

A CLINICAL STUDY ON INDICATIONS AND COMPLICATIONS OF INTESTINAL STOMAS

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Abstract

Background: Stomas are openings made on the surface of a part of a hollow viscus, usually a portion of the GIT in order to extrude its contents to the exterior. Apart from stomas constructed from a portion of GIT, there are also various different types of stomas constructed from non GIT sites viz ureter and bladder which serve to direct a stream of urine either directly or through an intestinal conduit into an appliance fitted directly in the skin. The indications and techniques of stomas are thus varied and the complications depend to an extent on the technical expertise of the surgeon. **Materials and Methods:** The study included 60 patients admitted in GAUHATI MEDICAL COLLEGE and later operated and managed with a stoma were closely followed up from the date of admission to the date of discharge and the above perspectives were studied. **Result:** Stoma was most commonly constructed in males in the age group of 36-45 and 56-65. It was most commonly constructed for diversion of enteric contents on an emergency basis. Overall, benign disorders accounted for most cases and hollow viscus perforation, commonly involving the ileum and appendicular base was the commonest cause. Hollow viscus perforation was the main indication for surgery which accounted for nearly 40% followed by malignant intestinal obstruction (16.66%). In our study, 60% patients underwent a loop ileostomy, which was the commonest procedure done followed by a transverse loop colostomy (20%). Of the 60 patients, only 6.66% had a permanent stoma while 93.33% had a temporary stoma which was eventually reversed. Local sepsis was the commonest complication associated with a stoma which was present in 8.33% of the patients. However, the majority of patients (80%) did not present with any complications. Other complications which were observed were stoma necrosis, parastomal hernia, stoma prolapse and stoma retraction. **Conclusion:** Overall, benign disorders accounted for most cases and hollow viscus perforation, commonly involving the ileum and appendicular base was the commonest cause. The type of stoma did not influence the advent of complications, although it is worth noting that patients with transverse loop colostomy did not have any complications. Most patients with poor compliance were managed conservatively and only two patients, with a hernia and a prolapse needed an operative interference.

INTRODUCTION

Stomas are openings made on the surface of a part of a hollow viscus, usually a portion of the GIT in order to extrude its contents to the exterior. They can be made on a temporary or a permanent basis and can be constructed surgically on an emergency or elective basis. The various surgically constructed forms of stomas include gastrostomy, ileostomy and a colostomy.

Apart from stomas constructed from a portion of GIT, there are also various different types of stomas constructed from non GIT sites viz ureter and bladder which serve to direct a stream of urine either directly or through an intestinal conduit into an appliance fitted directly in the skin. The indications and techniques of stomas are thus varied and the complications depend to an extent on the technical expertise of the surgeon.

Stoma is a life saving procedure and even though the first stoma was created more than 100 years ago, it

continues as an important tool in the surgeons' armamentarium. The incidence of permanent stomas like the end colostomy and ileostomy has been decreasing due to more sphincter saving procedures and technological advancements in the form of stapling devices, however this has led to an increase in the incidence of temporary stomas like the loop ileostomy which are more difficult to manage. The surgeon's role does not end with mere construction of a stoma, but also continues in educating the patient in proper stomal care and in helping the patient deal with the emotional issues concerning it. Even though a stoma has evolved from a hastily constructed, foul smelling, unsightly structure to a more odourless, barely noticeable and a continent opening, the issues mentioned above continue to haunt patients. Hence, I hope my research regarding the proper indication, technique and management of stomas would be well received by surgeons and would help in making accurate on table decisions and device post operative management strategies which would alter the life of many patients.

AIMS AND OBJECTIVES:

1. To study the various indications of intestinal stomas.
2. To study the complications of intestinal stomas and their management.

MATERIALS AND METHODS

The study was conducted on 60 patients admitted to Gauhati Medical College and Hospital and subsequently managed with stoma.

Inclusion Criteria

All patients who were admitted in GAUHATI MEDICAL COLLEGE, in the Department of General Surgery between 1st June 2020 to 31st May 2021 and managed with a stoma were taken for study.

Exclusion Criteria

1. Patients who were managed with a stoma done elsewhere and referred to our hospital for further care were not included in the study.
2. Paediatric cases were excluded from the study.
3. Stomas involving upper GIT – oesophagus and stomach, constructed for feeding purposes like jejunostomy and those involving non-GIT sites viz. Urethrostomy were excluded from the study.

Data entry and analysis was done using GraphPad InStat 3, a software program developed by GraphPad Software. Descriptive study like mean and standard deviation were used. Inferential statistics were used to analyze the statistical difference amongst the groups like, Independent samples T –test to compare mean values between methods and Chi-square test to compare proportion of the two values. The observation was analyzed statistically and concluded. (P value <0.05 – significant).

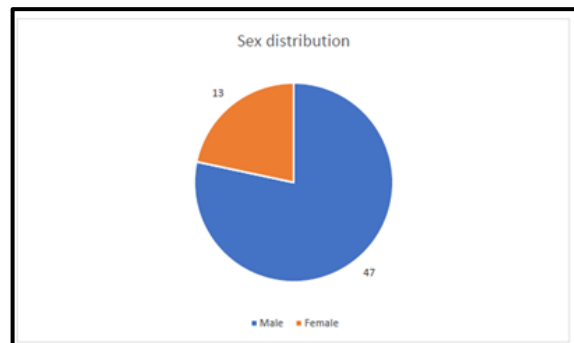
RESULTS

A total number of 60 cases managed with stoma are studied

1. Age

A total of 60 patients were included in the study. The maximum number of patients were in the age group of 36-45 and 56-65 (n=16).

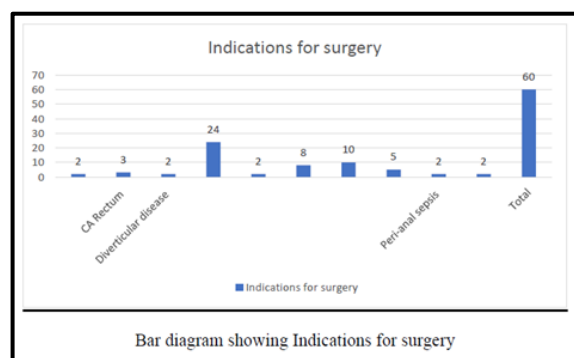
2. Sex



Of the total 60 patients included in the study, 47 were male patients and 13 were female patients

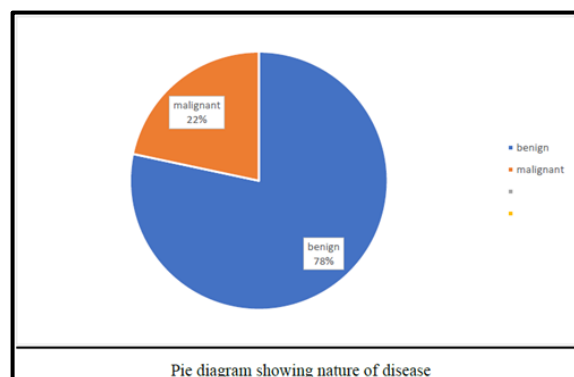
3. Indications

Hollow viscus perforation was the main indication for surgery which accounted for nearly 40% followed by malignant intestinal obstruction (16.66%).



4. Nature of Disease

Of the 60 patients for whom a stoma was constructed, benign diseases accounted for 78.33%.



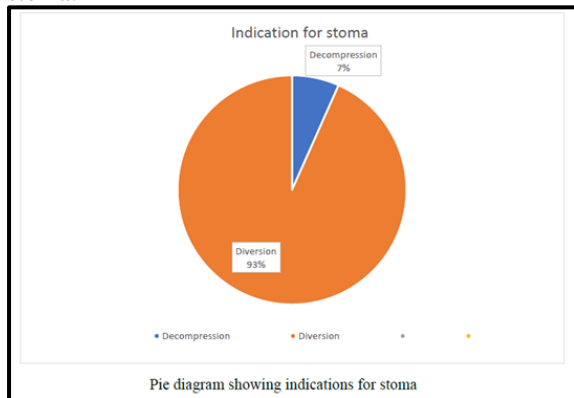
5. Nature of presentation

93.33 % of the total patients presented as an acute emergency and only 6.66% patients had an elective indication for surgery.

6. Indications

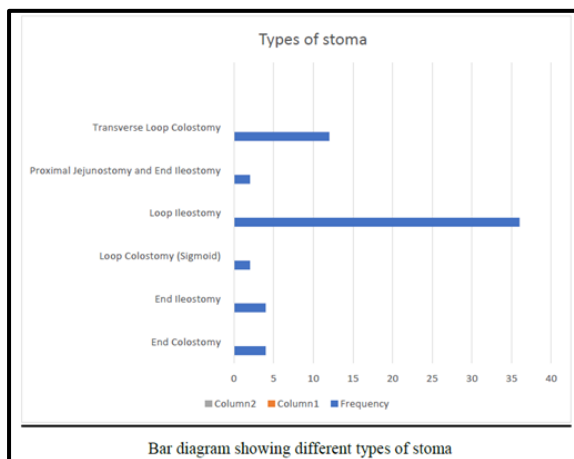
Indication for Stoma

Of the 60 patients, 93.33 % needed a stoma for diversion of the enteral contents and only 6.66% needed decompression as the principle behind a stoma.



7. Types of stoma

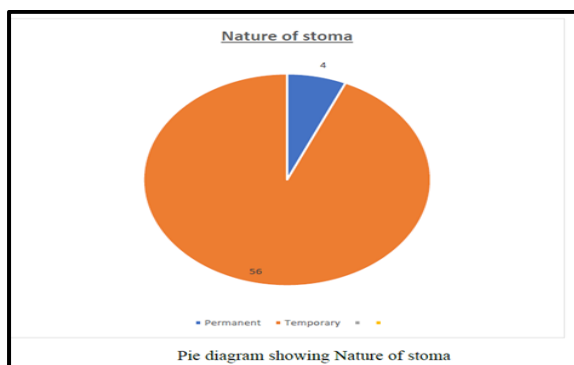
Of the 60 patients, 60% patients underwent a loop ileostomy, which was the commonest procedure done (n=36) followed by a transverse loop colostomy (20%).



8. Nature

Nature of stoma

Of the 60 patients, only 6.66% had a permanent stoma while 93.33 % had a temporary stoma which was eventually reversed.



9. Complications

Local sepsis was the commonest complication associated with a stoma which was present in 8.33% of the patients. However, the majority of patients (80%) did not present with any complications (n=48).

10. Complications associated with each type of stoma

Of the 60 patients with a stoma, Loop ileostomy was associated with maximum number of complications while transverse loop colostomy was not associated with any complication at all. However, this data was not found to be statistically significant ($p < 0.05$) and hence loop ileostomy cannot be assumed to be more morbid than the other procedures.

11. Compliance

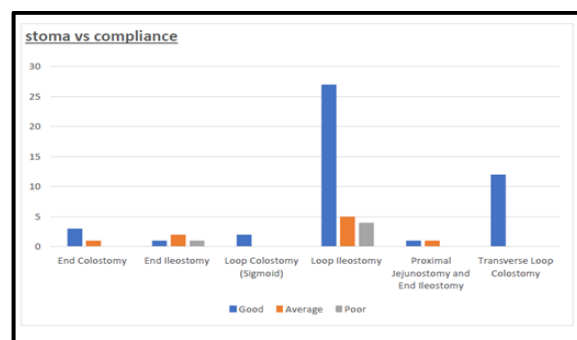
Of the 60 patients, most of them (76.66%) showed good compliance with the procedure.

12. Compliance with different complications of stoma

Of the 60 patients, local sepsis as a complication resulted in a poor compliance in all patients while even certain high risk complications like prolapse and retraction were well tolerated.

13. Compliance with different types of stoma

Type of stoma vs compliance-



Loop ileostomy was commonly associated with most complications and this had an overall impact on the patient compliance. 4 patients with loop ileostomy showed poor compliance. This data was not shown to have any statistical significance ($p < 0.05$) and hence it is safe to say that loop ileostomy although shown to be numerically associated with poor patient compliance, is not inferior to any other type of stoma constructed. It is worth noting that transverse loop colostomy was not associated with any complications at all.

Table 1: Age distribution of patients studied.

Age groups (years)	Frequency	Percentage
15-25	12	20
26-35	06	10
36-45	16	26.66
46-55	10	16.66
56-65	15	25
>65	01	1.66
Total	60	100

Table 2: Sex distribution of patients studied

Sex	Frequency	Percentage
Male	47	78.33%
Female	13	21.66%
Total	60	100

Table 3: Indications for surgery

Diseases	Frequency	Percentage
Blunt abdominal trauma	02	3.3
CA Rectum	03	5
Diverticular disease	02	3.33
Hollow-viscus Perforation	24	40
Inflammatory bowel disease	02	3.33
Intestinal Obstruction – Benign	08	13.33
Intestinal Obstruction – Malignant	10	16.66
Penetrating Abdominal trauma	05	8.33
Peri-anal sepsis	02	3.33
Acute Mesenteric Ischemia	02	3.33
Total	60	100

Table 4: Nature of presentation

Nature of presentation	Frequency	Percentage
Elective	04	6.66
Emergency	56	93.33
Total	60	100

Table 5: Complications of stoma

Complications	Frequency	Percentage
Nil	48	80
Hernia	02	3.33
Local Sepsis	05	8.33
Necrosis	03	5
Prolapse	01	1.66
Retraction	01	1.66
Total	60	100

Table 6: Complications associated with each type of stoma-

Complications	End colostomy	End ileostomy	Loop colostomy (sigmoid)	Loop ileostomy	Proximal jejunostomy and end ileostomy	Transverse loop colostomy
NIL	03	01	01	29	02	12
HERNIA	00	02	00	00	00	00
LOCAL SEPSIS	00	01	00	04	00	00
NECROSIS	00	00	00	03	00	00
PROLAPSE	01	00	00	00	00	00
RETRACTION	00	00	01	00	00	00

Table 7: Patient compliance to the procedure

Compliance	Frequency	Percentage
Good	46	76.66
Average	09	15
Poor	05	8.33

Table 8: Complication of stoma vs compliance

	Good	Average	Poor
Nil	42	06	00
Hernia	01	01	00
Local sepsis	00	00	05
Necrosis	01	02	00

Prolapse	01	00	00
Retraction	01	00	00
Total	46	09	05

DISCUSSION

This study was on indications and complication of intestinal stoma in 60 patients. The results were analyzed and compared with other studies published in literature.

- Our study showed that the maximum number of patients were in the age group of 36-45 and 56-65. Most of the patients belonged to two age groups (36-45) and (56-65) n=16 & 15 respectively. Only one patient presented above the age of 65. The high incidence of cases in the above age group could be attributed to the incidence of malignancies, inflammatory bowel disorders and intestinal perforations, all of which present most commonly in the above age groups. Shyam Bhutra et al (2019) found in their study that there were two peak age group 31-45 year and 45-60 years in which more stoma formation occur.^[1] Pandiaraja et al study (2021) shows stoma creation is higher in the adult and old age group.^[2]
- The youngest patient was 18 years of age and the oldest patient was 75 years of age.
- Of the total 60 patients included in the study, 47 were male patients and 13 were female patients.
- Hollow viscus perforation was the main indication for surgery which accounted for nearly 40% followed by malignant intestinal obstruction (16.66%).
- Of the 60 patients for whom a stoma was constructed, benign diseases accounted for 78.33%.
- Stoma was most commonly constructed on an emergency basis which accounted for 93.33% of the cases (n=56). Similarly, diversion was the most common indication for stoma accounting for 93.33% (n=56). Qureshi et al (2018) in a study on cases who had emergency and elective stoma creation due to colorectal surgery reported that the surgeons preferred ileostomy under elective conditions whereas colostomy was the most common procedure in emergency surgery. In this study, diverticular perforation and colon adenocarcinoma are shown as the most common indications for emergency stoma.^[3]
- Of the 60 patients, 93.33 % needed a stoma for diversion of the enteral contents and only 6.66% needed decompression as the principle behind a stoma.
- In our study, 60% patients underwent a loop ileostomy, which was the commonest procedure done followed by a transverse loop colostomy (20%).
- Of the 60 patients, only 6.66% had a permanent stoma while 93.33 % had a temporary stoma which was eventually reversed.

- Local sepsis was the commonest complication associated with a stoma which was present in 8.33% of the patients. However, the majority of patients (80%) did not present with any complications. Other complications which were observed were stoma necrosis, parastomal hernia, stoma prolapse and stoma retraction.
- Of the 60 patients with a stoma, Loop ileostomy was associated with maximum number of complications while transverse loop colostomy was not associated with any complication at all.
- In our study, most of the patients (76.66%) showed good compliance with the procedure.
- Of the 60 patients, local sepsis as a complication resulted in a poor compliance in all patients while even certain high risk complications like prolapse and retraction were well tolerated.
- Loop ileostomy was commonly associated with most complications and this had an overall impact on the patient compliance. 4 patients with loop ileostomy showed poor compliance. Transverse loop colostomy was not associated with any complications at all.

CONCLUSION

Stoma was most commonly constructed in males in the age group of 36-45 and 56-65. It was most commonly constructed for diversion of enteric contents on an emergency basis. Overall, benign disorders accounted for most cases and hollow viscus perforation, commonly involving the ileum and appendicular base was the commonest cause. Predictably, temporary stomas were most commonly constructed with loop ileostomy being the commonest. 76% of the patients did not have any complications and in the remaining few, local sepsis was the most commonly encountered. Patient compliance ranged from good to poor and the single most important factor which predicted a uniformly poor outcome was local sepsis. The type of stoma did not influence the advent of complications, although it is worth noting that patients with transverse loop colostomy did not have any complications. Most patients with poor compliance were managed conservatively and only two patients, with a hernia and a prolapse needed an operative interference. Overall, most patients tolerated the surgery and post operative period well.

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