



Surgery

AN OBSERVATIONAL CLINICAL STUDY OF 40 CASES OF INTESTINAL STOMA CLOSURE AND ITS COMPLICATIONS AT TERTIARY CARE HOSPITAL SOUTH GUJARAT

Dr Vishwa Gor	Senior Resident, Department Of General Surgery, Government Medical College Surat.
Dr Amit R Patel	Assistant Professor Department Of General Surgery, Government Medical College Surat.
Dr Devendra Chaudhari	Associate Professor Department Of General Surgery, Government Medical College Surat.
Dr Chaithanya Reddy K M*	3rd Year Resident Department Of General Surgery, Government Medical College Surat. *Corresponding Author

(ABSTRACT) **Background:** Intestinal stoma whether temporary or permanent as its own complication which increase the morbidity of the patient and hospital stay .In this article we have tried to analyze the various complications faced in 40 cases of stoma closure in a tertiary care hospital and factors affecting the outcome of patient undergoing stoma closure which determine morbidity and decrease hospital stay. **Aims And Objectives:** To Observe certain complications of intestinal stoma closure that are common in certain age group with ileo-ileal, ileo colonic & colo-colonic types of intestinal stoma and its Outcome in Certain Age groups. **METHODS:** Data was collected from case reviews of patients admitted and operated in the hospital during the period of May 2018 to April 2020 and different parameters have been taken into consideration regarding the stoma closure and its related complications. **Results & Conclusion :** Among 40 patients anastomotic leak is most common complication followed by obstruction due to stenosis or stricture and wound site complications. Abdominal tuberculosis is the commonest comorbidity associated with the overall post-operative complications, anastomotic leak and mortality. There is higher probability of anastomotic leak with the lower values of albumin and protein, with bowel lumen disparity and lower if early stoma closure was done (<90days)

KEYWORDS : Intestinal stoma, anastomotic leak ,loop ileostomy.

INTRODUCTION

An intestinal stoma is an opening of the intestine or urinary tract onto the abdominal wall, constructed surgically or appearing inadvertently. An ileostomy involves exteriorization of the ileum on the abdominal skin. In rare instances, the proximal small bowel may be exteriorized as a jejunostomy. A colostomy is a connection of the colon to the skin of the abdominal wall. Ileostomies are created for diverting the fecal stream on urgent basis in intestinal obstruction, perforation (typhoid/tubercular), blunt trauma abdomen, or when there is some distal disease process to be rested or a distal operation site to be healed, or as permanent ileostomy when distal bowel is excised for cancer, inflammatory bowel disease, etc. Though ileostomy is frequently a lifesaving procedure, it can lead to complications, often devastating like necrosis, retraction, stenosis or stricture, prolapse, skin infection, dermatitis, malnutrition, etc. The outcome varies in ileostomy patients according to their indications, age, gender, nutritional status, ileostomy type, type of procedure, site of stoma, so depending upon the circumstances temporary stoma closure is advisable to lessen the complications & improve quality of life of the patient. The present study is for finding out the predictors of complications as well as occurrence of complications with closure of temporary stoma.

AIMS AND OBJECTIVES

- To Observe certain complications of intestinal stoma closure that are common in certain age group with ileo-ileal, ileo colonic & colo-colonic types of intestinal stoma and its Outcome in Certain Age groups
- To find out common causes of complications like anastomotic leak, post closure obstruction.

METHODS

Retrospective study consisting of 40 Operated cases of Intestinal stoma closure of abdomen selected from surgical units of Teaching Hospital from May 2018 to April 2020. All case of this study group were subjected to preoperative standard investigations and stoma closure was performed with suitable standard surgical procedures adopted.

During study period, Cases are approached in backward pattern, starting from most recent surgery and going backwards till 40 cases are completed fulfilling the inclusion and exclusion criteria

Inclusion Criteria:

- Patients who are operated case of intestinal stoma closure
- >18 year to 60 year

Exclusion Criteria:

- those who refuse to give consent
 - <18 year or >65 year
 - Death of patient in postoperative period due to systemic cause
- Method for Collection of Data

RESULTS AND DISCUSSION:

Types Of Complication

Table-1

COMPLICATIONS	NUMBER OF PATIENTS
WOUND SITE INFECTION	1
OBSTRUCTION	2
ANASTOMOTIC LEAK	3

Among 40 patients anastomotic leak is most common complication followed by obstruction due to stenosis or stricture and wound site complications.

Causes Of Anastomotic Leak

Table-2

CAUSE OF ANASTOMOTIC LEAK	NO. OF PATIENT
ABDOMINAL TUBERCULOSIS	1
IMMUNO COMPROMISED STATE (PLWH)+ ABDOMINAL TUBERCULOSIS	1

Among the two patients with abdominal tuberculosis, one patient was having relapse abdominal tuberculosis and another one was defaulter of abdominal tuberculosis with immune compromised state. Both of them underwent operative management for the leak & entero cutaneous fistula.

Patient with relapse abdominal tuberculosis died following the surgery, while the other one is living without further complication till date.

Another patient of low output entero cutaneous fistula has been managed conservatively and patient was discharged after post operative day-21. No obvious cause is found. There may be eversion of single suture which led to the leak. Fistula has been healed later on & Patient is not having any further complains till date.

CAUSES FOR OBSTRUCTION

Two patients were having post-operative obstructive features, one of them were having an adhesion causing gangrenous bowel, underwent re-exploration and resection and anastomosis was done for gangrenous

bowel distal to the stoma closure site due to vascular compromise of the bowel loop.

Another patient with the obstructive features managed conservatively and discharged, with no complications till date.

Relation Of Total Protein With Anastomotic Leak

Table-3

TOTAL PROTEIN	ANASTOMOTIC LEAK	NO ANASTOMOTIC LEAK
<6.4 gm/dL	3	19
6.4-8.3 gm/dL	0	18

Relation Of Serum Albumin With Anastomotic Leak

Table-4

SERUM ALBUMIN	ANASTOMOTIC LEAK	NO ANASTOMOTIC LEAK
<3.5 gm/dL	2	26
3.5-5.2 gm/dL	1	11

Nutrition is an overall important factor in patients undergoing any surgery but it is of great importance in people undergoing bowel resection and anastomosis procedures for the anastomotic site to heal. Although albumin remains a flawed marker of nutrition, it offers clear prognostic value in predicting patient outcomes after colorectal surgery. Albumin is the commonly used preoperative marker for nutritional status of the patients. Hypoalbuminemia is associated with higher chances of longer hospital stay, post-operative paralytic ileus, surgical site infection as documented by various studies.

Type Of Stoma Formation And Complication

Table-5

TYPE OF STOMA	NO. OF PATIENTS	ANASTOMOTIC LEAK
LOOP ILEOSTOMA	19	0
DOUBLE BARREL ILEOSTOMA	4	1
LOOP COLOSTOMA	8	1
REVERSAL OF HARTMAN'S PROCEDURE	6	0
ILEO-TRANSVERSE STOMA	3	1

Among the 40 patients of stoma closure, commonest type of stoma is loop ileostomy and the least common being ileo-transverse stoma.

One patient of Double barrel stoma closure, another of loop colostomy closure & ileo-transverse stoma closure patient had anastomotic leak. It is seen that the least chance of leak or any complication is seen with loop ileostoma as its blood supply was not hampered in the first place and the continuity of the mesentery was maintained and also the added advantage of closing only the anterior wall with intact posterior wall. The cause of the leak would be of any but chances would be more if both the ends have to be anastomosed fully and there is disparity in their luminal sizes.

Time Period Between Stoma Formation And Stoma Closure

Table-6

TIME PERIOD	NUMBER OF PATIENTS	ANASTOMOTIC LEAK
<30 DAYS	0	0
30-90 DAYS	16	1
>90 DAYS	24	3

Similar studies for time duration for intestinal stoma closure post stoma formation shows the following results:

Table-7

Early Closure (30-90 Days)

Author	Published year	Case number	Early closure time	Case match	Support early closure
Wanglin Li, Gokhan Ozuner ²⁹	2017	358	<90 days	Yes	Yes
Danielsen Ak et al. ³⁰	2016	112	8-13 days	No	Yes
Memon S. et al. ³¹	2012	64	<90 days	Yes	Yes
My Study	2021	40	<90 days	No	Yes

Majority of the study suggest that duration for closure majorly reduced the morbidity related to the stoma & chances of leak in early post operative period. There is less chances of bowel injury in early closure as the inflammation in the bowel loops post initial surgery (stoma formation) has been settled down & very less or no adhesion formation yet.

Late closure of stoma may lead to fibrosis as well as possibility of adhesion formation near the intestinal loop which would pose operative difficulty and increase the postop complication rate.

In my study majority of the stoma was intended for early closure but due to unfortunate two waves of covid pandemic all the planned surgeries were put on hold, which led to the delay in stoma closure.

CONCLUSION

In my retrospective observational study of stoma closure following conclusions were derived.

- Abdominal tuberculosis is the commonest comorbidity associated with the overall post-operative complications, anastomotic leak and mortality.
- Although normal levels serum albumin and total proteins are associated with good prognostic marker or post-operative outcome, there is higher probability of anastomotic leak with the lower values.
- My study suggests and support that early closure of the stoma (<90 days) is associated with a smaller number of post-operative complications, as compared to the delayed closure (>90 days) which is associated with higher rate of complications.
- Loop ileostomy is associated with the least complication rates, whereas ileo-transverse stoma, loop colostomy and barrel ileostomy closure is with higher rate of anastomotic leak. Bowel luminal disparity could be the possible reason for higher rate of leak in such stoma closure.

Summary

Retrospective study consisting of 40 Operated cases of Intestinal stoma closure of abdomen selected from surgical units of Teaching Hospital from May 2018 to April 2020. All case of this study group were subjected to preoperative standard investigations and stoma closure was performed with suitable standard surgical procedures adopted. The results obtained in the present study were analysed and following conclusions were drawn.

- Among 40 patients anastomotic leak is most common complication followed by obstruction due to stenosis or stricture and wound site complications
- Abdominal tuberculosis is the commonest comorbidity associated with the overall post-operative complications, anastomotic leak and mortality.
- 3 out of 3 patients with anastomotic leak had decreased albumin.
- There is higher probability of anastomotic leak with the lower values of albumin and protein.
- Early closure of the stoma (<90 days) is associated with a smaller number of post-operative complications.
- 3 out of 3 patients with anastomotic leak were repaired after 90 days
- Early closure of the stoma (<90 days) is associated with a smaller number of post-operative complications.
- Bowel luminal disparity could be a possible reason for higher rate of leak in such stoma closure.

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