



## One Year Experience of Stoma Patient at Tertiary Care Hospital

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### ABSTRACT

*Aim/Objectives—The aim of this study was to perform a prospective analysis on indication, complication, outcome of stoma patient between 2012 and 2013 at tertiary care hospital in Mumbai.*

*METHODS—50 Patients in the age group of 18 to 70 operated on emergency and elective basis were studied. Demographic data, indication for stoma, clinical outcomes and stoma-related complication data were collected. Patients were followed up till 6 months or stoma closure.*

*RESULTS—Of the 50 subjects studied, 34 were male (68%) and 16 were female (32%). The mean age of this patient population was 45 years. The most common indication for stoma was colorectal malignancy presenting as lump in abdomen or rectal growth (34%), Followed by Perforative peritonitis. A total of 26 patients (52%) underwent ileostomy and 24 patient (48%) colostomy. 30 patient (60%) had stoma performed on emergency basis were common cause was perforative peritonitis (30%) 15 patient .20 patient (40%) underwent stoma on elective basis, most common indication was for colorectal carcinoma 17 patient (34%). All the complication occurred in ileostomy. 26 patients had complication where in most common complication was peristomal skin excoriation (42%). In this study mortality was 2 patients for ileostomy and colostomy each.*

*CONCLUSIONS: Right loop ileostomy (38%) commonly performed stoma in our study, followed by left end colostomy (24%). 60% of stoma were created in Emergency and remaining 40% in elective setting. Colorectal carcinoma was the most common indication for ostomy followed by typhoid, tuberculosis, gangrenous bowel, traumatic perforation etc. Most complication rate was seen in cases of typhoid perforations 25%, abdominal tuberculosis (20%). Complications were more in ileostomies than colostomies none of the complications were serious or life threatening.*

**KEYWORDS : stoma, indication; complication; outcome.**

### Introduction:

Performing ostomies is a major component of the training general and colorectal surgeon's armamentarium. Proper creation, management, and closure of ostomies is vital for satisfactory treatment outcomes.

Although ostomies used to be performed primarily for the permanent management of faecal output, the majority of ostomies today are created as a temporary measure, either as an end ostomy in the acute setting with later planned takedown and anastomosis, or as a proximal loop diversion to protect a low pelvic or risky anastomosis.

Complications associated with stomas are frequent and run the gamut from technical, mechanical, physiologic, and psychologic. The impact of these complications ranges from simple inconvenience to life threatening.<sup>[1]</sup>

We did a study at our centre to study the indications and the various clinical presentations necessitating stoma procedures and the various complications of the stomas in relation to procedure performed.

### Methods

This was a prospective descriptive observational study carried out at our tertiary center after obtaining permission from the Institutional Ethics Committee. 50 patients of stoma were included in study in the age group of 18-70 years, patients with enterocutaneous fistula and urinary conduits were excluded from the study.

All patients with intestinal stomas operated in our center were recruited in the study. On admission patients history, laboratory investigations (Complete blood counts, renal function test, and liver function test), chest and abdomen x-ray, ultrasonograph or computed topograph if done were recorded.

Final diagnosis, operative findings, procedure done, immediate and late complications were recorded. Details about stoma, appliances, complications and its management were recorded. Patients were followed for about 6 months.

From the above collected data outcomes of the study was calculated as what was the indications (intestinal tuberculosis, enteric perforation, penetrating injury, intestinal obstruction, intestinal malignancy) of commonly performed stomas, what were the common complications (skin excoriation, stoma prolapsed, stoma diarrhea), what were the general problems (anxiety, decreased social interaction) patient were facing due to stoma, excluding end stomas how many stoma closure were done and what was the average duration between stoma creation and stoma closure.

## Results

In our 50 stoma patients, 34 were males (68%), 16 were females (32%). 36% of the patients were below 40 years of age, 36% were between 40-60 years and remaining 28% were below 60 years

Demographic data of the 50 patients included in the study are presented in Table 1. (Table 1 about here)

The mean age of this patient population was 45 years.

In our study 30(60%) stomas were made in emergency setting and 20(40%) stomas were made in elective setting. 50% of the stoma created were permanent and the rest 50% were temporary.

Right loop ileostomy (38%) was the most common stoma in our study followed by end colostomy (24%), transverse loop colostomy (20%).

Table 2. Given below describes the type of stoma performed. (Table 2 about here)

Colorectal malignancy presenting (34%) followed by Perforative peritonitis (30%) 15 patients and intestinal obstruction (28%) 14 patients were the common indications for which stoma was performed. (Table 3,4,5) (Table 3, 4, 5 about here)

In our study peristomal skin excoriation (42%) was the commonest complication seen and it was seen in 11 ileostomy patients. Ileostomy patients developed more complications as compare to colostomy patient.

Two patients of ileostomy (7.6%) and two patients of colostomy (8.3%) expired in our study.

(Table 6) depicts the various complications which occurred in our series. (Table 6 about here)

Stoma made in emergency setting was associated with complications ( $p$  value =0.003). Complications were more common in patients with temporary stoma ( $p=0.001$ ) and in patients who presents with peritonitis ( $p<0.01$ ). It was also noted that patients with typhoid perforations have more complications (25%).

Table below depicts association between complication and presentation (Table 7 about here)

In this study from the table given below it is seen that perforative peritonitis (due to typhoid /tuberculosis gangrene/trauma) had more complication. (Table 8 about here)

## DISCUSSION

Intestinal stomas remain an effective option to treat a variety of gastrointestinal and abdominal conditions. [2] In surgery colostomy and ileostomy are the commonly performed intestinal stomas. This study aimed at studying the indication for ostomy and various complications arising out of ostomy creation.

During the study period, 34 (68%) males and 16 (32%) females ranging from 18– 70 years of age underwent stoma surgery. In this study male patients were twice more common to have stoma than females which was comparable to study done by K Sudarshan et al wherein of the 50 cases 32(64%) were male and 18(36%) were female.[3]

The most common stoma performed in our study was loop ileostomy (38%) followed by sigmoid ileostomy (24%). In a study done by Ahmed Z et al loop ileostomy was performed in 64% and sigmoid colostomy 11% and transverse loop colostomy was performed in 9% cases.[4] Similarly in a study by Shah JN et al loop ileostomy was the most common stoma formed (70%) followed by loop colostomy (17%).[5] Ileostomy accounted for 70% stomas and colostomy 30% in another study by Ghazi MA et al.[6] In a series by Sadrullah et al loop ileostomy was formed in 43% and loop colostomy in 17.4% cases.[7] In present series in elective setting, the commonly performed ostomy was colostomy, in which the left end colostomy (24%) was the commonly made ostomy.

In present series in emergency setting, the commonly performed ostomy was ileostomy, with loop ileostomy (38%) being the most common procedure.

Colorectal carcinomas (56%) was the most common indication for stoma in our study (11 colorectal malignancy presented with intestinal obstruction and underwent emergency stoma creation and while 17 patient presented with colorectal mass without frank obstruction were operated electively) followed by typhoid perforations (12%) 6 patient and abdominal tuberculosis (8%) 4 patient.

In a series by Sadrullah et al colorectal carcinoma (22%) was the most common cause of stoma formation followed by trauma (20%) and typhoid perforation (20%).[7] In a study done by Ahmad Z et al enteric perforation was the common indication (38%) followed by Koch's abdomen in (18%) and carcinoma rectum (11%).[4] In another study by Rajput A et al enteric perforation was the most common indication of stoma formation (60%).[8] Aziz A et al series had typhoid perforation (66%) and tuberculosis as the most common cause of stoma procedure.[2]

Peristomal excoriation of skin (42%) was the most common complication followed by midline wound gape (11.5%), stoma sinking (7.6%), parastomal hernia (3.8%) and stoma blackening (3.8%). This results were similar to study done by Ahmad Z et al in which peristomal skin irritation and erythema was seen in (36%), laparotomy wound infection (13.4%) and peristomal skin infection, abscess formation and fistula formation (8.1%).[4] A study by Ratliff et al has shown peristomal irritation in 53% cases.[9] While Pearl et al showed peristomal skin erythema as the most common complication in 42%. [10] Muneer A reported skin excoriation in 18% cases.[11] Sadrullah et al reported skin erythema in 12% followed by stoma prolapse (6%) and retraction (4%).[7]

Most complication rate were noted in cases of typhoid perforations (25%), followed by abdominal tuberculosis (20%) and colorectal carcinoma (20%) this was comparable with study done by Rajput A et al in which the typhoid related ileostomies had four fold complication rate as compared to those observed with non-typhoid related ileostomies. [8] The highest complication rate in typhoid perforation was attributed to late presentation, delay in operation, multiple perforations, significant peritoneal contamination, marked sepsis and poor nutritional status in patients with typhoid perforation.

As compared to colostomy, ileostomy was commonly associated with higher morbidity. Similar results were also seen in study done by Pearl RK et al. [10]

In our study 28% of the patient presented as intestinal obstruction, 30% as perforative peritonitis and 34% presented with lump in abdomen or colorectal mass diagnosed by per rectal examination and endoscopy. 8% were included in miscellaneous group that include iatrogenic colonic injury, recto urethral fistula, recto vaginal fistula, and perianal wound. Following were the percentile of complications associated with presentation of patient Perforative peritonitis 60%, intestinal obstruction 25% and 15% in other presentations. Perforative peritonitis was significantly associated with complications,  $p$  value  $<0.01$  as compared to intestinal obstruction and other presentation.

In our study 50% of the stoma were temporary and remaining 50% were permanent stomas. Temporary stomas were significantly associated with complications,  $p$  value 0.001 in comparison to permanent stomas.

In our study 58% stomas were performed in emergency, while 42% were performed in elective setting comparable to study by K Sudarshan et al in which 66% Stomas were formed in emergency while

34% stomas were formed electively.<sup>[3]</sup> Where as in a study done by Ahmad et al 97% were emergency stomas and 3% were elective stomas.<sup>[4]</sup> Stomas made in emergency setting were significantly associated with complications, p value of 0.003 as compared to stomas made in elective setting. Similar results were observed in study done by Harris DA et al.<sup>[12]</sup> However according to Duchesne JC et al gender, cancer, trauma, diverticulitis, emergency surgery, ileostomy, and ostomy location/type were not associated with a stoma complication.<sup>[13]</sup>

A significant association between stoma complications and mortality was identified. Age of patient, urgency of surgery and diagnosis were associated with high levels of morbidity and mortality. Stomas are often formed in frail patients unsuitable for anastomosis formation, which explain high mortality in these patients.<sup>[12]</sup> In our study mortality associated with ileostomy was 7.6% and in colostomy was 8.3% respectively which was comparable to Ahmad Z et al who reported mortality rate of 9%.<sup>[4]</sup> In another study a mortality rate of 18% was reported by Joseph C et al.<sup>[14]</sup>

In emergency situations, following precautions can avoid complications. Stoma site should be marked before taking incision. Ileostomy should be avoided near a bony prominence, waist line, skin folds, scars and umbilicus, because all these interfere with appliance application and might subject the patient to complications. It is important to create a smooth pouting surface to allow proper appliance care when enterostomal therapist is not available.

The pitfalls of the stoma surgery were that most of the patients were worried regarding frequent bag change and local skin problems due to financial constraints and lack of proper stoma care backup. Painful oozy skin with ulceration hinder ostomy bag application and poses problems in handling ostomy effluent.

In elective setting end colostomy was the common stoma, here the stoma site was previously marked by enterostomal therapist in our study, it was observed that end colostomy was associated with nil complications; similar results were observed in a study by M. Caricato et al.<sup>[15]</sup> According a study by Bass EM et al.<sup>[16]</sup> Preoperative evaluation by an enterostomal therapist, marking of the skin site, and providing patient education reduce adverse outcomes. Another study by Duchesne JC et al, showed decrease in stomal complications when enterostomal therapist were involved in stoma care.<sup>[13]</sup> All elective procedures that may result in stoma formation should, therefore, be assessed and marked preoperatively. Patients, likewise, should be informed and taught to care for their forthcoming stomas preoperatively and postoperatively

**CONCLUSION:** Right loop ileostomy (38%) commonly performed stoma in our study, followed by left end colostomy (24%). 60% of stoma were created in Emergency and remaining 40% in elective setting. Colorectal carcinoma was the most common indication for ostomy followed by typhoid, tuberculosis, gangrenous bowel, traumatic perforation etc. Most complication rate was seen in cases of typhoid perforations 25%, abdominal tuberculosis (20%). Complications were more in ileostomies than colostomies none of the complications were serious or life threatening. In emergency situations stoma site should be marked before taking incision. Ileostomy should be avoided near a bony prominence, waist line, skin folds, scars and umbilicus and it should be smooth pouting to prevent complications

Table 1

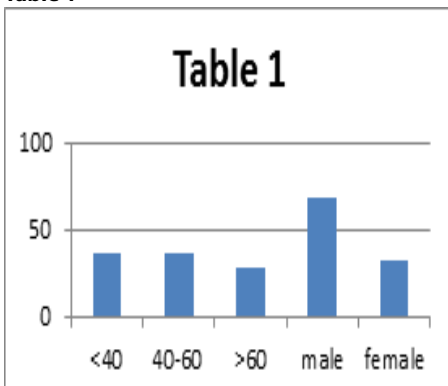


Table 2

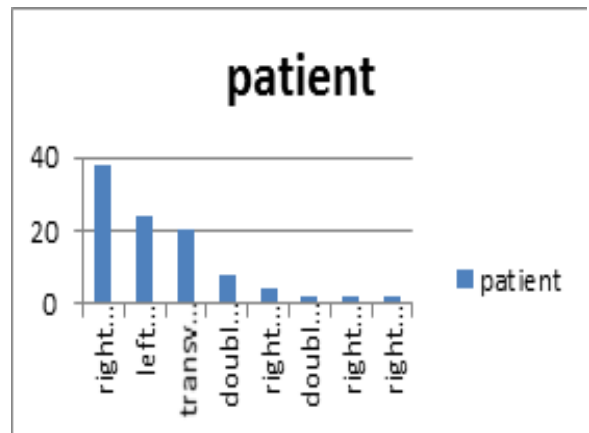


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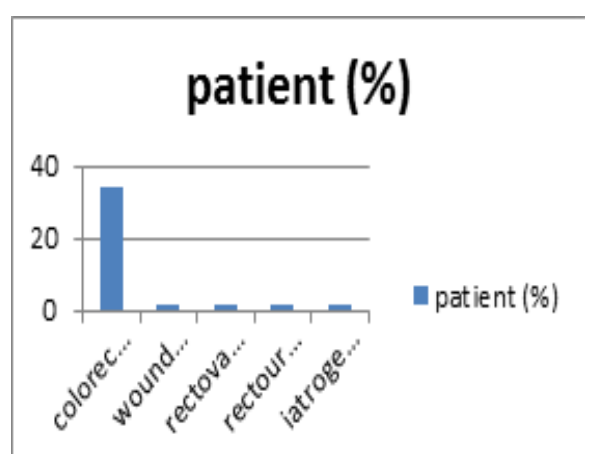


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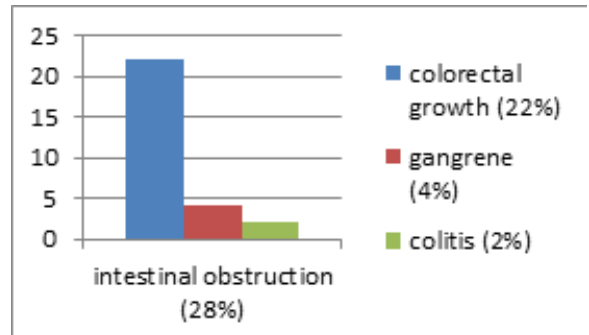
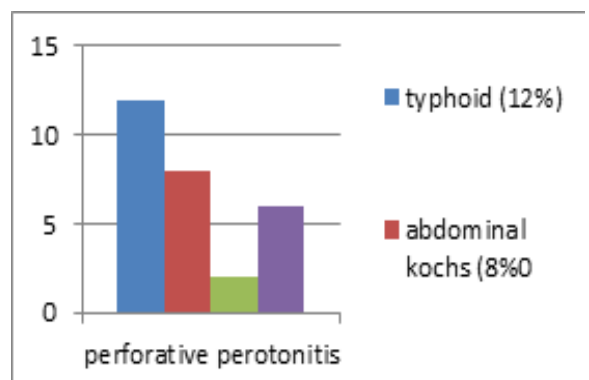
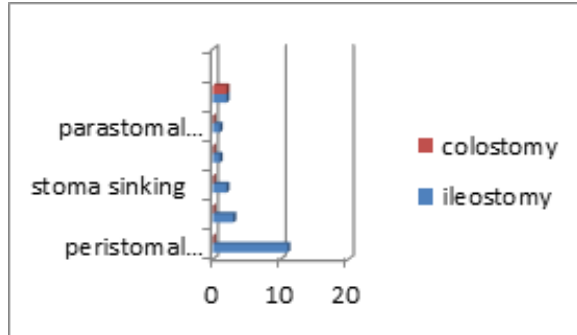


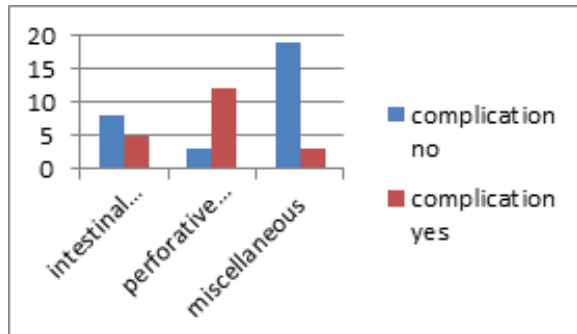
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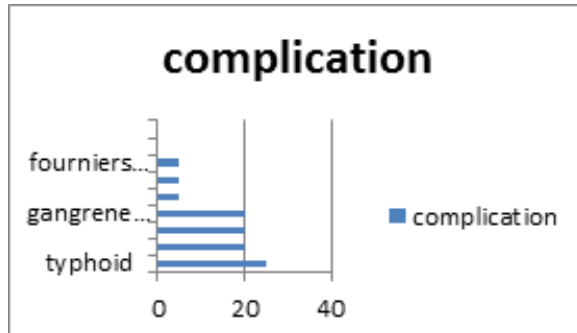
**Table 6**



**Table 7**



**Table 8**



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