

# **TYPHOID (ILEAL) PERFORATION**

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## **ABSTRACT:**

One hundred and thirty cases over a period of five years are included in this study. Duration of the disease, duration of perforation, age, sex and various surgical treatments are analysed. Prognostic factors and causes of mortality and morbidity are discussed. Minimum surgical intervention is preferred, as mortality is increased in extensive surgical procedure, in already sick and toxic patients.

## **INTRODUCTION:**

In our part of Pakistan, North West Frontier Province, the incidence of typhoid fever has been reduced, but not eliminated, by recent improvement in water supply and public health facilities. Despite these facilities, at times we still have occurrences of water supply contamination. Prophylactic vaccines have been introduced, but are not compulsory.

The management of typhoid perforation has been a subject of controversy. Operation has been generally accepted as a treatment of choice, but the purpose and choice of operation continues to be debated.

This study reviews 130 patients with enteric perforation and analyses the choice of operation and prognostic features.

## **MATERIALS AND METHODS**

130 patients operated upon for Ileal Perforation at DHQ Hospital, Abbottabad, over a period of five years were studied. The clinical history, clinical findings and pre-operative findings were analysed.

The duration of disease was estimated by ascertaining when first symptom had appeared and duration of perforation when abdominal symptoms had appeared.

Pre operatively, adequate resuscitative measures were taken including hydration, blood transfusion and intravenous administration of chloramphenicol.

Operative findings were noted and biopsy was taken. When ascaris worms were seen lying freely in the peritoneal cavity, stool and peritoneal fluid were cultured for salmonella and shigella, to ascertain whether the perforation was due to ascaris or typhoid.

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All<sup>8</sup> patients had peritoneal lavage with copious saline and irrigation of the peritoneal cavity after surgical procedure.

Broadly speaking all patients with headache, high continuous fever of some days duration and associated abdominal symptoms were presumed to be suffering from enteric fever even if the confirmatory investigations were not available.

## RESULTS:

### AGE AND SEX:

Majority of the patients (114) were aged 11-40 years. There were 120 male and 10 female patients.

Thus typhoid perforation occurs predominantly in males in a relatively younger age, see Table-1

Age in years	Male	Female	Total
05-10	03	00	03
11-20	49	03	52
21-30	41	04	45
31-40	15	02	17
41-50	09	01	10
51-60	03	00	03

### SEASONAL INCIDENCE:

Typhoid Fever in this series reached its peak in July every year. Days of this month are closely related to the climatic condition at the height of dry season with subsequent concentration of infecting organism.

### DIAGNOSIS:

The presenting symptoms and signs as recorded in Table-II were abdominal, pain, fever, abdominal rigidity, abdominal tenderness, absent bowel sounds, abdominal distension and absent liver dullness. Sec Table II.

**Table II: SYMPTOMS AND SIGNS**

Symptom/Sign	No. of Pts	Percentage
Abdominal Pain	130	100
Fever	127	98
Abdominal Rigidity	124	96
Abdominal Tenderness	122	94

Absent Bowel Sounds	119	92
Abdominal Distension	117	90
Absent Liver Dullness	78	60

The investigations carried out were culture of blood, stool and peritoneal fluid; Widal test was also carried out. The number of patients with positive result is shown in Table III.

**Table III: LABORATORY INVESTIGATION**

Investigation	Positive	Negative	Not Done
Blood Culture	75	32	23
Stool Culture	31	12	87
Peritoneal - Fluid Culture	52	21	27
Widal Test	101	29	-
Histology	60	14	56

Typhoid is usually associated with leukopenia. In our study total count remained between 6,500 - 8,200/cmm.

Histopathological examination was typical of typhoid<sup>8</sup> inflammation (infiltration with monocytes, lymphocytes and plasma cells) in 60 patients.

### **RADIOLOGICAL FINDINGS:**

All these patients had generalised feculent peritonitis with varying amount of thin pale-yellow peritoneal fluid. Loops of small bowel<sup>1</sup> were adherent as a consequence of fibrinous exudate. These were easy to separate and perforations were easy to find. Perforations were in the distal ileum, about 60 cm from the ileocecal junction.

### **OPERATIVE PROCEDURES:**

All resuscitative measures were taken preoperatively. Dehydrated and oliguric patients were well hydrated. Blood urea and electrolytes were balanced<sup>4</sup>. In severe toxic collapsed patients (33/130) corticosteroids<sup>6</sup> were used.

Simple closure of the perforation in two layers<sup>2</sup>, without using an omental patch, was done in 90 patients. Wedge resection of the ulcerated area was done in ten patients. In 25 patients, in whom the ileum was ragged and there were multiple perforations, resection and end to end anastomosis was done. In five severely toxic ill patients, through a small incision, peritoneal drainage was done. See Table-IV.

**Table IV: SURGICAL PROCEDURES**

Surgical procedure	Total	Survived	%	Died	%
Suturing of Perforation	90	75	83	15	17
Wedge Resection	10	08	80	02	20
Resection and end to end anastomosis	25	15	60	01	40
Peritoneal Drainage	05	01	20	04	80

## MORTALITY

The mortality rate in this study was 23.84%. 31 patients died out of 130 cases, (see Table-V(a)). Mostly these patients died due to septicemia. Age had no relationship to death of patient, see Table-V(b)

**Table – V (a) MORTALITY**

Total Number of Cases	130
Deaths	-
Percentage	23.8%

**Table-V (b): TOTAL NUMBER OF DEATHS AND THEIR AGE DISTRIBUTION**

Age in years	Patients	Deaths	Percentage
05-10	03	00	00
11-20	52	14	27
21-30	45	08	17
31-40	17	05	29
41 & above	13	04	33

## POST OPERATIVE COMPLICATIONS:

Infection of the wound occurred in 32 patients. Out of these, seven required secondary suturing of the wound two weeks post-operatively.

**Table – VI: POST OPERATIVE COMPLICATIONS**

Wound Infection	32
Faecal Fistula	12
Intra-Abdominal Abscess	11
Burst Abdomen	07
Intestinal Obstruction	04
Incisional Hernia	04

Residual intra-peritoneal abscesses, in 11 patients, were drained. They were mostly pelvic or interloop abscesses.

Abdominal wound dehiscence, in seven patients, occurred between seventh and tenth post-operative day. Four patients went into intestinal obstruction, between the tenth and twelfth day of operation.

Incisional hernia was seen in four patients. It was repaired six months after the discharge of patient from the hospital. Twelve patients developed faecal fistula, who were treated conservatively.

### **PROGNOSTIC FACTORS:**

We found the following factors to favor the prognosis. Early diagnosis, timely and intensive resuscitation, blood transfusion, surgical rather than supportive therapy, early rather than late or delayed surgery, simple rather than radical procedure, single rather than multiple perforations, peritoneal lavage in seriously ill patients and use of metronidazole in addition to chloramphenicol.

### **DISCUSSION:**

Typhoid perforation usually occurs in the terminal ileum about 60 cm from the ileocecal junction. Occasionally more than one perforation may be present. Mortality rate was high in patients with more than one perforation.

Most of the patients presented with a week to two weeks' history of fever, headache, malaise, diarrhoea or constipation<sup>3</sup> usually prior to abdominal pain. Two patients had profuse rectal bleeding, in whom multiple unperforated ulcers were present. There is no doubt that bleeding per rectum worsens the prognosis. This is because of the haemorrhagic shock superimposed on septicemia.

The treatment of uncomplicated typhoid is medical, but once perforation has occurred, surgical intervention becomes mandatory. The sooner it is done, the greater is the chance of survival.

Walling off of the perforated area, by the omentum does not occur, as it happens in perforated duodenal ulcer or appendix. Usually a few adjacent loops of bowel can be seen, held together with a yellowish-green fibrinous exudate. This is a natural physiological attempt to wall off the typhoid perforation. Usually it is easy to locate the perforation. Multiple small bowel loops arc held together by fibrinous adhesions. These enclose abscess pockets, along with subphrenic and pelvic abscesses. Radiograph of the abdomen may reveal bowel obstruction, peritonitis or pneumo-peritoneum. Free air is not present immediately but longer the time lapse after perforation greater

is the chance of pneumo-peritoneum.

In addition to performing early surgery, suspected perforation should be treated with massive doses of chloramphenicol. Our regime is 500 mg. intravenously, six hourly for ten days. In our experience, it has got no severe untoward effects. Administration of metronidazole, as an intravenous infusion of 500 mg. eight hourly, for three days was also included in our regime.

Adequate resuscitative measures must be taken to prepare the patient for surgery. In severely toxic patients, with unrecordable blood pressure, massive doses of corticosteroids have been used (ten times the normal dose), but only for 24 — 48 hours.

## **CONCLUSION:**

The treatment preferred for typhoid ileal perforation is surgery. The sooner it is done, the greater is the chance of survival. The operation of choice is excision and closure of the perforation and peritoneal lavage. The mortality rate is increased by extensive surgical procedure, like right hemicolectomy.

Generally, younger patients recover better than the old. When typhoid perforation is complicated by rectal bleeding, from an eroded ileo-colic artery, there is an increase in mortality, which is still higher when perforations are multiple. This may be related to the virulence of the strain. Administration of chloramphenicol is mandatory and the haema-toxicity attributed is over-estimated.

Intravenous infusion of metronidazole further supports these patients to overcome the toxemia.

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