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ORIGINAL RESEARCH

Clinical study of intestinal stomas among the patients attending a tertiary care Hospital, Andhra Pradesh, South India

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ABSTRACT

Introduction: Intestinal stoma is an opening for fecal diversion. The aim of this research is to determine various indications, problems, and care strategies for intestinal stomas.**Methodology:** Hospital based prospective observational study. Carried out in the department of General Surgery, GGH, Vijayawada, during the period June 2022 to June 2024.A total of 50 patients were considered for this study based on the inclusion and exclusion criteria. Before conducting this study the institutional ethics clearance and the patient consent was taken.**Results:** The groups with the highest number of patients were 26-35 and 46-55 (n = 12). It demonstrates a highly significant correlation ($p < 0.01$) between the patient's age and the stoma's construction. The majority of patients in this age range-26 to 55-probably have loop ileostomies. Loop ileostomy accounted for 30% of ileostomy cases, with end ileostomy accounting for 10% of cases. The next most frequently created stoma was colostomy (9%). The most frequent type of colostomy was loop transverse colostomy (3%), which was followed by loop sigmoid colostomy (3%).42 patients out of a 50 experienced issues. Skin excoriations (24.2%) were the mostfrequent consequence seen during stoma creation, followed by laparotomy wound infection (4.1%).**Conclusion:** Stoma creation is more common among adults and older adults, and it is typically performed as an emergency rather than an elective treatment. Usually carried out for individuals with trauma or cancer as a diversion from blockage or perforation. That is associated with a significant risk of peristomal complications. The recovery was more effective with appropriate preoperative planning and stoma care.

Key words: Intestinal stoma, colostomy, ileostomy

INTRODUCTION

An intestinal stoma is an opening of the intestinal tract onto the abdominal wall, constructed surgically or appearing inadvertently. To divert the feces from distal obstruction or protect distal anastomosis [1]. Stomas are characterized as temporary or permanent stomas depending on the necessity [2].The formation of a stoma results in numerous difficulties [3]. The majority of stoma issues are mild and may be handled with good care; however, significant complications necessitate surgical intervention, which results in substantial morbidity and mortality [4].Stomas are classified based on the gastrointestinal segment where they are located. For examples gastrostomy in the stomach, jejunostomy in the jejunum, ileostomy in the ileum, caecostomy in the caecum, and colostomy in the colon.

Indications for ileostomy include intestinal obstruction caused by benign or malignant disease, perforation with peritonitis, ulcerative colitis or Crohn's disease, and mesenteric ischemia [5]. Colonic growth, colorectal cancer, peritonitis caused by perforation, anorectal abnormalities, and a high anal fistula are all indications for a colostomy. Unlike primary resection anastomosis, the formation of a stoma is influenced by a number of variables. These include contamination, co-morbidity of the patient, blood loss, peritonitis, and further complications related to intestinal injuries.

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Various kinds of difficulties can be attributed to multiple factors [6]. These include the patient's presentation, the time of the operation, preoperative education, the stoma's position [7], ileostomy vs. colostomy [8], co-morbidity [9], and the patient's quality of life [10, 11, 12].

COMPLICATIONS ARISING FROM ILEOSTOMY AND COLOSTOMY

Retraction, prolapse, Para ileostomy hernia, stromal haemorrhage, ileostomy orifice stenosis, and skin response surrounding the stoma, excoriation, erosion, sloughing, distal end gangrene, fluid and electrolyte imbalance (ileostomy flux), and ileostomy diarrhoea [13].

Pericolostomy abscess, colostomy diarrhoea, prolapse, retraction, paracolostomy hernia, haemorrhage, and stenosis of the colostomy orifice.

The aim of this research is to determine various indications, problems, and care strategies for intestinal stomas.

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

METHODOLOGY

Hospital based prospective observational study. Carried out in the department of General Surgery, GGH, Vijayawada, during the period June 2022 to June 2024.A total of 50 patients were considered for this study based on the inclusion and exclusion criteria. Before conducting this study the institutional ethics clearance and the patient consent was taken.

INCLUSION CRITERIA

1. All patients male and female from 18 years to 70 years undergoing stoma construction.
2. All elective and emergency cases undergoing intestinal stoma construction.

EXCLUSION CRITERIA

1. Patients undergoing urinary stoma construction.
2. Patients undergoing stoma construction as an indication for gynecological disorders.
3. Psychological and biochemical abnormalities were excluded from the study.

Follow up of the patients will be done at 4 wks,8 wks,12 wks,18wks,24 wks, either by phone or by interview. Statistical Analysis: Descriptive analysis has been carried out in the study using SPSS 22.0 version. Significance was analyzed by using Chi-square test.

RESULTS

50 patients who underwent stomas between June 2022 to June 2024 at GGH, Vijayawada were included in this observational study. The patients were admitted to the upgraded departments of general surgery, surgical gastroenterology, and paediatric surgery. Every case had an accurate preoperative evaluation, and all preoperative results, recommendations for stoma construction, postoperative problems and various stoma-related issues were properly documented in accordance with protocol. Our study comprised 50 patients who underwent surgery for various reasons, including stoma construction. The groups with the highest number of patients were in 26-35 and 46-55 group (n = 12). Our study comprised 50 individuals who underwent surgery for various reasons, including stoma creation. There were 19 female patients and 31 male participants in this study.

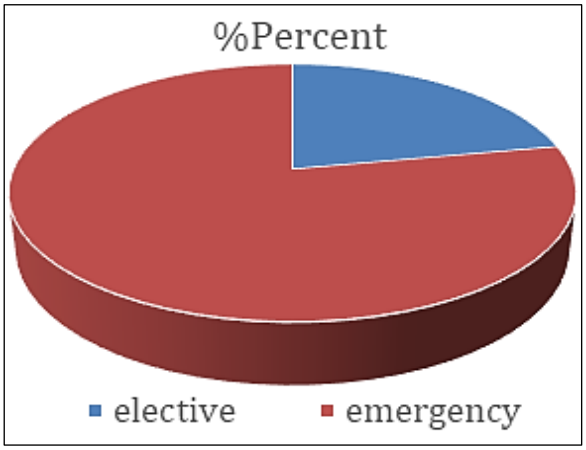

Figure 1: Mode of surgery among the study participants

Out of 50 patients 39 patients underwent stoma construction as an emergency procedure and 11 patients underwent stoma construction as an elective procedure.

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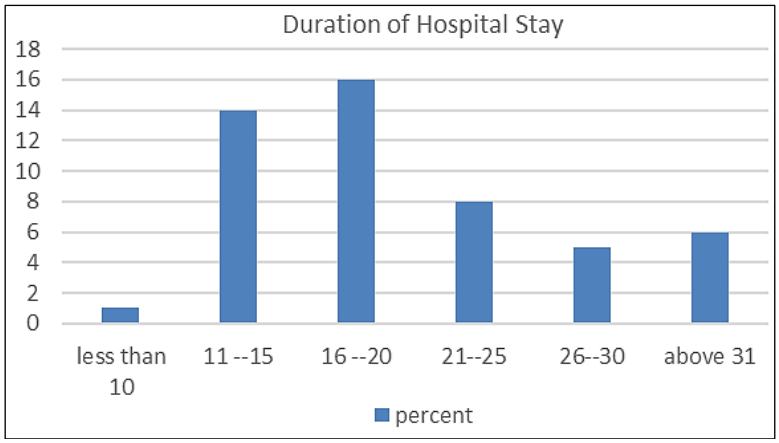

Figure 2: Showing duration of hospital stay among the study participants

Duration of hospital stay were analysed for 50 patients, were most of the patients stayed in hospital approximately 16-20 days (32%)

Table 1: Primary complaints among the study participants

Primary Complaint	Frequency	Percent
Abdominal distension	7	14.0
Abdominal pain	16	32.0
Altered bowel habits	6	12.0
Bleeding PR	6	12.0
Constipation	5	10.0
Faecal discharge	2	4.0
Fever	1	2.0
Prolapse of bowel	7	14.0
Total	50	100.0

Out of 50 patients, primary complaints were analyzed. Most of the patients presented with complaints of abdominal pain both in emergency setting as well as elective setting (32%).

For 50 patients durations of complaints range from less than 5 days to more than 30 days. But most of the patients presented with complaints durations less than 5 days (38%).

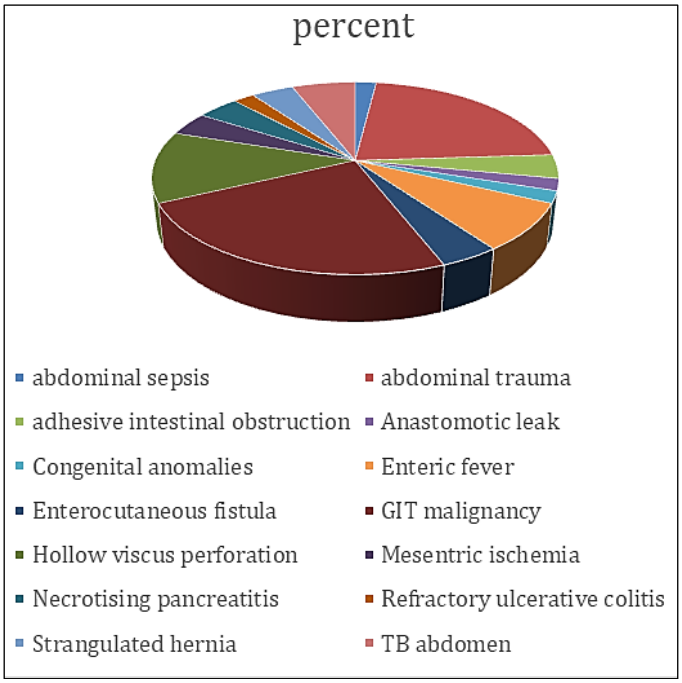

Figure 3: Primary indication of intestinal stoma among the study participants

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Out of 50 patients undergoing stoma construction, the most common indications for stoma construction was gastrointestinal malignancy (24%) followed by abdominal trauma (22%).

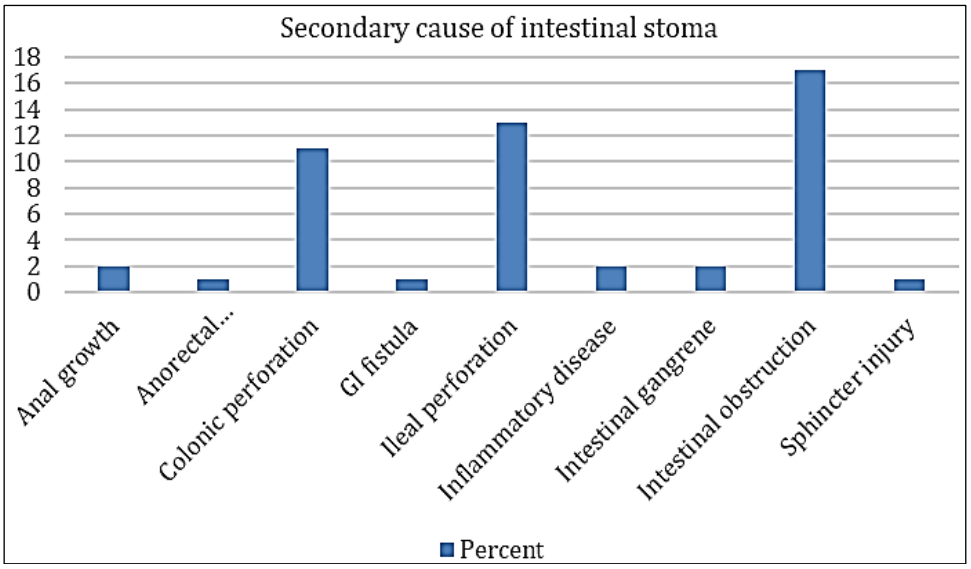

Figure 4: Showing secondary causes of intestinal stoma among the study participants

Out of 50 patients underwent stoma construction the most common secondary indications for which stoma construction was intestinal obstruction (34%) followedby ileal perforation either infective or traumatic (26%).

Table 2: Mode of surgery versus stoma

Mode of Surgery	Caecostomy	End Ileostomy with Mucous Fistula	End Sigmoid Colostomy	End Transverse Colostomy	Loop Ileostomy	Loop Sigmoid Colostomy	Loop Transverse Colostomy
Elective	0	6	3	1	8	3	0
Emergency	1	14	2	0	52	4	6
Total	1	20	5	1	60	7	6
		Value		DF		Asymp. Sig. (2-sides)	
Pearson chi- square		15.325*		6		.018	
Likelihood ratio		14.945		6		.021	
N of valid cases		50					

The association between stomas and the surgical technique was examined. It demonstrates that the mode of surgery and stoma creation have a highly significant relationship ($p < 0.01$). The majority of patients have stomas as emergency procedures rather than elective ones. The majority of the emergency procedure involved end ileostomy and loop ileostomy. Loop ileostomy was the most common stoma in elective procedures, followed by end ileostomy.

Table 3: Showing type of stoma and complications

	Caecostomy	End Ileostomy with Mucous Fistula	End Sigmoid Colostomy	End Transverse Colostomy	Loop Ileostomy	Loop Sigmoid Colostomy	Loop Transverse Colostomy	Total
Burst Abdomen	0 0	0 0	2 0	1 0	5 1	7 0	3 0	18 1
Enterocutanous Fistula	0	0	1	0	1	0	0	2
Gangrene of Distal End	0	0	0	0	1	0	0	1
Intestinal Obstructon	0	2	1	0	1	0	2	6
Laprotomy Wound Infection	1	0	0	0	6	0	0	7
Mucosal Prolapse	0	1	0	0	3	0	0	4
Parastromal Abscess	0	0	0	0	1	0	0	1
Parastromal Hernia	0	1	0	0	1	0	0	2
Skin Excoriation	0	11	1	0	31	0	0	43
Stromal Bleeding	0	1	0	0	0	0	0	1
Stromal Diarrhea	0	0	0	0	0	0	1	1

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Stromal Necrosis	0	1	0	00	1	0	0	2
Stromal Prolapse	0	0	0	0	2	0	0	2
Stromal Retraction	0	2	0	0	5	0	0	7
Stromal Stenosis	0	1	0	0	1	0	0	2
Total	1	20	5	1	60	7	6	100

	Value	DF	Asymp. Sig. (2-sides)
Pearson chi- square	116.876*	90	.030
Likelihood ratio	90.228	90	.473
N of valid cases	50		

*.109 cells (97.3%) have expected count less than 5. The minimum expected count is .01.

All 50 patients were examined for their link to the stoma and issues associated with stoma construction. It demonstrates a significant relationship (p<0.05) between the indication for a stoma and issues brought on by stoma creation. Skin excoriation was the most frequent complication and it is more serious in loop ileostomy patients.

DISCUSSION

Stoma development has long been seen as a crucial step in saving lives. The indication for the creation of a stoma has changed over time. In the past, intestinal blockage and combat injuries were the most frequent reasons for stoma creation. These days, the indications range from cancerous diseases such as colorectal and colon cancers. The morbidity and mortality rates linked with stomas were elevated due to their consequences. Instead of stoma development, primary anastomosis is the way of the present. However, in circumstances when surgery is not possible, stomas can still be useful in preventing anastomosis leaks and diverting excrement. In this investigation, the total number of patients was 50. This study was carried out at Government General Hospital; Vijayawada June 2022 to June 2024.We conducted this investigation for the following reasons.

1. To research the numerous intestinal stoma types and their applications.
2. To list the several issues that arises with the implantation of intestinal stomas.
3. To evaluate the best approaches for minimizing and managing these problems. We made the following remarks in light of this study.

In this study, 50 individuals with various stoma constructions and indications for surgery were included. The groups with the highest number of patients were 26-35 and 46-55 (n = 12).Every one of the 50 patients was examined in regard to their age and stoma. It demonstrates a highly significant correlation (p<0.01) between the patient's age and the stoma's construction. The majority of patients in this age range-26 to 55-probably have loop ileostomies. Less than a year olds most likely have a loop colostomy. Individuals older than 55 years old are probably end ileostomy patients with mucous fistulas.

In this study, 19% of the patients were female, and 31% of the patients were male. This suggests that compared to the female population, male patients had more stomas constructed. The association between each patient's stoma and sex was examined for all 50 individuals. It demonstrates that the patient's sex and the stoma's structure have less of an association (p >0.05).

Comparatively, 11 patients underwent stoma construction as an elective treatment, compared to 39 patients out of 50 recipients. Stomas were created in both elective and emergency circumstances. However, it was primarily done as a last resort. The association between each of the 100 patients' stomas and the surgical technique was examined. It demonstrates that the mode of surgery and stoma creation have a highly significant relationship (p<0.01). The majority of patients have stomas as emergency procedures rather than elective ones. The majority of the emergency procedure involved end ileostomy and loop ileostomy. The most common stoma in elective procedures was a loop ileostomy, followed by an end ileostomy.

The duration of hospital stay was examined for 50 patients, with the majority of patients staying in the hospital for 16-20 days (16%). Prolonged hospital stays and related morbidity and consequences result from stoma formation, which also indirectly raises costs. Primary complaints from 50 patients were examined. Abdominal discomfort was the most common complaint among patients (16%), both in emergency and elective settings. Less than five days to more than thirty days are the range of complaint durations for 50 patients. However, the majority of patients (19%), had problems that had been ongoing for fewer than five days.

Among the 50 patients who had their stomas constructed, the most frequent reasons for the procedure were gastrointestinal cancer (12%) and abdominal trauma (11%).Colorectal and colonic cancers were the most common indications for which a stoma was created. The association between each of the 50 patients' stomas and the secondary reason for their formation was examined. It demonstrates that the association between stoma architecture and indication for stoma is highly significant (p<0.01).

A clinical study of intestinal stomas: its indications and complications	*Ahmad Z et al.*	Tuberculosis-18% Enteric fever-38%
Complications of colostomies	Porter JA*et al.*	Malignant-66%

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		Benign-34%
Bowel stomas in najaf, indications and complications.	Akeel M.A. AL-Faham *et al.*	malignancy-64% cong megacolon-15%
A prospective audit of postoperative complications of construction of loop ileostomy.	Syed Asad Ali *et al.*	Tuberculosis-9.43% Enteric fever-81.13%
Temporary Loop Ileostomy: Prospective Study of Indications and Complications.	Akram Rajput *et al.*	Enteric fever-66% Iatrogenic-10.7%

Out of 50 patients 42 patients developed complications. The most common complication observed in stoma construction was skin excoriations (24.2%), followed by laparotomy wound infection (4.1%).

The association between the 50 patients' stomas and any issues resulting from their construction was examined. It demonstrates a substantial correlation ($p < 0.05$) between the indication for a stoma and issues brought on by stoma creation. Skin excoriation was the most frequent complication, and it is more serious in loop ileostomy patients.

Both ileostomy and colostomy might have complications. When compared to peristomal skin-related issues, colostomy is linked to a higher risk of parastomal hernia and other stomal complications.

The most frequent early consequence related to ileostomy was skin excoriation. Complications from peristomal skin are less common in colostomies. The most frequent was stomal prolapse, followed by skin excoriation. When compared to ileostomy, parastomal and peristomal hernias are more prevalent in colostomies. Conservative measures, including as skin care and endostomal therapy, are used to control the majority of the problems. However, a few issues, such as intestinal blockage and stomal retraction, require surgery.

A clinical study of intestinal stomas: its indications and complications	Ahmad Z *et al.*	Skin excoriations-36% Wound infections-13 %
Complications of colostomies.	Porter JA *et al.*	Strictures-16% Wound infections-13 %
Bowel stomas in najaf, indications and complications	Akeel M.A. Al-Faham *et al.*	Wound infections-32% Prolapsed- 30%
Various Complications in Ileostomy Construction	Ambreen Muneer *et al.*	Skin excoriations-17.64% Wound infections-5.80%
Temporary Loop Ileostomy: Prospective Study of Indications and Complications	Akram Rajput *et al.*	Skin excoriations-21.4% Poor sitting of stoma-7.1%

Out of 50 patients, two patients developed faced death due to stoma related complications. So the mortality rate was 2%.

CONCLUSION

The study's findings confirm that those who are between the ages of 26 and 55 are more likely to have stomas constructed, and they also probably have loop ileostomies. Less than a year olds most likely to have a loop colostomy. The majority of patients have stomas as emergency procedures rather than elective ones. A 16-20 day hospital stay is typical; however it may be longer if problems arise. Abdominal trauma and gastrointestinal cancer were the two most frequent reasons for stoma formation. Ileostomy stomas were the most often created types of stomas. Colostomy was the second most often created stoma. Skin excoriations were the most frequent consequence seen during stoma formation, followed by laparotomy site infection.

Based on the study's findings, stoma creation is more common among adults and older adults, and it is typically performed as an emergency rather than an elective treatment. Usually carried out for individuals with trauma or cancer as a diversion from blockage or perforation. The most often created stoma was an end ileostomy with a mucus fistula, then a loop ileostomy. That is associated with a significant risk of peristomal complications. The problem was more successfully handled with appropriate preoperative planning and efficient stoma care during the recovery phase.

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