ORIGINAL RESEARCH PAPER

General Surgery

KEY WORDS: Intestinal stoma, Complications,End colostomy, Loop ileostomy,loop colostomy, Parastomal hernia,Retraction.

STUDY OF INTESTINAL STOMAS

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ABSTRACT

BACKGROUND AND OBJECTIVES
Intestinal stoma is a very commonly performed procedure with a high rate of complications. This study was undertaken to study the various types of complications in different types of intestinal stomas and their management.
METHODS Complications were studied in 50 patients undergoing stoma formation at NRI Medical College & hospital in aperiod of 2 years Both elective and emergency procedures were included in the study. Data was collected by following up the patient ostoperatively either by phone or in person.
RESULTS
Various types of complications in each stoma types were studied. Complication rates in emergency and elective stoma formation was studied.
INTERPRETATION AND CONCLUSION
toma formation is associated with ahigh rate of complication.End c olostomy is associated with highest rate of complications.complications are same in emergency and elective procedure.Retraction is most common noted complication and difficult to treat.Loop colostomy seemed to have lesser complications rate as a defunctioning stoma as compared to loop ileostomy.

INTRODUCTION

The word "stoma" is originated from Greek word which means mouth or opening [1]. A stoma is an artificial communication between organs or viscera and the external environment, for feeding, drainage and elimination constructed surgically or appearing inadvertently in case of malignancy, trauma and sepsis or after surgery.

[2]. The most common abdominal stomas are the ileostomy and colostomy [3].

A colostomy is a connection of the colon to the skin of the abdominal wall. An ileostomy involves exteriorization of the ileum on the abdominal skin .The creation of intestinal stomas is an integral component of the surgical management of several disease processes involving the gastrointestinal tract. Despite extensive surgical experience, complications of intestinal stomas still occur [4].

In rare instances, the proximal small bowel may be exteriorized as a jejunostomy. A urinary conduit involves a stoma on the abdominal wall that serves to convey urine to an appliance placed on the skin. The conduit may consist of an intestinal segment, or in some cases a direct implantation of the ureter, or even the bladder, on the abdominal wall.

So,suggestions in the management of stoma, or change in surgical technique which seem to have merit, thereby decreasing the difficulty in adjustment to a colostomy, are well received by the patients and surgeons, and hence is the need for study about the various stomas, the complications associated with it and their management.

AIMS AND OBJECTIVES OF THE STUDY

1. To study the various types of intestinal stomas and their indications.
2. To study the various complications may encountered after construction of intestinal stomas.
3. To study the ways by which these complications can be minimized and managed in a better way.

MATERIALS AND METHODS

Study area - This is a prospective study on a minimum of 50 patients undergoing intestinal stoma construction at NRI MEDICAL COLLEGE & HOSPITAL as an elective procedure or as an emergency procedure during the study period of 2 YEARS.

Type of study : Prospective Study
Duration of study : 2 Years

Statistical analysis : Percentages

Source of Data – Data will be collected from patient records from NRI Medical College &GH in interdepartmental in which stoma's are constructed .Follow up of the patient will be done by patient interview in person or over the phone at 1,2,3,6 months.

INCLUSION CRITERIA

1. All emergency and elective cases undergoing intestinal stoma construction.

EXCLUSION CRITERIA

1. Patients undergoing intestinal stoma construction for urinary and gynaecological problems .
2. Patients in whom follow up was not feasible.

RESULTS

In this study 50 cases underwent Intestinal Stoma construction under elective and emergency procedures in the period of 2 years

Table 1: Age distribution of patients studied

AGE	GROUPS(YRS)	FREQUENCY PERCENT
15-25	3	6%
25-35	7	14%
35-45	12	24%
45-55	11	22%
55-65	10	20%
>65	7	14%
TOTAL	50	100%

A total of 50 patients were included in the study. The maximum number of patients were in the age group of 35-45 yrs. (n=12).

FIGURE -1 Elective v/s Emergency procedures

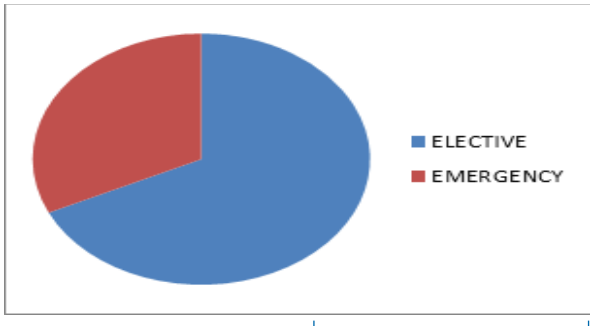
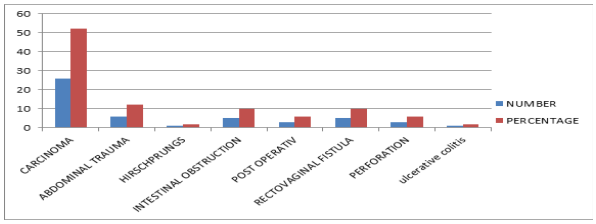
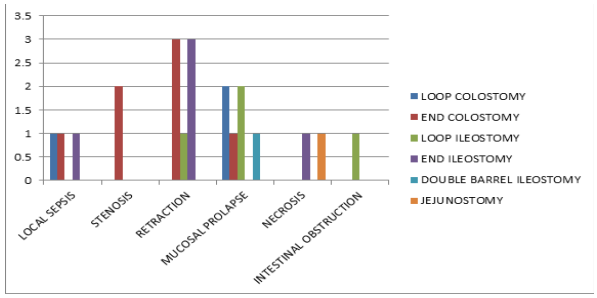


Figure 2 : Indications for stoma construction



Out of 50 patients undergoing stoma construction the main indication was carcinoma(52%) followed by abdominal trauma (12%).

Figure 3 : SPECIFIC COMPLICATIONS IN EACHSTOMA



Complications were seen more in End colostomies as compared to other stoma types .End ileostomy seemed to have more complications as compared to Loop ileostomy.Most common colostomy complication was Retraction followed by Prolapse.

DISCUSSION

Study was conducted in NRI Medical college & Hospital with 50 cases of undergoing Intestinal stomas under Elective and Emergency procedures in the period of 2 years .

A total of 50 patients were included in the study who underwent stoma formation at this hospital for 2 years . The study include both emergency and elective stoma formation.

The stoma site must be in a location that is readily visible to the patient to allow for self-care and stoma should not be in the area of previous scar,para median incision and bony prominence .It should not be in the area of skin fold . Like in obese patients, the stoma should be placed on the higher side of the belly to allow for visualization.Meticulous skin care is mandatory with regular followup of these patients to provide opportunity to enquire and manage such problems. Proper surgical technique, education and counseling to patients with stoma. Stoma closure should always be done after a minimum period of 3 months as it is associated with lesser complications and allows time to gain weight and improve nutrition .

Although many prospective studies in uk (cottam j,Richards k). Stomas complication rates are more common in female than in male [5].But in our study both the sex male and female are in equal proportion with no significant statistical difference.

Obesity is frequently cited in prospective studies [6,7] as having an impact on the development of stoma complications .However no significant difference not in between obese and non obese (BMI <30) patients. As in our study 2 patients with BMI>30 had increase incidence in Necrosis and Retraction in patients with post operative Incisional hernia and Abdominal trauma patient.

The high prevalence of complications identified in this study is comparable with those reported by others (reviewed by Shellito)[8]. Parastomal Hernia formation was the most frequent complication, affecting 13.1% of all colostomies. This remains a difficult complication to treat and, so far, no technical factors have been found to prevent Parastomal hernia occurrence[9,10].

Patients with symptomatic parastomal hernias underwent local repair with prosthetic mesh or relocation of the stoma according to the severity of the hernia. Relocation of the stoma required formallaparotomy and hence higher morbidity. This repair was reserved for difficult hernias.

In our study 1 patient had parastomal hernia he was treated for advanced carcinoma anal canal post operative chemo radiation underwent Abdomino –perineal resection with End colostomy .He was treated with relocation of stoma with formal laporotomy .

Stomal prolapse was found with equal incidence in colostomy and ileostomy. In general, loop colostomies tend to prolapse more often than do end colostomies [68] , and the distal limb is more often involved than the proximal limb. Both the prolapse were mild and asymptomatic and were managed conservatively[11]. In our study the incidence of mucosal prolapse is also same in colostomy and ileostomy and loop colostomy /loop ileostomy has more incidence compared to end colostomy /End ileostomy . Both the studies have similar results .

Intestinal obstruction was seen in 1 patient in our study who underwent Loop ileostomy. The obstruction was due to a food bolus which was suspected after patient gave history of large meal of fibre rich diet. Patient was managed by ileostomy lavage.

Our study was similar to other studies where most common prone for intestinal obstruction in early period (3-6 months)of stoma construction (Shellito PC). [8].Where in cases adhesive bowel obstructed is suspected ,decompressed bowel is seen distally on radiographic studies.Standard care in taken based on length and severity of obstruction. In case of food bolus obstruction with high fiber diet an intial work up with water soluble contrast enema via stoma will be diagnostic and therapeutic .Patients may require mild anaesthesia for comfort and to provide relaxation of the abdominal wall .Surgery is indicated if any pathology.

Necrosis was seen in 2 patients with incresed incidence in End Ileostomy and End Jejunostomy . when compared with colostomy and loop ileostomies .which are identified in the immediate postoperative period. Which requires laparotomy and revision of stomas. Our results are comparable with the similar study by (TURNBULL AND WEAKLEY) where there was increased incidence of necrosis in end ieostomy than the loop ileostomy[12].

Stenosis of the stoma was seen in 2 patients, in our study in End colostomy .All of them required revision of the stoma which was done locally and none of them required a laparotomy. Ischemia is the usual underlying factor in stomal stenosis. This may be apparent acutely immediately after the stomal creation, or may not manifest for months if necrosis is not present. Infection and retraction of stoma may also lead to stenosis[13].

These studies show incidence of Stenosis 2-14% [10,14,15]in the subcutaneous aspect is usually treated with dilation initially; however, multiple sessions are usually required and tissue trauma during mechanical dilation invokes fibrosis which, in turn, results in further stenosis. Definitive treatment requires stoma revision in most cases. Our study comes in this criteria with 9% of incidence .

In one series, 6 of 10 patients were able to avoid stomal revision[16].In other series, 10 of 203 patients with colostomies developed strictures over 5 years, 50% in the first year. Two of these 10 required local revision. Two others required laparotomy and translocation. The remaining 6 did not require surgical intervention. In another series, 5% required translocation [8].

In our study Retraction was noted in 7 patients .3 of 7 patients with end colostomy (11.1%) incidence and 3 of 7 patients with end ileostomy (33.4%) incidence and 1 of 7 patient with loop ileostomy (12.5%) incidence. Other studies by (Park J J, Del Pino A, Orsay C P, et al[14,17] ,Shelito PC [8], Arumugam P J, Bevan L, Macdonald L. et al.[18]) shows incidence of 3 to 17% ileostomies and 6% colostomies ,with early and late complications

In this study when comparing complications in between loop colostomy and ileostomy like local sepsis ,mucosal prolapsed,parastomal hernia ,necrosis,intestinal obstruction

results show increase in incidence in loop ileostomy when compared with loop colostomy (13.6% in loop colostomy and 18.2% in loop ileostomy).

When comparing stoma type, the loop ileostomy was found to have a lower complication rate than loop colostomy. This is consistent with most current trials [19,20] and adds weight to the recommendation that loop ileostomies are to be favoured over loop colostomies in defunctioning low colorectal anastomoses. Although others 14 have found no difference in complication rate between the two defunctioning stomas, the quality of life in patients with an ileostomy is enhanced over those with a colostomy [21].Other studies show End Colostomy found to have a lower complication than other stomas [22].

In other study by Pearl et al [24] reported a complication rate of 25.9% in 610 patients undergoing stoma creation. The most commonly seen early complication in this study was peristomal skin irritation (42.1%). Complications were more frequent with loop ileostomies than with loop colostomies which shows similar complication rates to our study .

In our study incidence of complication noted in both elective as well as emergency procedures have equal incidence (n=25). When compared with other study shows Emergency surgery resulted in a higher stoma complication rate than elective surgery, and a significantly higher morbidity for the patient Stothert et al [25]. A review study of 348 patients in 8 years durarion showing higher incidence of complications in emergency (2 = 0.01, 1d.f.; P = 0.91).

Our results were similar to other studies by (Robertson et al)patients the complication found to be similar in both Elective And Emergency procedures [26]. A prospective study on 408 consecutive patients with either colostomy or ileostomy was conducted over a period of at least 2 years. Both emergency and elective procedures were included. Stoma related complications were analysed at 10 days, 3 months, 6 months, 1 year and 2 years postoperatively.

Robertson et al reported an overall complication rate of 23.5%. Elective and emergency stomas had similar complication rates. Theoverall complication rates between ileostomies and colostomies did not differ .

In our study Local sepsis complications were seen in 3 patients in the form of chemical Dermatitis and folliculitis. Most of the patients were with colostomy. Than the ileostomy with incidence of**(9%:4.5%)** In all of them the Major cause was a lack of proper seal around the stoma and the stoma bag. All of the patients were treated by applying a colostomy paste (colopaste TM) , which formed a protective barrier over the skin. Use of a skin sealant with a copolymer or plasticizing agent without alcohol provides a thin protective film on the skin surface, helps prevent skin stripping of the epidermis during adhesive removal, and acts as a moisture barrier [27]

CONCLUSION

Stoma formation occurred mostly in the patients above the age of 35 -45 years and The most common indication for stoma formation was colorectal carcinoma in the Study group. The result from this study shows that retraction hernia was the most Common type of complication occurring following intestinal stoma formation. which is a difficult problem to treat is best managed by prevention during construction of the stoma. Also end colostomy was the mostcommon type of Stoma that had complications during the course of study. Complication were same in Both patients who underwent stoma formation as an emergency procedure as compared to those undergoing stoma formation as an elective procedure.Among diverting stomas loop colostomy had fewer complications as compared to Loop ileostomy,so loop colostomy should be favoured over loopileostomy in defunctioning low colorectal anastomoses.

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