

Original Research Article

Study of intestinal stoma: our experience at Rajarajeswari Medical College and Hospital

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ABSTRACT

Background: Stoma is an artificial opening of intestinal or urinary tract to the abdominal wall. The purpose of the present study was to identify indications for commonly performed intestinal stomas and to study complications related to it.

Methods: This is a retrospective descriptive observational study carried out in a surgical unit of Rajarajeswari Medical College and Hospital, Bangalore from August 2015 to August 2016. Data was collected by previous record files including age, gender, history of presenting illness, indication, type of stoma, type of surgery, appropriate operative findings and follow up of the cases. The results were collected, analysed and compared with other studies.

Results: A total of 25 patients were evaluated age ranged between 20-70 years. Out of 25 patients 17 were admitted in emergency while 8 in out-patient department. The most common type of stoma made was loop ileostomy (44%) followed by end ileostomy (28%), end colostomy (16%) and loop colostomy (12%). Main indication for a stoma formation was enteric perforation (56%) followed by carcinoma colon and rectum (32%), perianal sepsis (21%), Koch's abdomen (11%), penetrating injuries (11%). Of the various complications encountered with intestinal stoma, peristomal skin Excoriation (16%) was the most common complication observed followed by other complications as mentioned in study.

Conclusions: In spite of enormous exposure of general surgeons towards stoma formation the complications are inevitable. Early detection of complication and its timely management is the keystone.

Keywords: Intestinal stoma, Indications, Complications

INTRODUCTION

The word "Stoma" comes from the Greek word meaning mouth or opening.¹ An intestinal stoma is an opening of the intestine on anterior abdominal wall made surgically.² Stomas are used to divert the fecal stream away from distal bowel in order to allow a distal anastomosis to heal as well as to relieve obstruction in emergency situation. It may be temporary or permanent; depending on their role, though a lifesaving procedure, it may result in significant number of complications.¹ Complications are divided into

early complications (up to 30 days after operation) and late complications (more than 30 days after operation).

The first successful deliberate colostomy operation was in 1793, when Duret formed an iliac colostomy for imperforate anus in a 3-dayold child. The patient lived for 45 years after the operation.³

An ileostomy was first advocated in ulcerative colitis in 1912 but was not widely used until Brooke demonstrated his everted ileostomy in 1952.⁴ Various indications for

which intestinal stomas are formed: ulcerative colitis, bowel obstruction, cancer of colon and rectum, Crohn's disease, congenital bowel defects, uncontrolled bleeding from large intestine, injury to the intestinal tract, inflammatory bowel disease, ischemic bowel disease, carcinoma urinary bladder and spinal cord injury.⁵ Stoma, though it is a lifesaving procedure, it carries significant number of complications. Despite extensive surgical expertise, complications after stoma creation still occur and often cause social isolation and a significant reduction in the quality of life. Factors affecting type and frequency of complications include surgical specialty, surgeon experience, emergency selective creation, appropriate preoperative marking and education, and patient issues such as age, obesity, diabetes and ability to care for stoma.

The aim of our study is therefore to evaluate our own experience and determine the complications and type and location of the respective ostomy.

METHODS

This is a retrospective descriptive observational study carried out in surgical unit of Rajarajeswari Medical College and Hospital from August 2015 to August 2016. All patients were admitted through emergency and Out-patient department basis and underwent surgery for various indications and were followed up to note any complications which resulted in the creation of intestinal stomas and who fit in to inclusion criteria. Data was collected by previous records available in medical record section- history taken included age, gender, indication, type of stoma, type of surgery and complications observed. The results were collected, analysed and compared with other studies. All patients who underwent elective and emergency intestinal stoma construction for any underlying cause were included in the study. All patients less than 20 years, patients with urinary diversion procedures were excluded from the study.

RESULTS

Out of 25 patients, 16 were male and 9 were females. The mean age was 45.5±28.01 years with a range of 22 to 70 years. 17 stomas were made in emergency and 8 were Elective procedure. The type of stomas performed was:

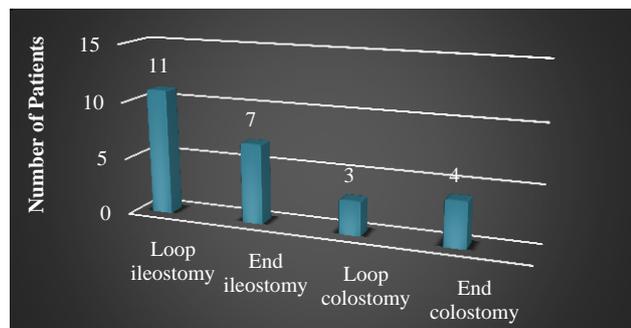


Figure 1: Types of stomas performed.

There were 18 cases of ileostomy performed out of these, 11 (44%) were loop ileostomy, 7 (28%) end ileostomy. Colostomy was performed in 7 patients of which 1 (4%) was sigmoid colostomy, 2 (8%) were transverse colostomy and 4 (16%) underwent end colostomy.

Indications for ileostomy

In our study ileostomy was performed maximum in case of multiple enteric perforation 10 patients (56%), penetrating abdominal injury 2 patients (11%) on emergency basis, followed with carcinoma colon - ascending and transverse colon 4 patients (22%), intestinal tuberculosis 2 patients (11%).

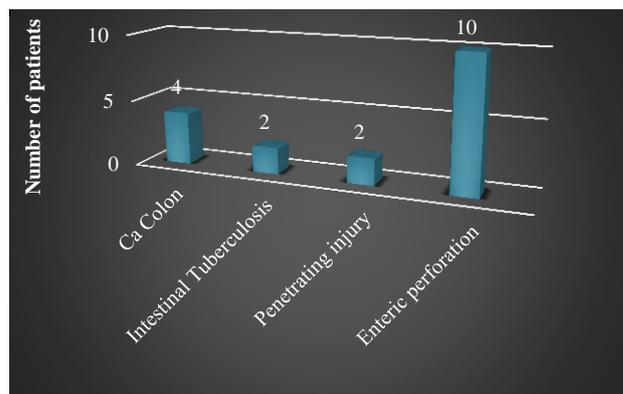


Figure 2: Indications for ileostomy.

Indications for colostomy

In our study colostomy was performed for carcinoma colon and rectum 4 patients (57%) - loop transverse colostomy 1 and end colostomy 3 and for perianal sepsis 3 patients (43%) all 3 underwent loop transverse colostomy.

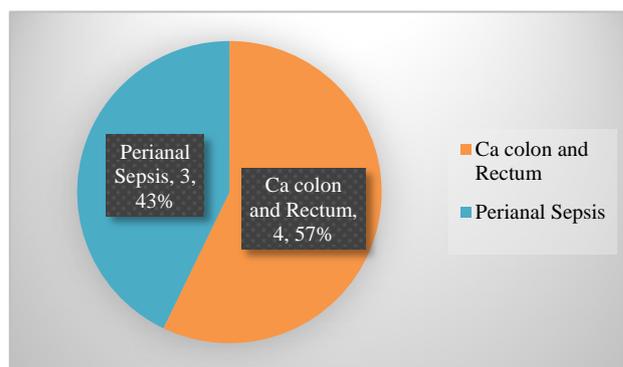


Figure 3: Indications for colostomy.

Complications

The overall complications rate encountered in our study was 32%. The complications were again redistributed as the ones observed in the patients who underwent ileostomy and colostomy. Skin excoriation (16%) was the

most common complication following ileostomy followed with retraction of stoma, necrosis, stomal diarrhea and parastomal hernia of 4% which was re-explored and operated, no stomal prolapse was seen in our study.

Table 1: Complications of stoma.

Complications	Number of patients
Skin excoriation	4
Necrosis	1
Retraction	1
Parastomal hernia	1
Stomal diarrhea	1
Prolapse	0

DISCUSSION

Fecal diversion remains an effective option to treat a variety of gastrointestinal and abdominal conditions.⁶ Ileostomy and colostomy are commonly made intestinal stomas in surgery. The first surgical stoma was created more than 200 years ago. The earliest stomas were cutaneous fistulas resulting from penetrating abdominal injuries or complications of intestinal diseases such as incarcerated hernias.⁷ A number of patients undergo surgeries for fecal diversion. But despite a great number of such surgeries done, complications are almost inevitable.

Patients undergoing stoma formation are at risk of developing a wide range of complications following surgery. There are many factors suggested to predispose to stoma complications like high body mass index, inflammatory bowel diseases, use of steroids and immunosuppressant drugs, diabetes mellitus, old age, emergency surgery, surgical technique and surgeons' experience.⁸

In our study most common stoma made was loop ileostomy (44%) was followed by end ileostomy (28%) and end colostomy (16%) and loop colostomy (12%).

In Shah et al study similarly loop ileostomy was the most common stoma formed (70%) followed by loop colostomy (17%).¹¹

Robertson et al reported stoma related complications rate 10 and 70%, which may be because of varying lengths of follow up.⁹ Many surgeons consider loop ileostomy as preferred method for temporary fecal diversion. Loop ileostomy is considered generally easier to manage and is not associated with a greater rate of complications (in its construction and closure).

Wexner et al reported a complication rate of 41% associated with loop ileostomy construction, with 6% requiring surgical intervention.¹¹

The most common indication of stoma formation in our study was enteric perforation 10 cases (56%) followed by carcinoma rectum and colon in 8 cases (32%).

This data is similar to that in the study by Rajput et al¹² in which enteric perforation was the most common indication of stoma formation (60%). Similarly a study in Aziz et al demonstrated typhoid perforation (66%) and tuberculosis as the most common cause of stoma formation.¹³ In a study of Safirullah et al showed colorectal carcinoma (22%) as the most common cause of stoma formation followed by trauma (20%) and typhoid perforation (20%).¹⁰

Typhoid ileal perforation usually occurs in 2nd or 3rd week of illness. In the present study, loop ileostomy for multiple typhoid perforations and simple closure with proximal ileostomy were performed. The high incidence of unrecognized abdominal tuberculosis and typhoid leading to acute abdomen in our subcontinent is alarming and requires further research.

In our study, 32% cases developed some sort of complications of which the most common complication reported in our study peristomal skin irritation and erythema (16%) followed by necrosis 4%, retraction 4%.

This percentage is near to the study by Pearl, Duschesne and Harris who reported complications in 26%, 25% and 25% cases respectively.¹⁴⁻¹⁶ The early reported incidence of peristomal skin irritation ranges from 3-42%. The degree of irritation ranges from mild peristomal dermatitis to full thickness skin necrosis to ulceration. A study by Ratliff et al has shown peristomal irritation in 53% cases while Pearl et al showed peristomal skin erythema as the most common complication in 42%.^{14,17} Muneer reported skin excoriation in 18% cases.¹⁸ Safirullah et al reported skin erythema in 12% followed by prolapsed (6%) and retraction (4%).¹⁴

CONCLUSION

Surgeries resulting in stomal complications show a higher frequency of complication in ileostomy. Enteric fever was the most common cause of stoma formation. Peristomal skin irritation is the most common of all complication due to nature of the spilled content. No refashioning of stoma done in this study, as most complications were treated conservatively and 1 patient was advised for parastomal hernia repair at later stage due to abdominal wall laxity. of the patients coped up well, with adjustments required after creation of ostomy - through psychological support provided by clinicians and Enterostomal therapist and reassurance about stoma closure within few weeks for temporary stoma.

This study makes important contributions to the evidence related to ostomy complications and risk factors. Studying the incidence and severity of ostomy

complications and the factors that lead to the development of such complications contributes new scientific knowledge and provides a foundation upon which to build future research. This new information may potentially lead to the development of interventions that will improve care and quality of life for individuals living with an ostomy.

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