

The procedure is quick relatively blood less and simple.

15% (12 patients) in our series died because of various complications however mortality rate is variable 62%⁹, 32%⁷, 18%¹⁰, 9.9%¹², 18%¹⁰.

Mortality rate increases if patient presents late, in our series Patients who presented late after 72 hours, mortality was 100%.

Only prompt recognition and urgent surgical intervention will improve the results of typhoid perforation.

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Table # 3
Duration of Hospital Stay

Duration	No. of Pts.	Percentage
7-14 day	12	15%
2-3 weeks	48	60%
3-4 weeks	10	12.5%
4-6 weeks	10	12.5%

Discussion

Enteric fever produces hyperplasia of Reticulo endothelial system with necrosis and ulceration of the gut usually limited to terminal ileum with occasional involvement of jejunum and caecum. Caecal ulcers are usually smaller than ileal and they rarely perforate^{1,2}. The number and size of ulcers does not co-relate with the severity of clinical symptoms⁴. Typical feature of these ulcers is that they produce no peritoneal reaction before perforation and even after perforation, such ulcers are rarely found to be sealed off at operation^{5,12}. In contradistinction to other perforations omentum does not migrate to the perforation site, therefore the intestinal contents are continuously poured into peritoneal cavity.

The typhoid perforation appears as "punched out" holes on the anti-mesentric border of the bowel.

Huck Step⁹ and Olurin et al¹⁴ claim that bowel around perforation is friable although sutures hold well but healing is impaired and complications are common.

Typhoid perforation is rare under the age of 5 years and over 50 years.^{3,9,13} 70% of our patients were in second and third decades of life and males predominate in a ratio of 7:1. The same ratio is seen in other studies^{3,13}.

Perforation may be accompanied by a sudden

sharp pain or increase in the abdominal symptoms associated with vomiting, distension and constipation. However in patients with prolonged illness the symptoms may be subtle and exact time of perforation difficult to determine⁸. Abdominal tenderness and toxemia are constant findings. X-ray abdomen may reveal pneumo-peritoneum in about 50% of these cases⁵. In our study 60% of patients had pneumo-peritoneum.

Som workers recommend non operative approach for enteric perforation⁹ as claimed by them as virtually sterile perforations, other suggest to avoid surgery in late cases¹³.

The operative findings in our patients compel us to consider surgery as mandatory, all patients had open perforation, gangrene in 4 cases and culture was positive in 90% of the case though patients received pre-operative antibiotics.

In addition to an adequate peritoneal toilet, correct management of perforation is essential. Because of the high incidence of post operative complications a wide variety of operative procedures have been performed, like simple closure of perforation^{2,4,16}, local wedge resection of ulcer¹⁶, purse string closure¹, resection of affected ileum^{12,16}, right hemicolectomy¹⁶, side to side ileo-transverse colostomy, temporary ileostomy, and ileostomy through perforation¹¹.

All operative procedures are followed by high complication rate. Archampong² had 52% incidence of wound sepsis. Massive peritonitis + poor resistance is obvious cause of it. We observed wound sepsis in 45% of the cases.

The ideal procedure for the perforation should be one which should be quick and relatively bloodless.

Since the incidence of complications is almost same in all types of procedures we have performed simple closure of perforation after freshening the edges of the perforation.

diaphragm.

T.L.C.: Varied from 2200 to 18000 per cubic millimeter with mean count of 6400. Twelve patients (15%) had a count less than 4000/cmm. While 68 patients (85%) had a count above 10,000/cmm.

Blood was cultured in 24 cases and was positive in 6 cases S-typhi was cultured in 4 cases and 2 had E. coli. Widal test was positive in 64 cases (80%). Biopsy of perforation was performed in 32 cases (40%), it was reported "as compatible with typhoid perforation" in 24 patients (75%).

Treatment

Intensive re-suscitation was carried out as rapidly as possible to prepare these patients for operation without any delay and laparotomy was done in 78 patients. While 2 patients were in moribund condition and intubation of peritoneal cavity was performed under local anaesthesia, both of them died after 4-6 hours as they did not recover from irreversible shock.

Operative Findings and Procedure

All patients had peritonitis, faecal peritonitis was seen in 20 patients (25%). Peritoneal culture was done in 40 cases (50%) and it was positive in 36 cases (90%), E.coli in 29 cases, Klebsiella in 6 cases, proteus in 1 case and S-typhi was not cultured in any case. All patients had open perforations solitary in 72 cases, 2 had two perforations and 4 had gangrenous changes in the affected bowel alongwith perforation of caecum in 2. All perforations were on the anti-mesentric border of the ileum, 80% of these perforations were within 25cms of terminal ileum. Simple closure of perforation in 2 layers after freshening the edge was done in 74 cases while in 4 cases right hemicolectomy was done because of multiple perforations and gangrenous changes in the affected bowel.

Complications

Fifty six patients (70%) had one or more complications. Wound infection was the commonest complication observed in 36 patients (45%), 4 patients had uraemia which proved fatal in 3 cases. 12 patients had late complications of these six (7.5%) had sub-acute intestinal obstruction and were managed conservatively, 4 had incisional hernia, 2 came back with faecal fistula which settled on conservative treatment (Table-2).

Table # 2
Postoperative Complications

Postoperative complications	No. of Pts.	Percentage
1. Wound infection & dehiscence	36	45%
2. Faecal fistula	2	2.5%
3. Chest infection	8	10%
4. Septaemia	6	7.5%
5. Intra-peritoneal abscesses	2	2.5%
6. Uraemia	4	5%
7. Multiple organ failure	2	2.5%
8. No complication	24	30%

Mortality

Twelve patients (15%) died including 2 patients who died after intubation without undergoing laparotomy. The cause of death in 3 patients was uraemia, five patients were in septaemia, 2 had chest infection and 2 multiple organ failure.

Hospital Stay

Mean duration of postoperative hospitalization in surviving patients was 24 days. 48 patients remained hospitalized for 2-3 weeks (Table-3)

INTESTINAL PERFORATION EXPERIENCE IN 80 CASES

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Abstract

Eighty patients ranging from 10-60 years were treated for Intestinal perforation.

Seventy one (89%) were males. Mortality rate was 15%, and was influenced by duration of illness, duration of perforation, shock, uraemia and faecal peritonitis. Seventy four patients were treated by simple closure of perforation, four required right hemicolectomy and two were in terminal stage and were intubated under local anaesthesia. 56 patients (70%) had post-operative complications.

Key-Words: Intestinal Perforation, typhoid perforation, enteric perforation, perforation.

Introduction

Enteric fever continues to be a major problem in the third world countries. The introduction of new generation of quinolones has resulted in the decrease of morbidity and mortality rate. Early diagnosis and prompt surgical intervention is mandatory to minimize the incidence of morbidity and mortality in perforations.

Material and Methods

80 patients with acute abdomen were admitted in the department of surgery unit-II Liaquat Medical College Hospital Hyderabad from January 1989 to December, 1991. The criteria of inclusion being isolation of Salmonella from blood or stool, positive Widal's test or typical operative findings in conjunction with histopathological findings.

Results

1 Age and Sex: Youngest patient was ten years old and oldest was 60 years old with peak incidence in second and third decades (70%). 89% were males (Table-1).

Table # 1
Age & Sex

S. No.	Year	Male	%	Female	%	Total	%
1.	0-10	1	1.25	0	0	1	1.25
2.	11-20	14	17.5	4	5	18	22.5
3.	21-30	35	43.75	3	3.75	38	47.5
4.	31-40	12	15	1	1.25	13	16.25
5.	41-50	7	8.75	1	1.25	8	10
6.	51-60	2	2.5	0	0	2	2.5
Total		71	89	9	11	80	100

2. Presenting features: Majority of patients presented with fever and malaise along with bowel symptoms. They had noted sudden increase in abdominal pain associated with vomiting and distension of abdomen at the time of perforation. However ten patients (12.5%) were unaware of severe symptoms of perforation. On clinical examination all patients had abdominal rigidity, hyper-resonance was present over liver in 70% patients, paralytic ileus in 80% of the cases and 2 patients were in shock.

3. Laboratory investigations: Forty eight patients (60%) had free gas under the right dome of

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