Original Article

A Comparative Study on Outcome of Ileostomy versus Colostomy for Temporary Decompression of Colorectal Anastomosis.

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ABSTRACT:

Background*: The use of loop ileostomy or loop transverse colostomy represents an important issue in colorectal surgery. The rate as well as the clinical outcome of anastomotic leakage in colorectal anastomosis necessitates a loop stoma for fecal diversion. The aim of this study was to determine the outcome of loop transverse colostomy compared to loop ileostomy as a temporary defunctioning stoma following colorectal surgery with colorectal anastomosis.* ***Objectives****: To find out the outcome of ileostomy versus colostomy for temporary decompression of colorectal anastomosis.* ***Study Design:*** *It was a prospective observational study. Place of study: Sher-E-Bangla Medical College Hospital, Barisal .Result: In this study total number of patients 60, female were more in colostomy group. Median age was 62¬±¬¬¬¬12 years in ileostomy group and 64±14 years in colostomy group. . The two groups (IL, CL) were more or less similar to primary pathology where carcinoma rectum is the leading cause. The time of first stoma action is 2 days in ileostomy group and 4.5 days in colostomy group. There was a highly significant difference / etween the groups in the interval from stoma construction and its subsequent first action (<0.001). The length of stay in hospital was greater in the colostomy group. Distal suture line dehiscence confirmed radiological or on digital examination, occurred in 1 patient in the ileostomy group (3%) and 3 in the colostomy group (10%) expressed some discomfort on change of appliance. During closure of stoma, anstomotic leakage is occurred in 1 (3%) ileostomy patients and in 3 (9%) colostomy patients. Overall complication rate (table 3.4) specially wound infection, anastomotic leakage&hospital stay are more in colostomy group.* ***Conclusion****: Both ileostomy and colostomy provide a good operative outcome. But construction, as well as closure of loop colostomy had relatively more complications in routine use for temporary decompression of colorectal anastomosis*

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INTRODUCTION

1.1 Background:

There is still controversy as to whether temporary (loop) transverse colostomy or temporary (loop) ileostomy is superior as a temporary fecal diversion for colorectal

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anastomosis. While options may be limited for technical or therapeutic reasons. Equally important is the patient's perception regarding ease of use, management and quality of life. For left-sided colonic diseases and procedures, the most common stoma options include the loop transverse colostomy (TC) and loop ileostomy (LI). It has been of great concern because of high occurrence of morbidity and mortality which affect long-term survival[7]. The use of a protective stoma should be considered in relation to specific conditions involving the operation (low tumor, narrow male pelvis or complication during construction of the anastomosis). The proximal diversion, by means of either a colostomy or an ileostomy, minimizes anastomotic leakage by preventing fecal flow through the anastomosis[4-8]. In a randomized multicenter trial[9]. It was shown that the defunctioning loop stoma decreased the rate of symptomatic anastomotic leakage. Some controversy still remains as to whether loop ileostomy or loop colostomy is the best way of defunctioning for such anastomosis. Four randomized controlled trials have compared these two different techniques for defunctioning colorectal anastomosis. Two have favored loop transverse colostomy[12,14] and two have recommended ileostomy[15].In other non-randomized studies, construction of a loop ileostomy has been the preference, in the absence of any hard evidence favoring loop colostomy[16,17,18]. Both types of stoma present high complication rates with considerable mortality rates[19]. Clearly it remains controversial to whether loop ileostomy or loop colostomy is the most favorable proximal diversion for colorectal anastomosis.

2. MATERIALS AND METHODS

2.1 Study design : It was a cross sectional study.

2.2 Type of study : It was a prospective observational study.

2.3 Place of study : The present study was conducted in the Department of Surgery of Sher–E-Bangla Medical College Hospital , Barisal.

2.4 Period of study : The present study was conducted between the period of July 20011 and December20011. The duration of the study was six months.

2.5 Sample size: A total of 60 (Sixty) patients meeting the above enrollment criteria were selected consecutively from the study population.

2.6 Sampling technique: Purposive sampling.

2.7 Selection criteria:

2.7.1 Inclusion criteria:

Adult male and female patient more than 12 years. Patients under go temporary Iileostomy or colostomy in the surgical ward for temporary decompression of colorectal anastomosis.

RESULTS:

3**. Results:**

In this study the cases were collected from surgical wards and also from outpatient

departments of Shere-E-Bangla Medical College, Barisal. The study was carried out from July 2011 to Decembar 2011.

Table 3.1 Distribution of demographic data

	Loop ileostomy(n=30)		*Loop colostomy(30)*	*P value*
Gender				
Male	57%	43%	49%	0.861
Female	62±12		51%	
Age in years			64±14	0.121

Table 3.1 total 60 patients,57% male, 43% female were female ,median age is 62±12 years in ileostomy group and 64±14 years in colostomy group.

Table 3.2 Distribution of clinical diagnosis

Clinical diagnosis	Ileostomy(n=30)	Colostomy(n=30)
Carcinoma rectum	21(70%)	18(60%)
Carcinoma sigmoid colon	6()18%)	7(20%)
Volvulous	3(9%)	4(13%)
Diverticulosis	1(3%)	1(3%)

Table 3.2 shows the characteristic of the ileostomy and colostomy groups .The two groups were more or less similar to primary pathology (Table3.2) where carcinoma rectum is the leading cause. The number of female patients was however, greater in the colostomy group.

Table 3.3 Statistical analysis of results

	Ileostomy (30)	Colostomy (30)	
	Median (range)	Median (range)	P value

Operative time in minutes (stoma excision)	60.0 (30-120)	60.0 (30-90)	>0.50
Days to 1st stoma action	2.0(1-7)	4.5(1-10)	.<0.001
Days to 1st change of bag	3.5 (1-9)	3.0 (1-8)	>0.05
Days IV fluids after colorectal anastomosis	6.0 (3-22)	5. (3-13)	<0.002 discontinued
Total days in hospital	29.5 (21-55)	34.0 (20-116)	>0.10

Table 3.3 showed that total operative time in both ileostomy and colostomy is same (60 minutes) but total hospital stay is more in colostomy group. The time of first stoma action is 2 days in ileostomy group and 4.5 days in colostomy group. Statistical analysis of results is presented in Table 3.5. There was a highly significant difference between the groups in the interval from stoma construction and its subsequent first action (<0.001) . The length of stay in hospital was greater in the colosomy group and ileostomies were generally closed earlier than colostomies but neither reached statistical significance. Although closure of the ileostomy was considered 'easier' than colostomy, there was no difference between the groups in operative time.

Table 3.4 Incidence of postoperative complications from time of colonic resection and stoma construction to discharge of patients

Ileostomy (30)	Colostomy (30)	
No. of complications		
Necrosis	0	1
Wound infection	3	8
Prolapse	1	2
Wound dehiscence	0	3
Skin excoriation	7	1
distal suture line leakage	1	3
Haemorrhage and haematoma	1	0
Parastomal sepsis	0	1
Parastomal hernia	0	1
Stenosis	1	0
Retraction	0	0
Fecal fistula	0	1
Total No. of patients with complications	14 (40%)	21(60% (P value < 0.03)

Table 3.4 showed distal suture line dehiscence, confirmed radiological or on digital examination, occurred in 3 colostomy and 1 ileostomy patients prior to closure of stoma. Clinically evident dehiscence with faecal leakage through the wound occurred in one colostomy patient. Overt breakdown of the suture line followed in 1 patient in the ileostomy group and 3 in the colostomy group expressed some discomfort on change of appliance. The number of bags used was consequently greater in the ileostomy patients by a ratio of 4 to 3. Excoriation of skin was observed 7 in the ileostomy patients and 1 in colostomy patient .

Table 3.5 Complications after stoma closure

Complications	Ileostomy (n=30)	Colostomy(n=30)	P value
Ileus	2	1	<0.012
Wound infection	1	4	<0.003
Reoperation	1	2	<0.001
Anastomotic leakage	1	3	<0.008
Stenosis	1	0	<0.015
Hospital stay (days)	13±4	18±5	<0.002

Table 3.5 showed that complications, anastomotic leakage was occurred in 1 (3%) ileostomy patients and in 3 (9%) colostomy patients .Hospital stay and wound infection were more in colostomy group.

DISCUSSION:

4.1 Discussion:

The value of a defunctioning stoma in preventing dehiscence of colorectal anastomosis has never been proven and it is doubtful whether the mortality of established anastomotic leakage is significantly reduced by a stoma[8]. Our study showed that 57% male, 43% female in LI group & 49 % male,51% female in CL group (Table3.1). The major concern regarding loop colostomy is the higher incidence of colorectal suture anastomotic leakage seen in this group of patients in the study.

Described in four trials[3,4,5,6] Bowel leakage: 4% (5 of 128 patients in Group A) compared to 2% (3 of 130 patients in Group B); RD 0.02, 95% CI: -0.03 to 0.06 (non-significant) The possibility of the stoma itself contributing to leakage after colorectal anastomosis was recently considered by Fielding and his colleagues [30] and this is very likely in our study, table 3.5 showed 3 (9%) patient whose anastomosis dehisced after the colostomy closure. Further conclusions can be drawn as the difference between the groups was statististically significant and although the number of low anastomosis were similar, other risk factors in the two groups may not have been comparable

.We have found the loop ileostomy easy to construct in all but the very obese patient in whom a colostomy presents similar difficulties. We used no rods or absorbable bridges to support the loop ileostomy as we wished to avoid unnecessary fibrosis at the base of the soma which might increase the difficulty of early stoma closure.

In two study [9,10] it showed that stoma prolapsed is 2% (2 of 125 patients in Group A) compared to 19% (25 of 131 patients in Group B). But in this study showed, 1(3.4%) prolapsed in IL group and 2(7%) in CL group (Table 3.4). Despite earlier function of the soma, management was not a problem and skin excoriation occurred in 7(23%) out of 30 patients of ileostomy group(Table3.4). The of prolaps or serious skin problems may be due to technical fault. We also have experience of patients in whom it has been impossible or inadvisable to restore continuity and who have had no significant ileostomy morbidity up to one month. The trial demonstrated minimal sepsis after ileosomy closure despite the absence of bowel preparation and patients in the ileostomy group tended to enjoy earlier discharge from hospital(Table 3.5).Raimes and his colleagues found that a temporary ileostomy was a satisfactory stoma with few complications[33]. Fielding LP and his co-workers[28] found the loop ileosomy to be superior to colosomy but their study of 42 patients was not randomised and did not include details of stoma management. In this trial the management of a loop ileosomy was no more difficult than that of a defunctioning colostomy. We prefer the loop ileostomy and recommend it as an alternative to a colostomy.It is difficult to predict in which patients an anastomotic leak is likely to occur. The major concern regarding loop colostomy is the higher incidence of colorectal suture line dehiscence 3(10%) seen in this group of patients in the study (Table 3.4). Further conclusions can be drawn as the difference between the groups was statistically significant and although the number of low anastomosis were similar, other risk factors in the two groups may not have been comparable. We have found the loop ileostomy easy to construct in all but the very obese patient in whom a colostomy presents similar difficulties. We used no rods or absorbable bridges to support the loop ileostomy as we wished to avoid unnecessary fibrosis at the base of the stoma which might increase the difficulty of early stoma closure. There was one prolapse of the ileostomy in this trial .In this trial stoma closure was taken place difference after 3 months of stoma surgery. Raimes and his colleagues found that a temporary ileostomy was a satisfactory stoma wIith few complications [33]. Fasth and his co-workers[31] found the loop ileostomy to be superior o colosomy but their study of 42 patients was not randomised and did not include details of stoma management. In this trial the management of a loop ileosomy was no more dificult than that of a defunctioning colostomy. We prefer the loop ileostomy

and recommend it as an alternative to a colostomy. In this trial conventional indications were used to identify patients believed to be at high risk of anastomotic dehiscence, but suture line dehiscence occurred in only 10% of these preselected high risk patients. Criteria for selection should, therefore be much more stringent. Further controlled studies are needed to identify if any patients benefit from a defunctioning stoma which is unpleasant and adds to the risk and hospital stay after colorectal anastomosis.

4.2 CONCLUSION:

Both ileostomy & colostomy provide a good operative outcome. But construction, as well as closure, of loop colostomy had relatively more complications in comparison to loop ileostomy. It is therefore concluded that loop ileostomy is the choice for routine use for temporary decompression of colorectal anastomosis in which dehydration is not to be expected.

4.3 Recommendation:

We recommended loop ileostomy in all patients in which dehydration is not to expected since wound infection rate is lower and hospital stay is shorter during stoma closure but further large scale study is needed.

4.4 Limitation of the study:

The present study was conducted in one hospital which may not be representative for the whole country. The study was conducted with a small sample size. Most of the patients operated by assistant registrar/IMO/HMO. Long term Follow up of the patients to observe the morbidity and mortality was not possible due to time constrain also a limitation of the study. More representative findings can be obtained from the study with large sample size and in different institute all over the country.

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