

A Study on Indications of Intestinal Stoma

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Abstract

Background: Stoma is a surgically created opening in the anterior abdominal wall. The purpose of stomas are divert the feces away from the distal bowel loops in order to relieve obstruction or to heal distal anastomosis. Our purpose in this study is to identify various indications of intestinal stoma.

Methods: Prospective study conducted on elective and emergency cases underwent intestinal stoma construction who was admitted in Government medical college Kota and patients was included those who come under the inclusion criteria.

Results: Most common indication of stoma construction was enteric fever (35%), followed by GI malignancy (16.6%). It is due to because typhoid fever is most common in our study geographical area and representing increase trend of malignancy in our society. It showed there is strong significant relationship between indication of stoma and stoma construction ($p=0.0001$).

Conclusion: In conclusion the study showed stoma construction high in adult and old age group, mostly done as an emergency procedure compared to elective procedure. Surgeries resulting in stomal complications show a higher frequency of complication in loop ileostomy and in male gender. Enteric fever was the most common cause of stoma formation.

Keywords: Stoma, Elective, Emergency.

Introduction

Stoma is a surgically created opening in the anterior abdominal wall. The purpose of stomas are divert the feces away from the distal bowel loops in order to relieve obstruction or to heal distal anastomosis ¹.

Stomas are classified temporary stoma or permanent stoma based on the need ². After construction of stoma, it produces multiple complications ³. Most of the stoma complications are minor, can be managed with proper care, but major complications requires intervention by means of surgery which produce high morbidity and mortality⁴.

The basic types of stomas derive their name from the gastrointestinal segment in which they are sited. For example, gastrostomy in stomach, jejunostomy in jejunum, ileostomy in ileum, caecostomy in caecum and colostomy in colon.

Indications for ileostomy are intestinal obstruction due to benign or malignant disease, perforation with peritonitis, ulcerative colitis or Crohn's disease and mesenteric ischemia⁵. Indications for colostomy are colonic growth, colorectal malignancies, and peritonitis due to perforation, anorectal malformations, and high anal fistula.

Multiple factors play a role in construction of stoma rather than primary resection anastomosis. They are blood loss, peritonitis, co morbidity of the patient, contamination, and other injuries associated with bowel injuries.

Multiple Factors are responsible for different type of complications⁶. They are patient's factors such as age, obesity, diabetes and ability to care stoma, timing of surgery, preoperative marking and education, surgeon experience, emergency v/s elective creation, location of stoma⁷, ileostomy Vs colostomy⁸, co morbidity⁹, and quality of life¹⁰⁻¹²

Our purpose in this study is to identify various indications of intestinal stoma.

Materials and Methods

Place of study: All surgical units of Dept of general surgery, Govt. medical college & associated group of hospitals, Kota.

Study design: Prospective study

Study duration: JULY 2018 to DEC 2019

Sample size: 60 Patients

Study tool: Data was collected from all patients who was admitted in Government medical college Kota

and patients was included those who come under the inclusion criteria.

Inclusion criteria

- All patients male and female underwent stoma construction.
- All elective and emergency cases underwent intestinal stoma construction.

Exclusion criteria

- Patients underwent urinary stoma construction.
- Patients underwent stoma construction as an indication for gynecological disorder.
- Psychological and biochemical complications were excluded from the study.

Follow up

Follow up of the patients was done at 4 wks, 8 wks, 12 wks, 18wks, 24 wks, either by phone or by interview

Statistical method

Descriptive analysis was carried out in the study. Significance was analyzed by using Chi-square test. The statistical software used was SPSS 22.0 version and Microsoft and excel used for generate table and graph.

Results

This observational study consisted of 60 patients who were admitted to Department of General Surgery, Government Medical College, Kota and underwent stoma during JULY 2018 to DEC 2019.

All cases underwent detailed preoperative assessment, their preoperative findings, indications for stoma construction and post operative complications and various complications related to stoma formation were recorded meticulously as per protocol. The findings were analyzed and tabulated. The following observations were made:-

Table 1: Age distribution

Age (Years)	Number of Patients	Percentage
<1 Yr	3	5
2-15	4	6.66
16-25	7	11.66
26-35	22	36.66
36-45	7	11.66
46-55	11	18.33
56-65	5	8.33
>65	1	1.66
Total	60	100

Our study included 60 patients who underwent surgery for various indications and stoma constructions. There were two peak age group, first one was seen in the 26-35 years (36.66%) and second 46-55 years (18.33%). Most of the patients age group between 26-55 years (66.66%) likely underwent stoma construction. It showed that there was significant relationship between age of patient and stoma construction. (p=0.02).

Table 2: Sex Distribution

Sex	Number of Patients	Percentage
Male	35	58.33
Female	25	41.66
Total	60	100

Our study included 60 patients who underwent surgery for various indications and stoma constructions. In this study 58.33% were male and 41.66% were female. It shows there is no significant relationship between sex of the patient and stoma construction (p=0.335).

Table 3: Mode of Surgery

Mode of Surgery	Frequency	Percentage
Elective	10	16.66
Emergency	50	83.33
Total	60	100

Out of 60 patients 16.66% patients underwent stoma construction as a elective procedure compared 88.3% patients underwent stoma construction as a emergency procedure. Stoma was constructed both in elective and emergency setting. But mostly it was undertaken as a emergency procedure. It showed there is significant relationship between mode of surgery and stoma construction (p=0.009).

Table 4: Duration of Hospital Stay

Duration (No. of Days)	Frequency		
	EL	EM	Total
<10	3 (30%)	5 (10%)	7 (11.66%)
11-20	5 (50%)	26 (52%)	32 (53.33%)
21-30	2 (20%)	14 (28%)	16 (26.66%)
>31	-	5 (10%)	5 (8.33%)
Total	10	50	60

Out of 60 patients most patient stayed in hospital 11 to 20 days (53.33%). Out of 50 emergency patients, 52% stayed for 11-20 days and in elective procedure out of 10 patients, 50% stayed for 11-20 days.

Table 5: Primary indication for intestinal stoma

Indication for Stoma	Frequency	Percentage
Enteric fever	21	35
Anastomotic leak	2	3.33
Volvulus	3	5
Adhesive Intestinal Obstruction	8	13.33
Perianal injury	3	5
Hollow Viscus Perforation	3	5
GI Malignancy	10	16.66
Blunt Trauma Abdomen	4	6.66
Mesentric Ischemia	1	1.66
Strangulated Hernia	2	3.33
Congenital Anomalies	3	5
Total	60	100

Most common indication of stoma construction was enteric fever (35%), followed by GI malignancy (16.6%). It is due to because typhoid fever is most common in our study geographical area and representing increase trend of malignancy in our society. It showed there is strong significant relationship between indication of stoma and stoma construction (p=0.0001).

Table 6: Secondary indication for intestinal stoma

Indication for Stoma	Frequency	Percentage
Ileal Perforation	26	43.33
Intestinal gangrene	8	13.33
Intestinal Obstruction	16	26.66
Sphincter Injury	3	5
Colonic Perforation	3	5
Jejunal Perforation	1	1.66
Ano Rectal Malformation	2	3.33
Long Segment Hirschprung Disease	1	1.66
Total	60	100

In secondary cause most common indication for stoma constructions was Ileal perforation (43.3%) followed by Intestinal obstruction (26.6%).

Discussion

From ancient time stoma formation was an important life saving procedure. Indication for stoma formation varies from olden days to current era. Olden days, the most common indication for stoma construction was intestinal obstruction and warfare injuries. Now indication varies from malignant conditions like colonic malignancies and colorectal malignancies. Fecal diversion remains an effective option to treat a variety of gastrointestinal and abdominal conditions. Ileostomy and colostomy are commonly made intestinal stoma in

surgery. The first surgical stoma was created more than 200 yrs ago.

In our study 60 patients undergoing stoma construction, the most common primary indications for stoma construction was ENTERIC PERFORATION (35%) followed by G.I.MALIGNANCY (16.66%) and.

Our study data is similar to AHMAD Z et al in which Enteric perforation (38%) was the most common indication for stoma construction. Similarly A study in AKRAM RAJPUT¹³ et al demonstrated typhoid perforation (66%) most common indication. However the 2nd most common cause of the study by AHMAD Z et al was tuberculosis (18%) and in AKRAM RAJPUT et al iatrogenic trauma (10.7%) which is contrary to our study.

This study was in contrast from the PORTER¹⁴ et al and AKEEL M.A.FAHAM et al in which main indication was malignancy 66% and 64% respectively. In our study Enteric perforation was most common cause because Typhoid fever is Quite common in our study geographical area. Typhoid perforation usually occurs in 2nd or 3rd week of illness. The High incidence of typhoid leading to acute abdomen in our subcontinent is alarming and requires further research.

In case of colostomies main indication was malignancy (40%) representing increasing trend in our society. Blunt trauma in perianal area by Road side accidents resulted in 20% colostomies, while congenital anomalies and sigmoid volvulus resulted in 20% AND 13.3% Cases of colostomies respectively.

This study is comparable to QAMAR A.AHAMAD¹⁵ et al in which main indications for colostomy was penetrating injury (32.6%), Blunt trauma abdomen (20%) Sigmoid volvulus (12%).

Conclusion

In conclusion the study showed stoma construction high in adult and old age group, mostly done as an emergency procedure compared to elective procedure. Surgeries resulting in stomal complications show a higher frequency of complication in loop ileostomy and in male gender. Enteric fever was the most common cause of stoma formation.

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