Original Article

Outcome of Closure of Transient Ileostomy at Tertiary Care Hospital

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ABSTRACT

Objective: The purpose of our study is to find out the complications of reversal of ileostomy after interval of 3 to 5 months so that patients be called for ileostomy closure at proper time to benefit them with least complications.
Study Design: Cross sectional study
Place and Duration of Study: This study was conducted at Surgical Department, PMCH Nawabshah from November 2016 to October 2018.
Materials and Methods: The patients included in this study were of previously operated for multiple diseases in elective as well as in emergency. After passing from 3 to 5 years duration, they were called on in OPD for admission and planned for reversal of ilesotomy after getting proper investigations and doing appropriate preoperative preparation. Postoperatively, they were assessed for the outcome of its closure for a week in hospital and later on follow-ups.
Results: total 50 patients were included in this study. 27(54%) were male and 23(46%) were female. They were previously operated for various pathologies such as typhoid ileal perforation, tuberculous strictures, trauma to samall or large bowel, sigmoid volvulus, cecal perforation and fecal fistulas. In our study, the complications rate was least as compared to othrs. Only 4(8%) patients developed fecal fistula, 5(19%) wound infection, 2(4%) inta- anbdominal abscess, 1(2%) Subcutaneous hematoma, 3(6%) postoperative diarrhea, 2(4%) urinary retention. No expiry was recorded in our study after reversal of temporary ileostomy.
Conclusion: in summary, it is concluded that in our study the outcome of ileostomy closure was the best due to appropriate timing established for closure, proper end to end anastomosis and prevention of patient from prolonged paralytic ileus.
Key Words: Ileostomy, Cecal perforation, Wound infection, Postoperative Diarrhoea.

Citation of articles: Memon ZAI, Qureshi SH, Jamali AH, Bhatti NK, Ghumro AH. Outcome of Closure of Transient Ileostomy at Tertiary Care Hospital. Med Forum 2019;30(6):123-125.

INTRODUCTION

The term "Stoma" is taken from Greek word which means "mouth/opening". It is an artificial opening created into a hollow organ on the surface of body. The formation of stoma is a common surgical procedure in order to reduce the postoperative risk factor. The global literature shows higher morbidity and mortality rates in stoma closure. The first ever stoma in surgical history was made by a French surgeon Pillore in 1776 A.D. [1,2]
In GIT surgery, stomas made are of two types viz ileostomy and colostomy. These are permanent and temporary from either end of the bowel or the side of the bowel.

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Received: January, 2019
Accepted: March, 2019
Printed: June, 2019

Temporary stomas are formed in order to divert the contents prior to obstructed/diseased portion of the gut. This is later on restored in its previous position. The most common temporary stoma formed is the defunctioning ileostomy and closure involves the freeing of all layers of bowel from surrounding structures and anastomosis of proximal and distal limbs is made to restore bowel anatomy. The defect is repaired by closure of musculoaponeurotic layer.[3]
The reversal of ileostomy is associated with various risk factors including leakage of anastomosis, obstruction, infected wound, wound dehiscence and the appearance of incisional hernia.[4] The transient ileostomy is done for multiple surgeries with risk of failure of procedures. Though ileostomy cannot prevent leakage itself, a temporary ileostomy can decrease the enhancement of clinical features due to leakage and covert major complications to minor ones treatable conservatively. Temporary ileostomies are reversed after 2 or more months of stoma formation after radical surgery. [5,6]
To maintain ileostomy is a very difficult task. It can cause multiple complications that are wound infection, leakage of anastomosis, necrosis, small bowel obstruction, retraction, incisional hernia, fistula, stenosis, peristomal infection, high output stoma, parastomal hernia, prolapsed, dehydration, electrolyte

imbalance, malnutrition or skin problems in the surroundings of stomas. The surgical complications are paralytic ileus, obstruction and herniation. The common complications are wound infection (9%) and leakage of anastomosis (5%). It enormously affects the daily work of life, quality of life and can also cause the psychological complications like lower self esteem and depression. Patients are advised to visit hospital routinely. These adverse effects can only be prevented to reverse ileostomy early. [7,8] The rationale of our study is to find out the complications of closure of transient ileostomy.

MATERIALS AND METHODS

This is a cross sectional study of 50 patients done at PMC Hospital Nawabshah from November 2016 to October 2018. The patients, who were included in this study, got admission from outpatient and emergency department of this hospital. The time of ileostomy formation was minimum 2 months to maximum 5 months. They were operated for different diseases including small and large bowel ones. They were investigated for routine tests. Specific radiological investigations like Ultrasound of Abdomen and loop gram was done in order to find out any other pathology and see the patency of the entire gut. After clearance of loopogram, all patients were put on list after their preoperative preparation. They were shifted in Operation Theater. They operated under general anesthesia. Prophylactic antibiotic was given. Small bowel was mobilizes after excision of skin edges. Hand-swen anastomosis was done with Vikryl2/0 with a short small bowel resection. Ileostomy was reversed, drain was kept and wound was closed layer by layer. Patients were assessed for postoperative outcomes.

RESULTS

Total patients included in this study were 50. Out of 50, 27(54%) were male and 23(46%) were female. They were previously operated for different diseases. 19(38%) were operated for typhoid ileal perforation, 10(20%) for Tuberculous ileal perforation and stricture, 7(14%) for traumatic multiple ileal perforations, 8(16%) for traumatic colonic perforations, 3(6%) for sigmoid volvulus, 2(4%) for re-operation after formation of fecal fistula after primary repair of ileal perforation and 1(2%) was of Cecal perforation (Table 1).

All patients were kept NPO for 3 to 5 days and then orally allowed. Following complications were noted postoperatively among our patients. Only 4(8%) patients developed fecal fistula, 5(19%) wound infection, 2(4%) inta- anbdominal abscess, 1(2%) Subcutaneous hematoma, 3(6%) postoperative diarrhea, 2(4%) urinary retention. No expiry was recorded in our study after reversal of temporary ileostomy (Table 2).

Table No. 1: Previously Operated For Different Diseases

S.No	Disease	No of Patients	Percentage
1	Typhoid ileal perforation	19	38%
2	Tuberculous ileal stricture and perforation	10	20%
3	Traumatic ileal perforations	7	14%
4	Traumatic colonic perforations	8	16%
5	Sigmoid volvulus	3	6%
6	Cecal perfoartion	2	4%
7	Fecal fstula	1	2%
Total		50	100%

Table No. 2: Complications

S.No	Complications	No of patients	Percentage
1	Fecal fistula	4	8%
2	Wound infection	2	4%
3	Intra abdominal abscess	2	4%
4	Subcutaneous hematoma	1	2%
5	Postoperative diarrhea	3	6%
6	Paralytic ileus	5	10%
Total		17	34%

DISCUSSION

Transient stoma formation either ileostomy or colostomy is an essential part of surgical practice while performing the small bowel or large bowel emergency as well as elective procedures. Now days it is being used quite common in developing countries. The morbidity closure complication rate ranges from 2.4 to 48.2%.[9]

There are three main techniques by which loop ileostomy can be closed. These are enterostomy suture, resection and hand sewn anastomosis . This closure is associated with incidence of morbidity which varies according to conditions.[10] A literature survey of 20th century showed the morbidity rate of 29.4% whereas in our study it was 34%. Bozzetti et al calculated a literature review of more than three thousand patients. He concluded the morbidity rate of 27.5% that is also very near to our rate of complications.[11]

Leakage of anastomosis occurs due to multiple risk factors like sex, tumor leakage, irradiation and others also. Therefore it is necessary that timing of stoma closure should be done keeping in view these risk factors. Kaidar-Person et al evaluated 26 studies and found wound infections of 0-18.3% where as in our study it was only 4%. Leakage of anastomosis was 0-8% . similar was also observed in our study. [12]

Perez et al reported that the prevalence of complications commonly depends upon the time interval between ileostomy formation and its closure. He concluded that

the duration should be more that 8.5 weeks postoperatively. Bakx et al suggested closure 8 days postoperatively. Danielsen et al conducted trial study and concluded that safe stoma closure is 8 to 13 days postoperatively. In our study, it is observed that ileostomy closure should be done after 3 to months to get good results.[13] A study regrets the early closure of ileostomy and concludes that because of risk of development of dense and inflammatory adhesions that were seen at the time of surgical procedure of ileostomy reversal. This study prohibits to close loop ileostomy in short duration. In our study, it is rectified as our ilesotomy closure was done from 3rd to 5th months and got good results. In this study, wound infection was found to be 4.2% (1 case). Similar was observed in our study.

The overall complication rate of closure varies from 3% and 38.5% whereas in our study, the rate is 34% only with lowest risk complications. The closure of ileostomy has a low mortality. Some studies suggest reversal as daycase procedure decreasing the reduction in hospital stay and cost of hospitalization.[14] There are certain methods to lessen the rate of complications after ileostomy closure. Distal limb irrigation and purse string skin closure decrease wound related complications. However, conventional linear closure of skin is said to be safe and effective to avoid prolonged healing duration.[15]

CONCLUSION

In summary, our study evaluated the outcomes of closure of ileostomy and found that formation of ileostomy and later on its closure within a passage of time is safe, life saving and least complicated procedure in surgical emergency as well as elective practice.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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