SURGICAL TREATMENT OF TYPHOID ILEAL PERFORATIONS CHOICE OF OPERATION

Pages with reference to book, From 316 To 319

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Abstract

Over the past 3 years 52 patients with typhoid ileal perforation were treated surgically. Widal test was positive in all, and majority (42 cases) of the patients were males. Single perforation was often found in the last 20 cms of the ileum. Simple closure (31 cases) or closure with ileotransverse colostomy (21 cases) were the procedures of choice, resulting in 16.12% and 14.24% mortality in the two groups respectively (over all mortality 23.07%). A six fold increase in mortality was noted if the perforation/surgery were delayed beyond 72 hours (JPMA 38: 316, 1988).

INTRODUCTION

Terminal ileal perforation leading to generalised peritonitis is a fairly common emergency faced by the general Surgeons in tropical countries, where salmonellosis is endemic. This abdominal emergency is associated with consi-derable morbidity and mortality, inspite of all the advances in surgery and ancilhiary disçiplines.

Previously conservative treatment was recommended but currently early surgical intervention is advised. Due to this the mortality has significantly decreased. At our hospital, various procedures were adopted from simple closure of perforation to extensive resection of small and large bowel.

In the present study, patients with ileal perforation were treated with either simple closure or a simultaneous ileotransverse colostomy to see as to which procedure is best tolerated with minimal mortality in our setup.

PATIENTS AND METHODS

From January, 1984 to December 1987, 52 patients with ileal perforation were admitted in Rawalpindi General Hospital. The diagnosis was established by clinical features, laboratory investigations, operative finding and histopathology of the edges of perforation. Emphasis was laid on symptoms and signs of abdominal pain, fever, guarding, rigidity, distension, absent bowel sounds, fever, free fluid and obliteration of hepatic dullness. Investigations included Hb estimation, leucocyte count, serum electrolytes, blood urea and X-ray abdomen in erect posture. Positive widal test was considered diagnostic of typhoid infection. All the patients were stabilized prior to surgery and were operated under general anaesthesia. A right paramedian incision was made. Pus and intestinal contents were removed from the peritoneal cavity and peritoneal toilet was carried out with normal saline.

Patients were operated upon by different surgeons and the surgical procedure included:

(a) Simple closure following excision of edges of perforation;
(b) Closure with proximal ileo transverse colostomy;
(c) Resection with anastomosis and proximal ileo transverse colostomy;
(d) Resection and ileostomy and mucus fistula and Exteriorization of perforation.

Silk 2-0 was used for surgical repair. used in all the cases and abdomen in layers with vicrly number one. Post operatively ali the patients received parenteral chloramphenicol 500 mgx6 hourly for adults and 250-500 mgx6 hourly for children under 12 years of age for a period of 7-10 days. Other additional

antibiotics given were Gentamycine and Metronidazole.

Age and Sex

A total of 52 patients (41 males and 11 females) were operated upon. Ages of the patients ranged from 5½ years to 71 years, (Mean 25 years) with maximum frequency in 10- 30 years age group.

Signs and Symptoms

Acute generalized pain was present in all the cases while 85% complained of fever and vomiting. Constipation was present in 48% cases. On examination all cases had abdominal tenderness. Other signs included abdominal distension (92%), dehydration (85%), absent gut sounds (75%) and obliterated liver dullness in 58% cases.

Investigations

Widal test was positive in all the cases and was taken as confirmatory evidence if the titre was higher than 1:80. Blood and stool cultures were not done in any case. Total white cell count ranged between 4200 to 16000 cmm, and that of haemoglobin from 8.6 gm to 15 gms with an average of 10 gms%. Plain X-ray of the abdomen in erect posture was taken in all the patients, of them 38 (73%) showed gas under the diaphragm, 8 (1538%) revealed free fluid ileus.while 6 (11.53%) showed no abnormality. Histopathology of edges of perforation confirmed the diagnosis in 42 patients.

Operative Findings and Procedures

Generalised peritonitis was noted in all the cases. About 500 ml of pus was drained in 32 cases and a litre or more in 20 cases. The site of the perforation was located between 2.5 cm to 60 cm from ileocaecal junction. Last 20 cm of ileum was the commonest site of perforation (44 patients) while perforation beyond 20 cms was seen in 8 patients. Forty one (79%) cases had single perforation, 6 had 2, 3 had 3 and 2 had 6 perforations. The size of perforation ranged from 0.5 cm to 1.5 cm and they were situated on the antimesenteric border of the ileum. The threatening perforation was seen in ten patients which was closed in a single layer. The operative procedures adopted are shown in Table 1.

TABLE – I. Operative Procedures and Mortality.

Procedures	No	Deaths	Percentage
Simple Closure	31	5	16.12
Simple Closure+Ileotransverse Colostomy	7	1	14.28
Resection and Anastomosis+Proximal Ileotransverse Colostomy	6	2	33.3
Resection of Disease segment with Ileostomy and Mucus Fistula	3	1	33.3
Exteriorization of Perforation	5	12	60.00
Total	52	12	23.07

Simple closure was the commonest surgical procedure. The choice of operation did not have any correlation with the site or number of perforation, and was entirely the choice of surgeon.

Performation Operation Interval

Mortality increased with the delay in operation after perforation. When the operation was performed within 24 hours the mortality was 11% and delay of 48 hours or over, resulted ina mortality of more than 50% (Table II).

TABLE – II. Mortality in relation to Perforation/ Operation Interval.

*P/O Interval	No of Patients	Deaths	Mortality%
24 Hours	18	2	11
25–48 Hours	16	4	25
49–72 Hours	7	4	57.14
3 – 5 Days	3	2	66.66
Not Known	8	NIL	–
Total	52	12	–

* Perforation/Operation Interval

Morbidity and Mortality

Twelve (30.4%) patients died (Table III).

TABLE – III. Complications in 40 Survivors.

Complications	No of Patients	Percentage
Wound Sepsis	30	75
Bronchopneumonia	28	70
Faecal Fistula	6	15
Wound Dehescence	6	15
Sub-phrenic Abscess	1	2.5
Burst Abdomen	2	5
Intestinal Obstruction	1	2.5
Jaundice	1	2.5
Pelvic Abscess	2	5

The rate of post operative complications was high because more than 50% patients suffered from multiple complications. The commonest complications were wound sepsis (75%) and bronchopneumoma (70%). Formation of a faecal fistula, however, was the most dreaded complication with 100% mortality. Minimum mortality was found in simple closure (16.12%) and simple closure with ileotransversely colostomy which gave almost identical results (14.2%).

DISCUSSION

Typhoid ileal perforation is the commonest perforation seen in the tropical countries. It is more frequently seen in males with a male to female ratio of 3:1.

In the present study the perforation occurred during the second week and was preceded by a history of fever with an average duration of ten days, Abdominal pain was the commonest symptom', and tenderness the commonest sign. The frequency of abdominal tenderness varies from 74 to 100%[1-3] with a probable masking effect of extensive toxaemia causing lower incidence of tenderness. [3] Abdominal pain was reported in 81% cases in another study[4]. The findings of pneumoperitoneum in 73% cases and free fluid ileus in 1538% in the present study are similar to those reported by others. [5] Conservative treatment versus surgical treatment has remained a controversial subject in the past. Li[6] and Dickson[7] were the first to recommend surgical closure of perforation together r with evacuation of pus and faecal matter, toilet of peritoneal cavity and insertion of a drain. If perforation causes generalised peritonitis, surgery offers the best hope of survival. As 19% of the patients had multiple perforations therefore spontaneous closure seems unlikely in such cases and operative intervention is the only wayout for preventing persistent soiling of the peritoneum, which inevitably enhances the

toxaemia[1].

A number of surgical procedures have been described but majority of the surgeons recommend simple closure. However, new methods and modifications have also been suggested. Kala et al[8] recommended resection of the perforated ileum and end to site ileo transverse colostomy with burrying a distal stump in the caecal wall. He had a mortality of 20%. Lezarralde[9] recommended ileotransverse colostomy and a second operation several weeks later, for restoration of continuity by end to end ileostomy, but usually two procedures are resented by the patients.Molaney[10] treated 5 patients with tube ileostomy via perforation and recommended this procedure.

Peritoneal lavage with normal saline appears to minimise late intraperitoneal sepsis[5]. Post-operative peritoneal toilet with an inlet in the right hypochondrium and the outlet in the pouch of douglas has also been suggested'[11] The solution used for irrigation was dextran with 4 grams, of chioramphenicol per litre, together with one million international units of trasylol. They.. found that the mortality was significantly reduced (3.03%). However, morbidity was as high as 60%.

Our experience is that the majority of the patients suffer from a single perforation (80%) and that the primary closure is the best procedure. The edges of perforation should be widely excised and ileum closed with 00 silk in a single layer. Eutache and Kreis'[12] reported a mortality of 21% by this procedure. Vyas et al'[13] recommended omentopéxy. Where marked oedema and chances of leakage are present, proximal ileo transverse colostomy is advised to decompress the ileum. In the present study both the procedures gave ahnost identical results. Eggleston and Santshi[14] compared primary closure with closure plus ileo transverse colostomy, and. found no difference in mortality and morbidity in the two groups. Even if the perforations are multiple excision of edges and closure of perforation is the best and simplest procedure. Welch and Martin[15] recommended resection of a small length of bowel including diseased part and a two layer end to end anastomosis. Other surgical procedures have not produced encouraging results and therefore are not recommended.

The mortality of typhoid perforation can be further reduced if the operation is performed as early as possible after, perforation. Prolonged perforation-operation interval accentuates the toxaemia and brings electrolyte changes. Early diagnosis of perforation and treatment is hence mandatory. In our experience, any delay beyond 48 hours increases the mortality to over 50% and so is the experience of Kapoor et al[16]

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