



**A COMPARATIVE STUDY BETWEEN DIVERSION LOOP ILEOSTOMY VERSUS PRIMARY REPAIR IN NON-TRAUMATIC ILEAL PERFORATION**

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**ABSTRACT**

Various operative procedures were advocated by different authors for ileal perforations, such as Drainage of peritoneal cavity, Primary closure after freshening the edges, Resection – anastomosis, Ileostomy. In this study we compared outcome of both groups of patients with various parameters. Out of which postoperative complication rate and duration of hospital stay found to be significant. Study suggested Early diagnosis and surgery with adequate resuscitation are keys to successful management of patients in ileal perforation.

**KEYWORDS :** ileal perforation, ileostomy, primary repair

**INTRODUCTION**

Gastrointestinal perforations have been surgical problem since the time immortal. Scientists have found evidence of gastrointestinal perforations in Egyptian mummies. Perforation is said to occur once a pathology which extends through the full thickness of the hollow viscus leading to peritoneal contamination with intraluminal contents. Perforation can occur anywhere in the gastrointestinal tract starting from esophagus to the rectum<sup>(1)</sup>

Ileal perforation peritonitis is a common surgical emergency in the Indian subcontinent and in tropical countries. It is reported to constitute the fifth common cause of abdominal emergencies due to high incidence of enteric fever and tuberculosis in these regions. Despite the availability of modern diagnostic facilities and advances in treatment regimes, this disease has an abrupt onset and a rapid downhill course with a high mortality if not treated<sup>(2,3)</sup>.

Various operative procedures were advocated by different authors, such as the<sup>(4-6)</sup> Drainage of peritoneal cavity, Primary closure after freshening the edges, Resection – anastomosis, Ileostomy.



Figure 1. Primary Repair In Ileal Perforation



Figure 2. Diversion Loop Ileostomy

**AIMS AND OBJECTIVES**

**MATERIAL AND METHOD**

This observational prospective study conducted at tertiary care hospital attached with medical college. Fifty patients of non-traumatic ileal perforation (diagnosed per-operatively) were included in the study. Patients were grouped in two groups on consecutive sampling basis.

One group with primary repair alone and another group with ileostomy following primary repair or resection and anastomosis.

**Observation**

**Per-operative Findings**

On laparotomy there was gross contamination of peritoneal cavity in most of the cases. Peritoneal cavity was found to contain copious quantity of pus and fecal material.

A single perforation was noted in most of cases. 34 (68%) of patients had single perforation, 8 (16%) had two perforation, 3 and more than three perforations were seen in 8 (16%) of cases.

Most of the patients on laparotomy had unhealthy inflamed and friable bowel. 38 (76%) patients had associated ileitis adjacent to perforation. Only 12 (24%) patients had a healthy bowel.

**Post-operative Complications**

Post-operative complications were encountered in varying proportions in both the groups. Fecal fistula was the most dreaded fatal complication. The overall rate and incidence of complication is detailed in table below.

**Table 1: Post-operative Complications**

Complications	(Primary Repair) n=25		(Loop ileostomy) n=25	
	No. of patients	%	No. of patients	%
Wound infection	13	52	5	20
Wound dehiscence	7	28	3	12
Skin excoriation	-	-	12	48
Ileostomy prolapse	-	-	2	08
Ileostomy retraction	-	-	3	12
Electrolyte imbalance	1	4	7	28

Faecal fistula	9	36	-	-
Altered quality of life	4	16	6	24
Death	5	20	3	12

**Duration Of Presentation And Outcome**

The delayed presentation or diagnosis leads to difficult postoperative outcome because of development of severe grade of peritonitis.

Out of 8 patients who were presented late, 5 patients died. Complications overall were noted in 50% of patients 52% with primary repair and 48% in patients with ileostomy. (P value 0.777)

The mean hospital stay for all patients was 17.1 days ranging from 6 to 44 days.

The mean hospital stay for patients in primary repair group was 18.9 days ranging from 9 to 44 days that for ileostomy group was 15.5 days ranging from 6 to 27 days. (P value 0.145) Overall mortality in the present study was 16% with 20% mortality observed in primary repair group and 12% was observed in ileostomy group. (P value 0.595)

Overall disturbed quality of life was seen in 20% of patients with 24% observed in ileostomy group and 16% in primary repair. (P value 0.450)

**Table 2: Outcome Of Study**

Outcome	Primary repair group	Ileostomy group
Hospital stay	18.6 days	15.5 days
Mortality	20%	12%
Altered quality of life	16%	24%
Complications	52%	48%

**DISCUSSION**

In present study 12 out of 25 cases developed ileostomy specific complications such as skin excoriation (48%), ileostomy diarrhea leading to electrolyte imbalance (28%), ileostomy prolapse (8%) and retraction of stoma (12%). Wound infection was also noted in (20%) of patients. Ileostomy related complications were in accord with the various studies that reported similar complication rate.

Patients with primary repair also had higher morbidity. Wound infection (52%), wound dehiscence (28%), fecal fistula (36%) were the complications suffered by patients in this group. As discussed, earlier FF was the most dreaded complication with 9 (36%) of cases being recorded among which 5 succumbed to death.

Mean hospital stay for all the patients was 15.4 days, ranging from 6 to 44 days. Patients in primary repair group had a very high mean hospital stay of 18.4 days, ranging from 8 to 44 days, whereas for patients in ileostomy group it was 15.5 days ranging from 6 to 27 days considering only the first admission.

The longer duration of hospital stay in patients with primary repair was mainly due to the associated higher complication like wound dehiscence and FF. Patients having ileostomy with longer stay were those who had excessive skin excoriation and peristomal ulceration. But mean stay was not found to be statistically significant with a P value of 0.145.

The overall mortality rate in present study is 46%. The reported mortality after primary closure ranges from 5% to 25%. However, most authors report a mortality of about 25%. In present study the mortality in ileostomy group was 16% as compared to 16% in primary repair group. As the difference between mortality in two group is not much significant, anyone group can't be favored according to mortality.

Ileostomy is a social trauma to the patient due to fecal waste and its smell. It has an adverse effect on the quality of life as well. [7] The symptoms worsen with the occurrence of ileostomy related complications like skin ulceration. In this study 6 (24%) patients out of 25 cases had psychological symptoms in the form of depression, stopped speaking and eating properly. All these patients gradually improved with time as the ileostomy matured and after they were explained about coming back to a normal life within short span after the closure of stoma. [8] Most of the patients during the waiting period for second surgery were able to lead a normal social and routine life but they missed their work as they found it difficult to work with the stoma.[9]

On the contrary patients in primary repair group although were not so significantly affected psychologically but still they suffered from some sort of depression due to prolonged hospital stay as a result of wound dehiscence and FF. [10][11] psychological symptoms were seen in 4 (16%) of cases.

**CONCLUSION**

Early diagnosis and surgery with adequate resuscitation are keys to successful management of patients in ileal perforation. Temporary diverting protective ileostomy in cases of ileal perforation plays a vital role in reducing the incidence of complications like FF. This helps reduce mortality in patients undergoing surgery for ileal perforation, ileostomy specific complications however increase the post-operative morbidity. These complications can be reduced, if not outright eliminated, by proper fashioning of the stoma and provision of adequate nursing care of the stoma. It is of paramount importance that ileostomies are properly sited and constructed. A stoma should be formed by a surgeon, who is not only technically skilled but also understands the potential metabolic and mechanical problems associated with the ileostomy.

Temporary diverting protective ileostomy should be given priority over other surgical options especially in those moribund patients whose general condition is not good, have been partially treated and have lost many hours of precious time, have developed metabolic and hemodynamic instability, having inflamed and friable bowel with more than one perforation and massive fecal contamination of abdominal cavity. Primary closure of perforation is preferred only in clinically stable patients with a single perforation, healthy bowel with minimal soiling of the abdominal cavity.

Although being bothersome, ileostomy is still a life-saving and damage control surgical procedure. Though literature is full of complications and management problems of ileostomy, it should be recommended that ileostomy in these cases is only temporary and the extra cost and cost of management is not more than the price of life saved.

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