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A study on incidence, indications, complications of intestinal stoma surgeries

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Abstract

Introduction: Stoma is a surgically created opening in the anterior abdominal wall. The basic types of stomas derive their name from the gastrointestinal segment in which they are sited. For example, gastrostomy in stomach, jejunostomy in jejunum, ileostomy in ileum, caecostomy in caecum and colostomy in colon.

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

Methods: Descriptive analysis has been carried out in the study. Significance was analyzed by using Chi-square test. The statistical software used was SPSS 22.0 version and Microsoft and excel used for generate table and graph.

Results: Most of the emergency procedure was loop ileostomy followed by end ileostomy. In elective procedure, the most common stoma was loop ileostomy followed by end ileostomy. Most common complaints of abdominal pain both in emergency setting as well as elective setting (33%). the most common complication was skin excoriation, which is more significant in loop ileostomy.

Conclusion: In conclusion the study showed stoma construction high in adult and old age group, mostly done as an emergency procedure compared to elective procedure. Mostly done for diversion for obstruction or perforation in malignancy and perforation in trauma patients. Most common stoma constructed was loop ileostomy followed by end ileostomy with mucus fistula. There is high incidence of peristomal complication related to that. The complication better managed with proper preoperative planning with effective stoma care in post-operative period.

Keywords: Stoma, ileostomy, colostomy, stoma surgeries, peristomal complication

Introduction

Stoma is a surgically created opening in the anterior abdominal wall. The purpose of stomas are divert the faeces away from the bowel loops in order to relieve obstruction or product anastomosis. The basic types of stomas derive their name from the gastrointestinal segment in which they are sited. For example, gastrostomy in stomach, jejunostomy in jejunum, ileostomy in ileum, caecostomy in caecum and colostomy in colon ^[1]. Indications for ileostomy are intestinal obstruction due to benign or malignant disease, perforation with peritonitis, ulcerative colitis or Crohn's disease and mesenteric ischemia. Indications for colostomy are colonic growth, colorectal malignancies, and peritonitis due to perforation, anorectal malformations, and high anal fistula. Multiple Factors are responsible for different type of complications ^[2-4]. They are patient's presentation, timing of surgery, preoperative education, location of stoma, ileostomy Vs colostomy, co morbidity, and quality of life. Multiple factors play a role in construction of stoma rather than primary resection anastomosis. They are blood loss, peritonitis, co morbidity of the patient, contamination, and with bowel injuries ^[5, 6]. Our purpose in this study is to identify varies indications, complications and management of intestinal stoma.

Material and Methods

The main aim is to study the various types of intestinal stomas and their indications. To identify the various complications encountered that occur after the construction of intestinal stomas. To assess the ways in which these complications can be minimized and managed in a better way. Statistical method: Descriptive analysis has been carried out in the study.

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Significance was analyzed by using Chi-square test. The statistical software used was SPSS 22.0 version and Microsoft and excel used for generate table and graph. This is observational study consisted of 100 patients who were admitted to Department of general surgery, Department of surgical gastroenterology and Department of paediatric surgery. All cases underwent detailed preoperative assessment, their preoperative findings, indications for stoma construction and post-operative complication and varies complications related to stoma formation were recorded meticulously as per protocol. The findings analyzed and tabulated.

Results

Our study included 100 patients who underwent surgery for varies indication and stoma construction. The maximum number of patients were in the group of 26-35year and 46-55year. Out of 100 patients 79 patients underwent stoma construction as an elective procedure compared 21 patients underwent stoma construction as an elective procedure. Out of 100 patients, primary complaints were analyzed. Most of the patients presented with complaints of abdominal pain both in emergency setting as well as elective setting (33%). Out of 100 patients undergoing stoma construction, the most common indications for stoma construction was gastrointestinal malignancy (25%) followed by abdominal trauma (22%).

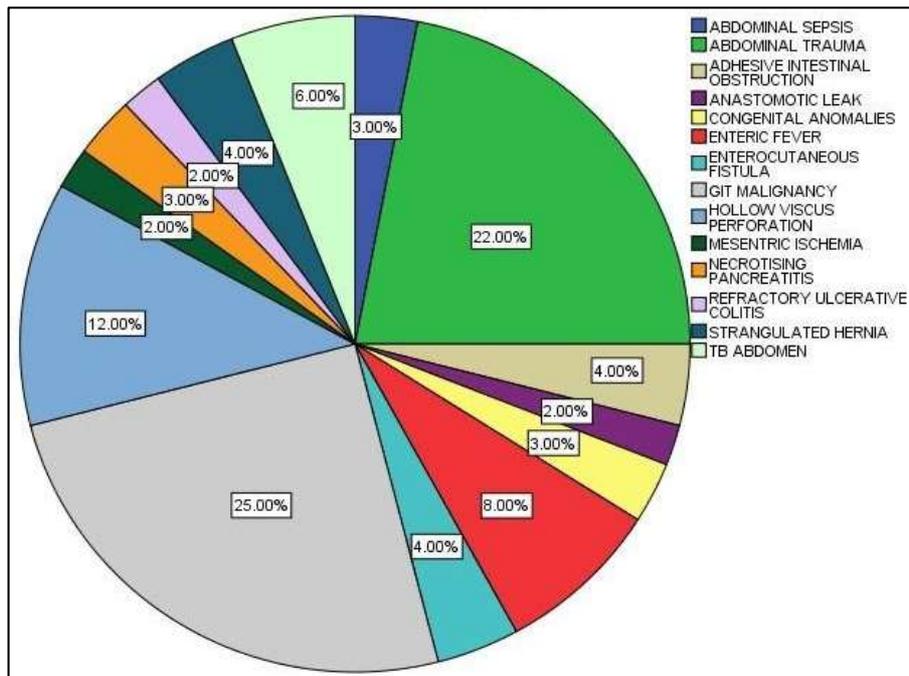


Fig 1: Primary cause

Out of 100 patients the most common type of stoma constructed was ileostomy (80%). In ileostomy loop ileostomy was most common (60%), followed by end ileostomy (20%). The next most common stoma constructed was colostomy (19%). In colostomy most common was loop sigmoid colostomy (7%), followed by loop transverse

colostomy (6%). Out of 100 patients 82 patients developed complications. The most common complication observed in stoma construction was skin excoriations (52.4%), followed by laparotomy wound infection (8.5%).

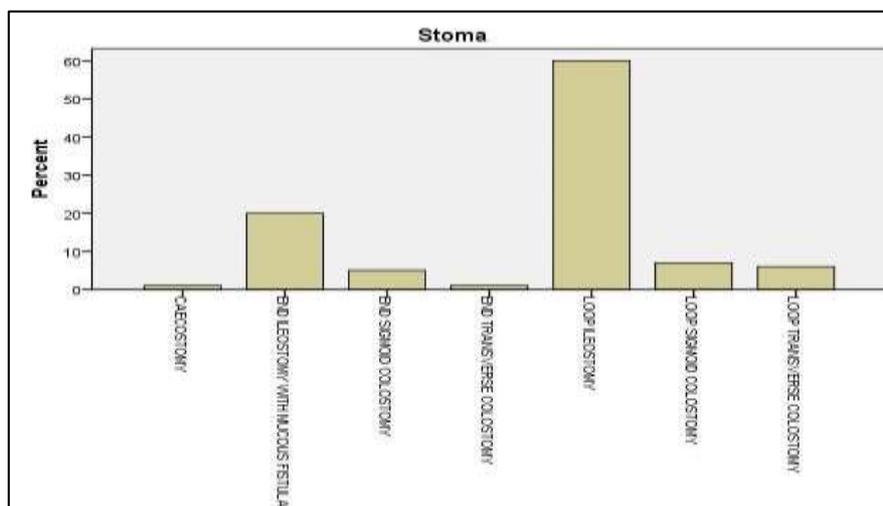


Fig 2: Stoma

Out of 100 patients 82 patients developed complications. The most common complication observed in stoma

construction was skin excoriations (52.4%), followed by laparotomy wound infection (8.5%).

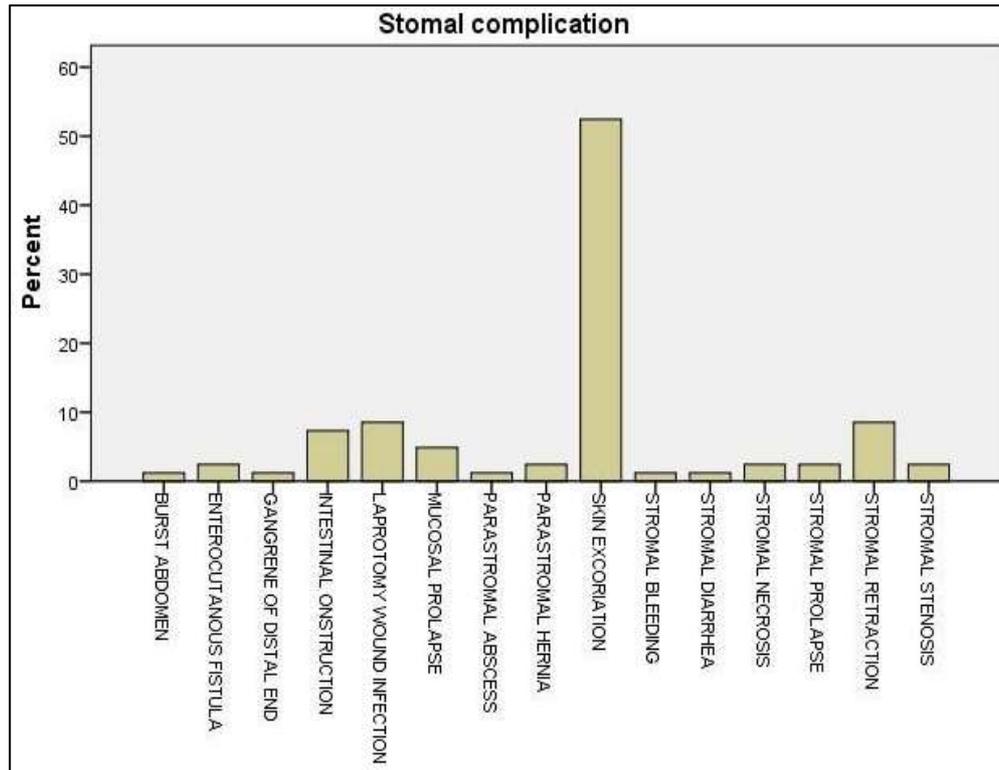


Fig 3: Stomal complication

Out of 100 patients 82 patients developed complications. Most of the complications occur within the week, mostly on 4-7 days (68.3%). Out of 100 patients, two patients developed mortality due to stoma related complications. So the mortality rate was 2%.

Discussion

From ancient time stoma formation was an important life saving procedure. Indication for stoma formation varies from olden days to current. Our study was conducted on 100 patients.

Our study included 100 patients who underwent surgery for varies indication and stoma construction. The maximum number of patients were in the group of 26-35 and 46-55 (n=25). All 100 patients were analyzed with relationship with stoma and age of patients. It show there is strong significant relationship between age of the patient and stoma construction ($p < 0.01$). Most of the patient's age group between 26-55 years there are likely undergoes loop ileostomy⁶⁻⁸. Less than 1 year of age there are likely undergoes loop colostomy. More than 55 years of age there are likely undergoes end ileostomy with mucous fistula.

Timing of surgery (elective/emergency) Out of 100 patients 79 patients underwent stoma construction as an elective procedure compared 21 patients underwent stoma construction as an emergency procedure. Stoma was constructed both in elective and emergency setting. But mostly it was undertaken as a emergency procedure.

All 100 patients were analyzed with relationship with stoma and mode of surgery. It show there is strong significant relationship between mode of surgery and stoma construction ($p < 0.01$). Most of the patient undergoes stoma as an emergency procedure rather than elective procedure. Most of the emergency procedure was loop ileostomy

followed by end ileostomy⁹. In elective procedure, the most common stoma was loop ileostomy followed by end ileostomy.

Primary complaint and duration of complain

Out of 100 patients, primary complaints were analyzed. Most of the patients presented with complaints of abdominal pain both in emergency setting as well as elective setting (33%). For 100 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 (39%).

Indication for stoma construction

Out of 100 patients undergoing stoma construction, the most common indications for stoma construction was gastrointestinal malignancy (25%) followed by abdominal trauma (22%). The most common indication for which stoma was constructed was malignancies like colorectal and colonic malignancies. All 100 patients were analyzed with relationship with stoma and the secondary cause for stoma construction. It show there is very strong significant relationship between indication for stoma and stoma construction ($p < 0.01$).

Type of stoma

Out of 100 patients the most common type of stoma constructed was ileostomy (80%). In ileostomy loop ileostomy was most common (60%), followed by end ileostomy (20%). The next most common stoma constructed was colostomy (19%). In colostomy most common was loop sigmoid colostomy (7%), followed by loop transverse colostomy (6%)^[10,11].

Complications of stoma

Out of 100 patient's 82 patients developed complications. The most common complication observed in stoma construction was skin excoriations (52.4%), followed by laparotomy wound infection (8.5%). All 100 patients were analyzed with relationship with stoma and complications due to stoma construction. It shows there is significant relationship between indication for stoma and complications due to stoma construction ($p < 0.05$). The most common complication was skin excoriation, which is more significant in loop ileostomy. Complication occurs in both ileostomy and colostomy. Colostomy associated with high parastomal hernia and other stomal complication, compared to peristomal skin related complications are high in ileostomy. Most common early complication was skin excoriation associated with ileostomy. Peristomal skin related complications less in colostomy. Next to skin excoriation stomal prolapse were most common. Parastomal hernia and peristomal hernia most common in colostomy compared to ileostomy. Most of the complications are managed by conservative treatment like skin care and endostomal therapist. But few complications need surgical intervention like stomal retraction and intestinal obstruction.

Duration of stoma

Duration of stoma was analyzed for 100 patients. Out of 100 patients, most of the patients retained stoma for 1-2 months duration (57%). Out of 100 patient's 82 patients developed complications. Most of the complications occur within the week, mostly on 4-7 days (68.3%).

It shows there is very strong significant relationship between indication for stoma and duration of stoma ($p < 0.01$). The most commonly the stoma was retained for 1-2 month duration, which is very high in loop ileostomy. Complications occur in early stage and late stage of stomal maturation. As the day progresses and stomal maturation occurs few complications decrease but the complication even occurs at later stage.

Mortality

Out of 100 patients, two patients developed mortality due to stoma related complications. So the mortality rate was 2%.

Conclusion

The results of the study support stoma construction most common in the age group between 26-55 years there are likely undergoes loop ileostomy. Less than 1 year of age there are likely undergoes loop colostomy. Most of the patient undergoes stoma as an emergency procedure rather than elective procedure. Duration of hospital stay approximately 16-20 days, even prolonged when complications occur. The most common indications for stoma construction were gastrointestinal malignancy followed by abdominal trauma. The most common type of stoma constructed was ileostomy. The next most common stoma constructed was colostomy. The most common complication observed in stoma construction was skin excoriations, followed by laparotomy wound infection. In conclusion the study showed stoma construction high in adult and old age group, mostly done as an emergency procedure compared to elective procedure. Mostly done for diversion for obstruction or perforation in malignancy and perforation in trauma patients. Most common stoma constructed was loop ileostomy followed by end ileostomy

with mucus fistula. There is high incidence of peristomal complication related to that. The complication better managed with proper preoperative planning with effective stoma care in post operative period.

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