SAFETY OF EARLY VERSUS ROUTINE DISCHARGE FOLLOWING CLOSURE OF TEMPORARY ILEOSTOMIES

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ABSTRACT

Objective: The objective of this study was to compare safety of early versus routine discharge following closure of temporary ileostomies.

Material and Methods: This prospective randomized control trial was conducted in surgical 'A' department of Lady Reading Hospital Peshawar from January 2011 to December 2011 on all adult patients more than 14 years and less than 70 years, either gender with temporary ileostomy for 6 weeks of initial surgery, normal distal loopogram and serum albumin more than 2.5g/dl were included. All the patients with pre-existing stomal site wound infection, reversal of stoma through laparatomy, comorbidities like D.M. Chronic liver disease, ischaemic heart diseases, ureamic patients and patients recieved chemotherapy, radiations within six weeks were excluded. A total of 60 patients were allocated into two groups of 30 each randomly by lottery method. Group A were allowed to take clear liquid within 24 hours and were discharged within 72 hours after operation from hospital. Group B who were kept " nil by mouth " in post operative period upto 72 hours and were discharged after 5 days from hospital. Safety was evaluated by daily progress of both groups post-operatively for any complication and was noted. Data was compiled and analyzed by using SPSS version 16.

Results: A total of 60 patients who had undergone ileostomies closure were divided into two groups randomly of size 30 each. Group A contained early discharge (within 72 hours) and Group B contained routine discharge (after 5th postoperative day).

The age of the patients ranged from 20 to 68 years with mean age for group A was 38.46±1.222 years and for group B was 40.9±1.35 years. The male to female ratio for group A was 3.2 to 1 and for group B was 2.8 to 1 .

The overall complications in group A was 33.3% and 20% in group B with P value 0.243. The postoperative complications were insignificant statistically. In this study no leak, fistula and mortality was documented in either group.

Conclusion: Early discharge after ileostomy reversal is safe, achievable and cost effective. It should be encouraged as routine method of discharge to modify our practice where a large number of patients are waiting for admission.

Key Words: Ileostomy Reversal, Early Discharge, Safety.

INTRODUCTION

Loop ileostomy is life saving procedure, not acceptable by patients and not likened by majority of surgeons. First ileostomy was made in 19th century as a temporary measure in an obstructive lesion of ascending colon[1].

Temporary stomas are left in situ for a minimum of six weeks before closure, to allow completion of inflammatory and hypervascular phases which occur after surgery, reorganization of intra-abdominal adhesions and opportunity to improve and stabilize patients health. The closure of a temporary loop ileostomy requires close surgical attention and is not a simple procedure, involving complete intraperitoneal mobilization of the stoma, dissolution of all adhesions under direct vision to ensure no inadverantent tears and careful re-anastomosis ensuring that haemostasis is ensured at each step of procedure[2].

Ileostomy reversal improves the patient's overall quality of life. It has been suggested that reversal of loop ileostomy can be performed as an ambulatory procedure with early discharge protocols in order to facilitate the early discharge of patients[3,4].

Kalady et al showed that discharge within 23 hours is possible after general and / or regional anaesthesia in a cohort of 28 carefully selected patients[3]. The literature thus indicates that postoperative complications occuring within thirty days of stoma closure will affect approximately 1 in 6 patients[5].

The concept of enhaced recovery and early discharge include the avoidance of nasogastric tubes and early feeding[6]. Loop ileostomy closure is a safe and effective procedure which can be carried out with an acceptable complication rate and short in patient

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hospitalisation. Complications which occur are unrelated to length of hospital stay. Sound post-operative advice and appropriate analgesia allows many patients to be discharged in the early post-operative phase[7].

Ileostomy patients are likely to be feeling anxious and vulnerable. Conventionally, patients are kept nothing by mouth, nasogastric tube in situ, intravenous fluid and antiboitics for five days after ileostomy closure which increase the length and cost of hospitalization. Beds availability for next elective list is also problem in our society. The aim of this study was to compare the safety of early versus routine discharge following reversal of ileostomies.

The results of this study will provide us with current best method and the same results will be disseminated to other local health professionals so that future guidelines may be formulated.

OBJECTIVE

The objective of this study was to compare safety of early versus routine discharge following closure of temporary ileostomies.

MATERIALS AND METHODS

This prospective randomized control trial was conducted on patients with ileostomy reversal at Surgical A unit PGMI Lady Reading Hospital Peshawar over a period of one year from Janaury 2011 to December 2011. All adult patients more than 14 years and less than 70 years, either gender with temporary loop ileostomy for 6 weeks of initial surgery,normal distal loopogram and serum albumin more than 2.5g/dl were included. All the patients with pre-existing stomal site wound infection, reversal of stoma through laparatomy, comorbedies like D.M. Chronic liver disease, ischaemic heart diseases, ureamic patients and patients received chemotherapy, radiations within six weeks were excluded. A total of 60 patients fulfilled the inclusion criteria were randomized into two groups of 30 each by lottery method. Group A were allowed to take clear liquid within 24 hours and were discharged within 72 hours after operation from hospital. Group B who were kept “nil by mouth“ in post operative period upto 72 hours and were discharged after 5 days from hospital.

Detailed history, clinical examination, routine investigations like CBC,ECG,X-ray chest, blood sugar, HBsAg and Anti HCV were done in each case preoperatively. Informed written consent was obtained.

Mechanical bowel preparation was done the day before surgery. Proximal loop was prepared using 200ml 20% mannitol solution mixed with 1-litre fruit juices taken orally. Distal loop was cleaned by antegrade lavage using normal saline and Kleen enemas per rectally. Closure was done on the next day of admission by a same consultant blinded from the details and inclusion of the patient in the study. Prophylactic antibiotics (ceftriaxone 1gm+metronidazole 500mg) were administered intravenously at the time of induction of anesthesia. Elliptical incision was given around stoma and deepened into the peritoneum. Upon full mobilization of the loop, gut continuity was restored using polyglycolic acid 3/0 suture in extramucosal single interrupted layer. Rectus sheath was closed with polypropylene no.0 in continuous layer. Skin was approximated with polypropylene 2/0 suture in simple interrupted and anal stretch was done at the end.

Nasogastric tubes were not routinely used. Patients were kept nil by mouth while I/V antibiotics and fluids were continued post-operatively and/or till they pass stools and flatus. Daily progress including bowel sounds, passage of stool and flatus and any complications were noted. Patients were discharged from the hospital within 72 hours when they took orally liquid, stable clinically and there were no complications which was decided by the attending surgeon in group A while in group B patients were kept nil by mouth for 3 days and discharged after 5th day postoperatively.

The follow-up schedule was explained to the patient at the time of discharge and was scheduled after one week. Patients were advised to report to OPD if they develop any problem in between follow up visits. A questionnaire containing relevant demographic data and safety was evaluated in terms of complications postoperatively by clinical examination, X-Ray, ultrasound and C.T abdomen and were recorded. Achievability was decided by overall postoperative complications.

Data was recoreded and analyzed by statistical program SPSS version 16. Mean + standard deviation was calculated for quantitative variable age. For gender male to female ratio was calculated. Frequency and percentages were calculated for categorical variables like gender and postoperative complications. A propability value of less than 5% ($P<0.05$) was considered significant. Data were analyzed by using chi square test.

RESULTS

Out of a total 60 patients studied, of which 30 patients were allowed to early oral feeding and discharge within 72 hours (Group A) of operation and 30 patients to late oral feeding and discharge after 5th day (Group B) postoperatively.The age of the patients ranged from 20 to 70 years with the maximum number in the 4th decade. The results are shown in the tables below.

We compared the demographic features in table 1.

No. of patients	Group A n (%) 30	Group B n (%) 30	P-value —-
Gender	23(76.7%)	22(73.3%)	.766
Male	7(23.3%)	8(26.7%)	
Female			
Mean Age	38.46±1.222	40.9± 1.35	.953
Indication of ileotomies			
Firearm injuries	9(30%)	8(26.7%)	.976
Ileal perforation	7(23.3%)	6(20%)	
Stab wound	1(3.3%)	1(3.3%)	
Blunt trauma	2(6.7%)	3(10%)	
Malignancy	3(10%)	6(20%)	
Abdominal Tuberculosis	3(10%)	3(10%)	
Strangulated Hernia	2(6.7%)	1(1.7%)	
Septicabortion	1(3.3%)	0 (0%)	
Sigmoid Volvulus	2 (6.7%)	2 (6.7%)	

In Table 2, we summarized the post-operative outcome in both group.

COMPARISON OF POST-OPERATIVE OUTCOMES IN BOTH GROUPS

Postoprative Outcome	Group A (Early Discharge) n (%)	Group B (Routine Discharge) n (%)	P- value
Nausea/ Vomiting	7(23%)	3(10%)	.166
Abdominal distension	4(13.3%)	3 (10%)	.688
Tolaribility of feed	26(86.7%)	28(93.3%)	.389
Abdominal collection	2(6.7%)	1(3.3%)	.554
Small bowel obstruction	4(6.7%)	5(8.3%)	.718
Wound infection	7(23.3%)	6(20%)	.754
Re- admission	6(20%)	6(20%)	1.000
Total Cost per procedure in rupees	6180±1409.73	13040±2166.15	<0.001
Overall Complications	8(33.3%)	6(20%)	.243

DISCUSSION

Defunctioning loop ileostomy is an established method to divert bowel contents away from distal anastomosis thereby attenuating the sequele of anastomotic leakage and prevent fistula formation or use of inflamed bowel[3,4].

In developed world, early reversal and short post-operative hospital stay is understandable because ileostomy was done just to protect the distal anastomosis otherwise small intestine was healthy. The general for spontanuous ileal perforation. Most of these patients were weak due to long hospital stay and we waited for six weeks for reversal inorder to improved their health. we admitted our patients a day before surgery because our patients came from near districts and rural area and was difficult for them to report on operative day and also we did distal bowel wash with normal saline and kleen enema a day before surgery.

Traditionally, closure has required hospital admission with observation until return of bowel function. To reduce length of hospitalization, it is important

that the pre-operative, operative and postoperative periods are managed actively. Accelerated recovery programs for major surgery have demonstrated the benefit to patients of early mobilization, early introduction of diet and early discharge without compromising patient care[12,13].

An overall complication rate of 17% following stoma closure was cited in several studies with rates from 0% upto 42% reported[8,9]. In our study the overall complications was 33.3% in group A and 20% in group B with P- value .243 which is statistically insignificant between the two groups. Our results are comparable with the results of published studies.

Haagmans and colleagues[14] performed 15 closures under local anaesthesia with a median length of stay of 2 days. Ihedioha et al used a minimal general anaesthesia technigue to perform 70 ileostomy closures with a median length of stay of 2 days.

The incidence of wound infection corresponds to the surgical technique used to close the skin primarily or secondary. In our study skin was closed primarily and wound infection was 11.7% which is comparable to other studies reported in the range of 2-41%[15,16].

We observed comparable incidence (13.3%) of small bowel obstruction in our study as several authors have reported complication rates ranging from 12-15%[7,17]. Anastomotic leak was documented in the range of 1-8% by various studies[8,18,19]. In our study there was no leak/ fistula documented in either group.

From the results of our study and compare with other studies, it appears that early discharge after temporary ileostomy closure is safe and can be achieved with an acceptably low serious complication rate and cost effective which is statistically significant with P-value < 0.001. Most complications would not have been avoided if the patient had been discharged earlier. Our results would suggest there is no reason to avoid earlier discharge after ileostomy closure after ensuring the availability of postoperative support and access to emergency services after discharge. They should be counselled and given written instructions on analgesia requirements, wound care and on when to seek attention for impending ileus, obstruction or sepsis.

We are unable to study various patients characteristics, comorbidities considered a potential risk factors for postoperative outcome including BMI, and ASA score. Furthermore, it is not linked to a pre-determined discharge protocol.

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