MANAGEMENT OF TYPHOID ILEAL PERFORATION: A SURGICAL EXPERIENCE OF 44 CASES

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ABSTRACT

Background: Typhoid perforation of ileum is a serious complication of typhoid fever. There are different surgical methods of repairing the perforation. The aim of this study was to report the surgical experience regarding treatment of typhoid ileal perforation in our setup.

Material & Methods: It was a retrospective, observational study carried out at Departments of Surgery Unit I and Pathology, Peoples Medical College and Hospital Nawabshah from July 2003 to June 2008. Forty-four patients were admitted through casualty as cases of acute abdomen, 28 (63.63%) were males and 16 (36.36%) females, with age range of 10-45 years. The diagnosis of typhoid perforation was made on clinical grounds, laboratory investigations, x-ray, ultrasound examination, and operative findings. Exploratory laparotomy was carried out and perforations were managed. The variables studied in the post operative period were wound infection, wound dehiscence, entero-cutaneous fistula, residual abscess, mortality, hospital stay and incisional hernia.

Results: Fever with abdominal pain and distension were the symptoms in all subjects followed by diarrhoea, vomiting and constipation. Widal test more than 1:320 was positive in 35 (79.45%) cases and typhi dot (IgM in all cases and IgG in 15) was positive in all cases. Blood culture was positive in 32 (72.7%) cases. X-ray abdomen revealed pneumoperitoneum in 22 (50%) cases. Ultrasound shows free peritoneal collection in 40 (90.90%) cases. On operation the abdominal cavity was heavily contaminated in 12 (27.27%) patients while in 32 (72.72%) patients the peritoneal cavity was having moderate contamination. 36 (81.81%) patients had single perforation & 8 (18.18%) patients had more than one perforation. In 32 (72.72%) patients perforations after freshening the ulcer were closed by single layered interrupted extra mucosal technique with vicryle 2/0, 4 (9.09%) needed resection & anastomosis & in remaining 8 (18.18%) loop ileostomy was made.

Conclusion: The typhoid ileal perforation still carries high morbidity and mortality. The typhoid ileal perforation should always be treated surgically. There are many operative techniques to deal typhoid ileal perforation but no one is fool proof. Regardless of the operative technique timely surgery within 24 hours with adequate and aggressive resuscitation is a way to decrease the morbidity and mortality.

Key words: Typhoid Fever, Ileal Perforation, Acute Abdomen.

INTRODUCTION

Typhoid fever is a protracted disease that includes bacteremic phase with fever and chills during the first week, wide spread reticuloendothelial involvement with rash, abdominal pain and prostration in the second week, and ulceration of Payer’s patches with intestinal bleeding and perforation during the third week. It is caused by salmonella typhi. There are longitudinal ulcers on antimesenteric border, situated within 45 cms of ileocaecal valve in majority of patients. Typhoid is endemic in many developing countries, where disease occurs throughout the year. The most lethal complications of typhoid fever are intestinal bleeding and ileal perforations, both arising from necrosis of Peyer’s patches in the terminal ileum. Typhoid perforation of ileum is a serious complication of typhoid fever. It is also a challenging surgical emergency in developing countries. The resulting peritonitis in such a seriously ill patient may be rapidly fatal unless it is treated promptly and vigorously. Initially 100% death rate was reported for the perforation. Nowadays, the mortality rate although decreasing, still remains very high ranging from 1 to 39% with significant morbidity inspite of therapeutic progress. Surgery although associated with a high morbidity and mortality, offers the greatest hope of survival. There are different surgical methods of repairing the perforation. Primary closure, excision and closure, resection and anastomosis are some of the techniques. The postoperative complications are many including wound sepsis, residual intra-abdominal abscesses, wound dehiscence, faecal fistula and death.

Keeping the above facts in view, in this study we report the surgical experience regarding treatment of typhoid ileal perforation in our setup.
PATIENTS AND METHODS

This retrospective, observational study was conducted in the Departments of Surgery Unit-I and Pathology, Peoples Medical College, Nawabshah, during July 2003 and June 2008.

The data of each patient was collected on a proforma designed for this study, including demographic details, clinical features, past medical history, interval between onset of symptoms and hospital admission, operative findings, procedure performed, postoperative complications and duration of stay in hospital. The patients included in the study were either typhi dot and/or blood culture positive.

All the admissions were carried out through causality as cases of acute abdomen and were resuscitated with intravenous fluids, nasogastric tube to decompress the stomach and urethral catheter to monitor urine output. Adequate resuscitation was achieved within 6-10 hours of admission in 90.7% of patients. Intravenous antibiotics comprising quinolones, gentamycin and metronidazole were commenced immediately, the investigations carried out were blood complete picture, ESR, widal test, typhi dot, blood culture, blood urea, blood sugar, serum electrolytes, abdominal & chest radiographs and abdomino-pelvic ultrasound. The diagnosis of typhoid perforation was made by above investigations and on clinical grounds of abdominal pain, distension, tenderness, and buttressed by x-ray findings of pneumoperitoneum or air under the diaphragm. Also, diagnosis was further supported by operative findings of ileal perforation, and on clinical grounds of abdominal pain, distension, tenderness, and buttressed by x-ray findings of pneumoperitoneum or air under the diaphragm. After resuscitation all patients under full general anaesthesia were subjected to exploratory laparotomy within 24 hours. Laparotomy was performed by a midline incision, all dirty yellow purulent material was aspirated from peritoneal cavity. General survey of peritoneal cavity was made. After dealing with perforation the peritoneal cavity was thoroughly washed with copious amount of normal saline and drains were kept in pelvis. General survey of peritoneal cavity was made. After dealing with perforation the peritoneal cavity was thoroughly washed with copious amount of normal saline and drains were kept in pelvis. Abdomen was closed by mass closure technique with prolene size 1 and skin was closed with interrupted silk. Post-operatively patients were kept nil orally till return of bowel sounds and at that time nasogastric tubes were removed. IV antibiotics were used for one week. Drains were removed on 6th post operative day. The variables studied in the post-operative period were wound infection, wound dehiscence, enterocutaneous fistula, residual abscess, mortality, hospital stay and incisional hernia.

RESULTS

Forty-four patients underwent surgery for typhoid ileal perforation during the study period. They included 28 (63.63%) males and 16 (36.36%) females with having ages range of 10 to 45 years (Mean 29.36 years). Majority of patients were in the 2nd and 3rd decades. (Table-1)

Fever with abdominal pain and distension were the symptoms in all subjects followed by diarrhoea, vomiting and constipation in 5 (11.36%), 12 (27.27%) and 4 (9.09%) patients respectively. (Table-03). Mean duration of fever before presentation was 8 days (Range 3-14 days). Mean duration of abdominal pain was 5.6 days (Range 2-11 days). Mean temperature was 101.3°F (Range 99.5-103°F). Pulse rate ranged between 108-140 beats per minute with a mean pulse rate of 116. Widal test ≥ 1:320 was positive in 35 (79.45%) cases and typhi dot (IgM in all cases and IgG in 15) was positive in all cases. Blood culture was positive in 32 (72.7%) cases. X-ray abdomen revealed pneumoperitoneum in 22 (50%) cases. Ultrasound detected free peritoneal collection in 40 (90.90%) cases, hypokalaemia was found in 8 (18.18%) cases. Blood complete picture revealed leucopenia in 13 (29.54%) leucytosis in 4 (9.09%) patients while total leucocyte count was normal in 27 (61.36%) patients with raised ESR ranging from 48 to 74 mm of Hg in the first hour. (Table-2)

Operative findings were; abdominal cavity heavily contaminated in 12 (27.27%) patients while in 32 (72.72%) patients the peritoneal cavity was found in a comparatively better condition. 36

Table-1: Age distribution of patients.

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-20</td>
<td>11 (25.0)</td>
</tr>
<tr>
<td>21-30</td>
<td>20 (45.4)</td>
</tr>
<tr>
<td>31-40</td>
<td>05 (11.4)</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>08 (18.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44 (100)</strong></td>
</tr>
</tbody>
</table>

Table-2: Clinical features of patients with typhoid ileal perforation.

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Number of Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>44 (100.0)</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>44 (100.0)</td>
</tr>
<tr>
<td>Abdominal distension</td>
<td>44 (100.0)</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>05 (11.4)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>12 (27.3)</td>
</tr>
<tr>
<td>Constipation</td>
<td>04 (09.1)</td>
</tr>
</tbody>
</table>
In all cases perforations were within the last 60 cm of ileum.

Perforations were surgically treated depending upon the number of perforations, general health status of patient and degree of faecal contamination. In 32 (72.72%) patients perforations after freshening the ulcer were closed by single layered interrupted extra-mucosal technique with vicryle 2/0, 4 (9.09%) needed resection & anastomosis and in the remaining 8 (18.18%) loop ileostomy was made.

The complications were wound infection in 30 patients (68.18%), wound dehiscence in 12 patients (27.27%), and intra-abdominal abscess in 4 patients (9.09%), entero-cutaneous fistula in 6 patients (13.36%). In this series there were 6 (13.36%) deaths. Sixteen (36.36%) patients developed incisional hernia. In 8 patients, in whom loop ileostomy was made stoma related complications like incisional hernia. In 8 patients, in whom loop ileostomy was made stoma related complications like incisional hernia. In 8 patients, in whom loop ileostomy was made stoma related complications like incisional hernia. In 8 patients, in whom loop ileostomy was made stoma related complications like incisional hernia.

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number of Patient (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound Infection</td>
<td>30 (68.2)</td>
</tr>
<tr>
<td>Incisional Hernia</td>
<td>16 (36.4)</td>
</tr>
<tr>
<td>Wound Dehiscence</td>
<td>12 (27.3)</td>
</tr>
<tr>
<td>Enterocutaneous Fistulae</td>
<td>06 (13.4)</td>
</tr>
<tr>
<td>Intra Abdominal Abscess</td>
<td>04 (09.1)</td>
</tr>
</tbody>
</table>

Table-3: Post-operative complications.

In our study we found wound infection in 30 (68.18%) patients this similar to a Nigerian study. Wound dehiscence was noted in 12 (27.27%) patients, this figure is also near to previous report, 6 our 6 patients (13.36%) developed enterocutaneous fistula this figure is near to figure as reported by Sachan Talwar. Of the entire postoperative complications faecal fistula remains most threatening. Reasons may be dehiscence of anastomotic or primary repair, synchronous impending perforation that has been missed at the time of initial surgery or development of metachronous perforation of diseased ileum during postoperative period. In this series there were 6 (13.36%) deaths this within range as quoted by Noorani. In our series 66.66% (4 out of 6) deaths were due to faecal fistula. Temporary ileostomy has the advantage of avoiding any intestinal suture in septic tissues and the subsequent risk of postoperative dehiscence of anas-
tomosis or repair that is associated with a high
mortality rate. Unfortunately, the management of
stoma remains difficult in developing countries
because of the shortage of suitable equipment in
this respect, peristomal ulceration remains a ma-
jor problem. Indeed, peristomal ulceration pro-
vides skin pain, inducing the patient to self-limi-
tation of food intake. This can result in malnutri-
tion, cachexy and death. In this study 2 (33.33%)
deaths were due to this complication as that is of
Nouyen.20 Intra abdominal abscess was noted in
4 patients (9.09%) and 16 (36.36%) patients de-
veloped incisional hernia this is near to Nigerian
studies.16,18

CONCLUSION

Typhoid ileal perforation still carries high mor-
bidity and mortality. The typhoid ileal perforation
should always be treated surgically. There are
many operative techniques to deal typhoid ileal
perforation but no one is without complications.
Regardless of the operative technique timely sur-
gery within 24 hours with adequate and aggres-
sive resuscitation is a way to decrease the mor-
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