ORIGINAL PROF-538

ILEAL PERFORATIONS ;
A REVIEW OF 74 CASES

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ABSTRACT

Typhoid fever is a major global health problem but enteric complications of typhoid fever are a major health hazards in the tropics. Though it affects many organ systems, intestinal perforation or GI hemorrhage are the major causes of fatality. **OBJECTIVES:** To point out the preventable aspects of the disease as to find out mortality and morbidity associated with it. To compare the results of various surgical choices. **DESIGN:** Prospective study. **PATIENTS & METHODS:** Records of 74 patients admitted to one surgical unit of DMCH during the period of January 1995 to December 1997 were reviewed. In 59 (79.73%) a final diagnosis of typhoid perforation were made on clinical ground supported by laboratory and radiological data. Histological examination of ulcer margins were done in all 74 cases but of lymph nodes on by occasionally. **RESULTS:** 30 patients (about 50%) reported between 3rd to 7th day of onset of pain and distension of abdomen. 32 patients reported 2 months after the initial symptoms. The diagnosis of perforation due to typhoid ulcer was in 59 patients (79.73%), tubercular ulcer in 8 patients (10.8%), Crohn's disease in 6 patients (8.1%), and traumatic rupture in one (1.3%). Fever and diffuse abdominal pain were common symptoms. X-ray evidence of pneumo-peritoneum was positive in 35 patients (47.3%). Only 31 patients (41.9%) showed un-eventful recovery. Others suffered from wound complications like hematoma, sepsis[1], discharge (4 patients), fecal fistula (2patients), wound disruption (16

patients), death (3patients). **CONCLUSIONS & SUGGESTIONS:** Late presentation to the hospital was directly related to the post-operative mortality and morbidity. Early identification and referral to hospital is likely to reduce mortality and morbidity significantly.

INTRODUCTION

Intestinal perforation is one of the commonly met surgical emergencies. These patients usually have long hospital stay because of the post-operative sequelae. Typhoid fever is a global health problem, more so in the tropics where lack of safe drinking water, poor sewage disposal and illiteracy add to the mortality and morbidity. These patients mostly had first aid treatment from "Village doctors" who did not have knowledge of such serious surgical complication of enteric fever.

OBJECTIVES

The aims of this study were to point out the preventable aspect of this disease, mortality and morbidity associated with it and to compare the results of surgery.

PATIENTS & METHODS

This study deals with 74 patients. Typhoid ulcer, intestinal tuberculosis, Crohn's disease and traumatic rupture were the cause of such perforations. In 79.93% patients Enteric fever was the offender.

A standard protocol was maintained for all of these patients in three years time from January '95 to December '97. The study was carried out in a surgical unit of Dhaka Medical College & Hospital (DMCH). The history, clinical examination and investigations, operation and other findings were recorded. The patients were randomly selected and included in the study.

There were 74 patients. The patients were operated under G.A. after resuscitation. Metronidazole and Ciprofloxacin injections were started after admission and clinical diagnosis. Simple repair with biopsy from ulcer margins was done in patients with single perforation. Resection and end to end anastomosis was done in 10 patients for multiple perforations. The specimens were biopsied. Right hemicolectomy in 3 patients and stricturoplasty with repair of perforation in one patient (and biopsy) was the surgical procedure in the four patients of intestinal tuberculosis. Ileostomy in two patients was done who had gross peritoneal soiling, marked congestion and oedema around the lesion and perforations near to ileo-caecal junction (table-6).

After 6 months follow up of the cases. The records (protocol) were analyzed.

RESULTS

The diagnosis was confirmed by histological examination and supported by clinical presentation and abdominal radiogram in all patients (Table-I).

Table 1 Causes of perforation (n=74)

Causes of perforation	No of patients	%age
Typhoid ulcer	59	79.70%
Intestinal tuberculosis	8	10.80%
Crohn's disease	6	8.10%
Traumatic rupture of intestine	1	1.35%

Age of the patients ranged between 13 to 65 years.

61 patients (80%) were below 40 years of age (Table-2).

Male patients were 55 and females were 19 [M:F 3:1]. The symptoms and signs are shown in Table-3. 60 patients (80%) presented with fever, six of them with fever over a month had intestinal tuberculosis as the cause of perforation.

Table 2 Age Incidence (n=74)

Age range (in years)	No of patients	Percentage
10-20	20	27.02%
21-30	18	24.32%
31-40	23	31.08%
41-50	8	10.80%
51-60	4	5.4%
>60	1	1.35%

Table 3. Clinical Features

Symptoms and signs	No of patients	Percentage
Pain abdomen	74	100%
Diffuse	71	95.95%
Localized in RIF	3	4.05%
Fever	60	81.08%
Vomiting	34	45.95%
Abdominal distension	21	28.34%
Nausea	13	17.57%
Loose motion	5	6.76%
Scanty micturition	6	8.11%
Constipation	8	10.81%
Blood stained diarrhoea	1	1.35%

Plain x-ray abdomen in erect posture revealed pneumo-peritoneum in 48 patients (64.9%) (Table-4). Five of these patients were diagnosed pre-operatively as burst appendix which proved perforation of ileum on laparotomy. Table-5 shows type of surgical procedures done. In all cases biopsy was done, which was actually the procedure of diagnosis in our set up.

Table 4. Radiological findings (n=74)

Finding	No of patients	Percentage
Pneumoperitoneum	45	60.81%
Multiple gas and fluid level	19	25.68%
Nonspecific	7	9.46%
Pneumoperitoneum with ileus	3	4.05%

Table 5. Type of surgical intervention (n=74)

Surgery	No of patients	Percentage
Simple repair with biopsy	58	78.35%
Resection and end to end anastomosis	10	13.51%
Rt. Hemicolectomy	3	4.05%
Stricturoplasty with repair of perforation	1	1.35%
Illeostomy	2	2.70%

Single perforation over ileum, at the anti-mesenteric border and at varying distance from ileo-caecal junction was found in 67 patients (90.54%).

Multiple perforations were seen in 7 patients (9.46%).

These patients reached hospital with considerable delay (Table-6).

Histologic diagnoses of TB and Crohn's disease did creates problems and presented as chronic granulomatous inflammation compatible with tuberculosis or Crohn's disease. Typhoid perforations showed evidence of erythro-phago-cytosis, infiltration of acute and chronic inflammatory cells. (Table-7).

Table 6. Time of attending the hospital

Delay	No of patients	%age
Within 24 hours	20	28%
Within 48 hours	17	22%
By 3rd day	18	24%
Between 4th-7th day	15	20%
After 7 days	2	3%
After 2months	2	3%

Table 7. (n=74)

Histologic picture*	No of patients	Percentage
Typhoid ulcer	59	79.73%
Tubercular ulcer	8	10.81%
Crohn's disease	6	8.11%

Traumatic perforation is not shown here (one case).

Table 9 (n=74)

Post-op sequelae	No of patients	Percentage
Haematoma/seroma	18	24.32%
Purulent wound discharge	4	5.41%
Partial wound disruption	16	21.62%
Faecal fistula	2	2.70%
Death	3	4.05%
Uneventful recovery	31	41.89%

Post-operatively 47 patients stayed in hospital for 1-2 weeks, 14 patients for 2-3 weeks, 5 patients for about 4 weeks and the five patients for more than one month. Post-operative sequelae is presented in Table-9. Less than 50% patients had uneventful recovery.

DISCUSSION

Pre-operative diagnosis of the cause of intestinal perforation is not difficult in majority of patients. In our series typhoid ulcer perforation topped the list, 79.7% followed by intestinal TB, Crohn's disease and traumatic perforation in that order 10.8%, 8.1% and 1.35%. In endemic areas the diagnosis of typhoid perforation is suspected from the clinical history of fever for few weeks, abdominal pain culminating the acute picture of enteric perforation. The diagnosis of tubercular ulcer perforation can be presumed from long history of fever, bowel habit alteration and more insidious onset of clinical features of peritonitis. Crohn's disease as the cause of perforation was not suspected in any of these patients pre-operatively and it is un common in the orient[1]. Our experience showed a 8.1% incidence of Crohn's disease. Crohn's disease very rarely cause true perforation[2]. Colonic diverticulitis is distinctly uncommon in the tropics[1].

A delay in diagnosis greater than 24 hours doubles

the mortality rate i.e. from 28% to 56%. 72% of our patients (Table-4) attended the hospital later than 24 hours of the onset of their symptoms.

Fever is an inconstant findings. 20% of the patients were afebrile at presentation Tenderness and rigidity of abdomen either diffuse or localized to right iliac fossa was present in all patients.

Digital rectal examination was abnormal either as an abnormal mass or tenderness in 25% of our patients.

60% of the perforations occurred in the 2nd and 3rd week of illness. In case of typhoid fever 3rd week is aptly called the week of complication[3].

Pneumoperitonium was seen in 60% of the patients. An upright x-ray abdomen including both domes of the diaphragm is a valuable adjunct to diagnosis.

The frequency of enteric perforation in typhoid fever ranges between 8% to 18%[5]. In typhoid perforation the omentum does not migrate to seal the rent, so the intestinal content continue to empty into the peritoneal cavity[1,6,7]. In contrast tubercular and Crohn's perforations are rarely true perforation[2].

Typhoid perforations are generally single, appear as punched out hole, parallel to the long axis, on the anti-mesenteric border[8,9], bowel around the perforation is very much friable[9]. TB show tubercles. Strictures and lymphadenopathy[2]. We found single perforation in 89% of our patients.

Decision to operate was made from the clinical findings helped by abdominal radiogram showed of pneumoperitonium in 60% (Table-5) of our patients. Other investigations like blood count, blood culture or widal test were not and could not be done in most of the patients.

Widal test and blood culture were not done routinely. Serologic and bacteriologic confirmation requires a delay of one to three days. Preparation for laparotomy should be done utilizing bacteriologic study as a post facto utilizing aid to subsequent management[1,10]. Huckstep pointed out Widal test may be negative in patients with typhoid fever. Blood may be sterilized with in an hour of administration of antibiotic and stool culture may not be positive until the third week of the illness. Widal test is more useful in confirming the diagnosis of typhoid fever. Enteric perforation is best managed surgically. Huckstep in 1960 recommended a non-operative approach. According to him contamination form these perforations were virtually sterile, few workers today agree with it[11]. All operative procedures reported have been followed by high complication rates. Choice of operation need to be based on the condition of the gut wall around the perforation, number and distance of perforations from the ileo-caecal valve and condition of the patient.

Our policy has been simple repair of single perforation, segmental resection and end to end anastomosis for multiple perforations and perforations with friable gut around it. Ileostomy was done in very frail patients having perforation close to ileo-caecal valves. (Table-6)

We have used ciprofloxacin and metronidazole intravenously as the drugs of choice in typhoid patients. One year anti-TB therapy was given to patients with histologically proven intestinal TB. Chloramphenicol has been used as a drug of choice for enteric fever in some series[1]. Case fatality in countries with well developed health service is less than 2%. In most developing countries despite the general availability of drugs, mortality rate of 4-32% have been reported. In our series mortality rate is 4%. All operative procedures reported have been followed by a high complication rate. Archampong reported a 52% incidence of wound sepsis[1]. We

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observed wound complication in over 50% of our patients (Table-9). Less than 45% showed uneventful recovery. 32% of the patients had a hospital stay over 2 weeks (Table-8).

Table 8. Hospital stay (N=74)

Duration	No of patients	Percentage
1-2 weeks	47	63.51%
2-3 weeks	14	18.92%
3-4 weeks	5	6.76%
>month	5	6.76%

CONCLUSION

Typhoid fever is a preventable disease. Complications of the disease are lethal. Surgeons in the developing countries will be confronted with typhoid perforations. Until it is prevented by proper sewage disposal and safe water supply.

Early recognition, prompt diagnosis and surgical interventions tailored to the findings at laparotomy would reduce mortality and morbidity.

Incidence of Crohn's perforation is no less, occurring in almost at equal proportion to tubercular ulcer perforation.

Illiteracy, malnutrition and delay in reporting to the hospital are important factors that add to the mortality and morbidity from these conditions.

The village doctors/quacks should be taught to encourage patients to attend hospital when they fail to understand the problem, because they are the doctors who first attend these patients and patients are also dependent on them.

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