentum.

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Key Words: Typhoid ulcer perforation, fifty cases.

Introduction

Typhoid ulcer perforation is a serious complication of typhoid enteric fever where mortality and morbidity is still high [1,2]. Mistakes and delayed diagnosis, inappropriate and inadequate antibiotic therapy, poor nutrition, high virulence of the organism are considered to the cause of perforation. Many cases are picked out from the medical units where perforations occur in the course of the treatment for fever. Treatment of these patients are not only cost effective but also highly risky and laborious. Difference of opinion exists still in the method of management of these patients. So to understand the problem better necessity of more discussion on this subject needs no bound.

Material and Methods

A retrospective study is made on fifty typhoid ulcer perforation cases management documents. Our surgical teams from 1988 to 2006 managed the cases in USTC and different private clinics of Chittagong city. Age, sex, diagnostic criteria, treatment and its results etc. are properly analyzed and represented here. Follow-up up to 3 years was done in 20 cases.

Objectives

This study will certainly give us the idea about the particular group of population affected, methods of diagnosis and treatment and results achieved in different hospitals of our locality. This will not only increase the awareness of the surgeons regarding the problem but also stimulate them to formulate new ideas and plans for better management of this disease.

Analysis of the Results

Most of the people are from rural area and the periphery of the town where they get poor sanitation and health facilities. Age ranges from 16-70 years. Adult of 25-40 years are dominating (30 cases, 60%). 30 cases (60%) were admitted directly through emergency surgical department and 20 cases (40%) were picked up from the medical units where the patients were receiving conservative treatment for prolong pyrexia (? Typhoid, Malaria). Perforations of intestine were diagnosed on the basis of clinical picture and evidence of pneumo-peritoneum on plain X-ray abdomen in erect posture (48 cases, 96%). In one case perforation of distal ileum was detected only

after laparotomy done for peritonitis / pelvic abscess and toxic condition of the patient. Clinical presentation is represented in fig.-1. In one case perforation was detected on second laparotomy, first laparotomy was done for suspicious perforated acute appendicitis resulting in lower abdominal peritonitis. In all cases perforation were in the ileum. Pattern of perforations is shown in fig.- 2. Different types of surgical manipulations are represented in fig.- 3.

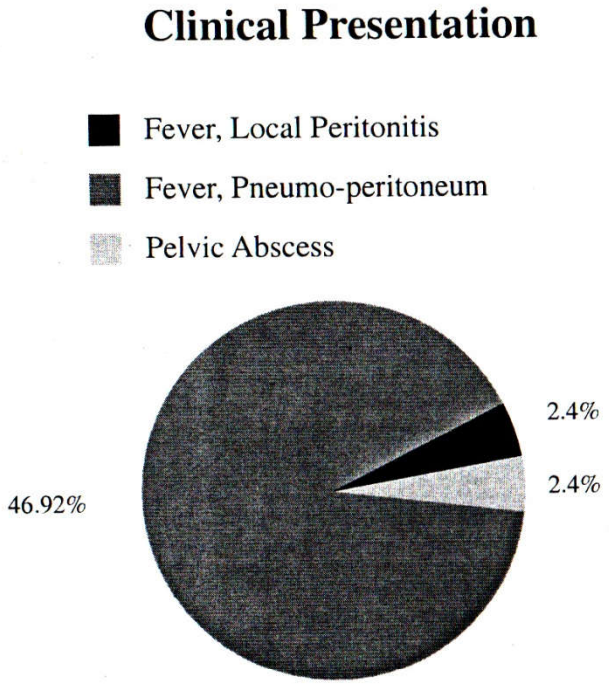


Figure: 1

In two cases where signs and symptoms of peritonitis were localized and minimum, conservative treatment showed positive results. Adequate hydration and combination of 3 antibiotics (ciprofloxacin, Metronidazole, Ceftriaxone) were as given in most of the patients. One patient of 35 yrs. died in first post-operative day due to multi-organ failure resulting from septic shock. Re-perforation was not noted in any case. Re-laparotomy was needed in two cases. Monthly, 2 monthly, 6 monthly follow-ups up to 3 years was done in 20 cases. Clinical, radiological and imaging techniques were applied rationally to assess the prognosis of these patients. Early and late results are represented in fig. 3 and 4.

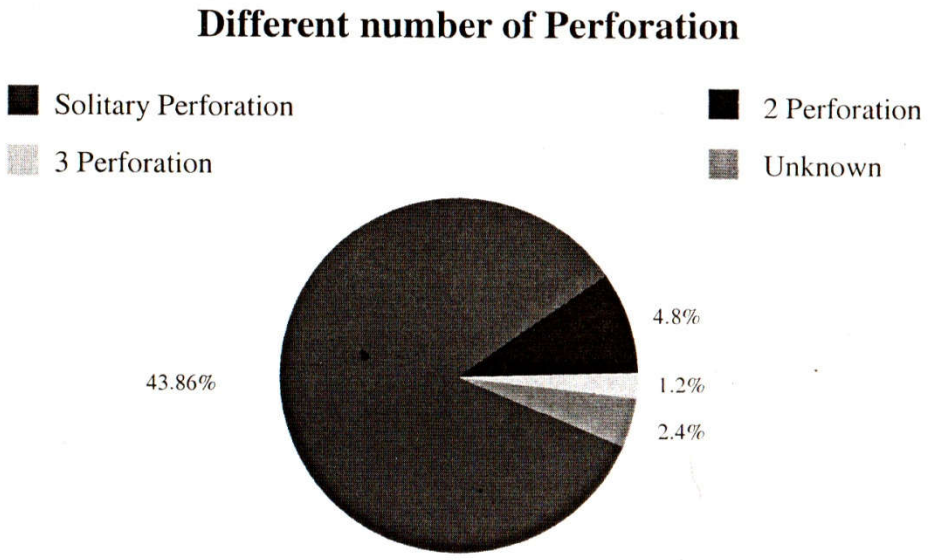


Figure: 2

Discussion

Typhoid fever (incubation period 10-14 days) is caused by Salmonella typhi, a flagellated gram-negative organism that enters the human body by faecal-oral route[3]. They cause proliferation of phagocytes, reticuloendothelial and lymphoid tissue of different organs. In the 2nd week swollen mucosa of payer's patches of ileum is shed and subsequently form ulcer having long axis towards the bowel flow. These ulcers are usually situated at 30-45 cm from ileo-caecal valve[4]. During the course of the disease at three weeks the ulcer may bleed and perforate causing peritonitis where chance of localization of infection by intestine and greater omentum is less[5]. Rate of perforation of typhoid fever cases is not well studied in our country. It is high in West-Africa (15-33%), very low in Cairo and Iran (1-3%)[5]. Diagnosis of perforation is mostly done clinically and on evidence of pneumoperitonium in plain X-ray abdomen. Mortality in perforation is up to 10%. In our study it is 2%. Mortality is related with late diagnosis, inappropriate therapy, late surgical intervention, old age, associated disease etc. Acute appendicitis, perforated peptic ulcer, acute pancreatitis, perforated ascariasis, pelvic infection etc are considered as differential diagnoses. Very rarely mistake may happen in the diagnosis and management of the patient. We are presenting such an example:

A young male X of about 25 was under the treatment in medical unit of

BBMH for 10 days having history of fever for 2 week and was under coverage of Ceftriaxone. At 14 days he developed sudden lower abdominal pain. On the same day he was consulted with surgeon. Plain X-ray abdomen was normal but ultrasonography report indicated acute appendicitis. Advice was given to continue conservative treatment keeping keen watch to the clinical condition of the patient. On the next day laparotomy was done on suspicion of perforated acute appendicitis. Vermiform appendix was swollen, congested and there was serous fluid in the abdomen. The surgical team was convinced to perform appendicectomy and drainage of peritoneal cavity. In the following morning through the abdominal drain bile stained fluid and flatus was coming continuously. On third post-operative day patient's condition deteriorated. Patient became toxic. Pulse becomes 120/m, B.P.100/70 mm of Hg; abdomen was hugely distended and there was generalized peritonitis. Through the drainage tube bile stained fluid was coming. Plain X-ray abdomen and chest showed gross pneumo-peritoneum and mild pleural effusion in right side. Diagnosis was perforation of gut causing generalised peritonitis. Abdomen was opened by mid midline incision and extended downwards. Abdomen was full of pus and faecal matter mainly in its right part and that was sucked out. Two perforations about 30 cm and 45 cm from the ileo-caecal valve were found at the anti-mesenteric border of ileum. The margins of these were trimmed and were closed in 2 layers by interrupted sutures. Thorough peritoneal toileting was done and abdomen was drained. The patient was cured with our big effort.

In the centre with good surgical facilities operative treatment is the treatment of choice, otherwise a conservative treatment consisting of intravenous fluid, nasogastric suction and chemotherapy may give success in 3/4th of the patients.

Perforation is usually single in 85% of cases[5] but may be multiple in some cases. In our study the picture is given in fig. 1. There are varieties of surgical options for treatment of perforation. Trimming of margin with closure of perforations in two layers, peritoneal toilet and drainage of abdomen is the commonest procedure employed [5,4] and shows good result. Resection of ileum with end-to-end anastomosis, ileo-transverse anastomosis etc. are also employed in some centers in special indications with gratifying results [6,7,2]. The procedures employed in our study are shown in fig. 3.

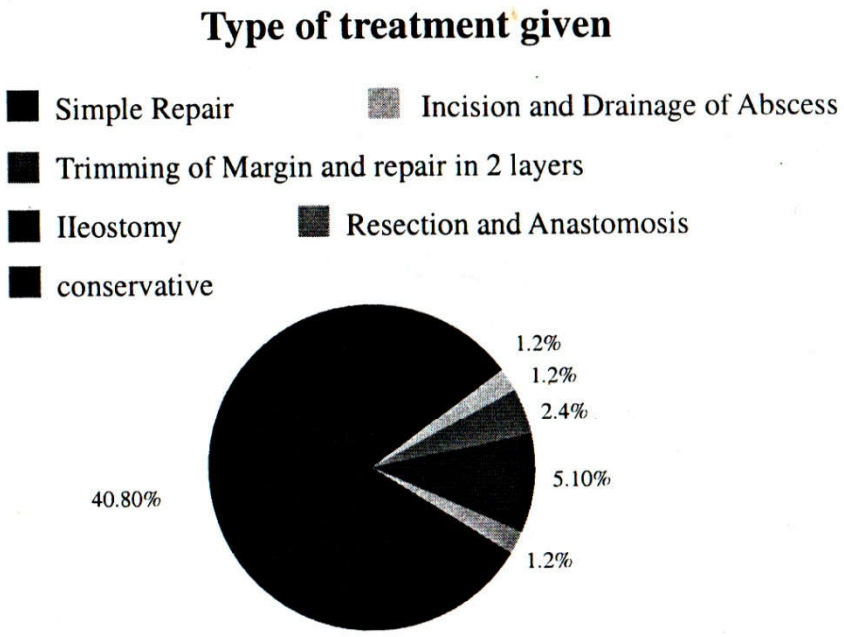


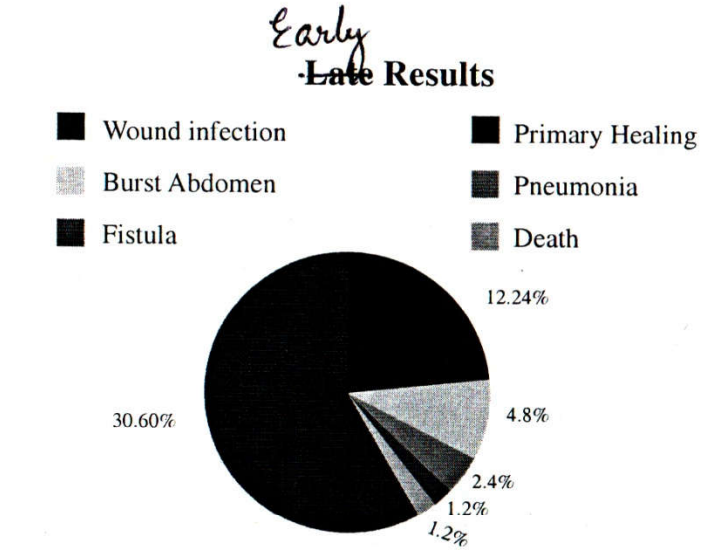
Figure: 3

Ileostomy is not usually practiced for this. A double-barreled Ileostomy some 20 cm proximal to ileo-caecal valve is done in uncontrolled bleeding site detection when selective superior mesenteric angiography is not available or not informative. A thorough abdominal examination is necessary to find out escaped AL in free peritoneal cavity and in the bulk of the greater omentum. In 5 cases we found 1-3 AL in free peritoneal cavity and in the bulk of greater omentum.

Surgical intervention in typhoid may be necessary in other indications like:

1. Abscess formation in the septicaemic stage.
2. Gangrenous typhoid cholecystitis.
3. Chronic carrier state that cannot be cured by antibiotic and especially where there is stone formation.

We performed cholecystectomy in such a case where there was associated stone formation. Good postoperative care is essential. Results are usually good. Wound infection is the main complication. Faecal fistula and reperforation are rare. Results treatment of our study is presented in fig.4&5



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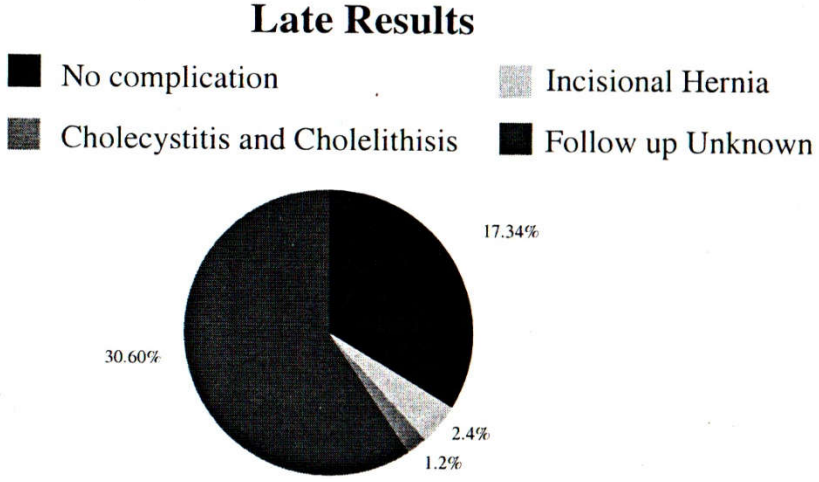

Figure: 5

Conclusion

Typhoid fever is common in our country and perforation is the serious complication of it where mortality and morbidity is still high.[8] surgical treatment of specific modality is always rewarding. Peritoneal cavity and omentum must be examined during surgical procedure to find out any escaped AL. Conservative treatment is employed in selective cases where there is leaking perforation and infection is limited. Carrier must be detected and properly managed. Ensuring supply of good water, sanitation, proper health care including vaccination of the people at risk may decrease the occurrence of the disease[9, 10,11]

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