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Original Research Article

Analysis of complications and management of abdominal stoma

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ABSTRACT

Background: Abdominal stoma is an opening of the intestine whether temporary or permanent on anterior abdominal surgically. These are used to divert the faecal contents for safe distal anastomosis and to relieve obstruction in emergency surgeries or even in elective surgeries also. Though it is a lifesaving procedure and may be temporary or permanent. Sometimes it may result in number of significant complications which may be starting from early postoperative periods to late compilations.
Methods: This is a prospective observational study, which was carried on 85 patients of abdominal stomas in the department of general surgery, Pt. B D Sharma PGIMS Rohtak.
Results: In the present study there were (71) males and (14) females in the ratio of nearly 5:1. The males are 83.52% as compared females 16.47%.The commonest age group for stoma formation was in 21–30 years in either sex which is 23.52%. Numbers of males are higher in the age group of 51-60 years. The end ileostomy was made in 46 patients and loop ileostomy was in 27 patients. Oedema was seen maximally 19 patients of loop ileostomy. The other complications which are less common are retraction and ischemia of stomas. Four patients were died during treatment in this period in the present study.
Conclusions: Intestinal stomas are commonly performed surgical procedure for intestinal diseases, to minimise or decrease the potential complications due to intestinal stoma meticulous attention and extreme care should be employed in preoperative and postoperative periods. Here we have provided an overview of the complications seen in formation of intestinal stomas, keeping these probable complications in mind, decision making and surgical technique continue to be remain the keys to successful stoma formation.

Keywords: Abdominal stoma, Ileostomy, Colostomy, Complications, Excoriations

INTRODUCTION

Intestinal stomas is very important component of the surgical diseases management related to gastrointestinal tract. Complications of intestinal stomas are occurring with relative frequency despite of advances in medical sciences. These complications of intestinal stomas were resulting in very high financial loss along with general morbidity and physiological and psychological disturbances. Complications of intestinal stomas can occur any time after its formation may be early those occurring within one month postoperatively or late, those occurring after one month.[1] The important factor which favour abdominal stoma are blood loss, shock, faecal contamination of cavity multiple perforations in comparison to primary closure.[2] The abdominal stomas can be formed for various indications like,, bowel obstruction, cancer of colon & rectum, ulcerative colitis, Crohn's disease, congenital defects, ischemic bowel disease injury to intestinal tract, inflammatory bowel diseases, carcinoma urinary bladder and spinal cord injury.[3] In the present study, it has been tried to identify the complications associated with abdominal especially those occurring in early postoperative periods, in our institute.

METHODS

This is a prospective observational study which was conducted on patients of abdominal stoma in the department of general surgery, Pt. B D Sharma PGIMS Rohtak from December 2016 to May 2017. We have studied 85 patients who were admitted through accident and emergency department needing intestinal stomas whether ileostomy or colostomy. Patients under 17 years and urinary conduits were excluded from the present study. All the studied patients were resuscitated in accident and emergency department in form of intravenous fluid, antibiotics, oxygen inhalation. They were investigated for in all form for preanesthetic check-up. All possible attempts were to make patients fit for emergency surgery. All the studied patients operated whatever may be their indications for emergency surgery. They were observed and their operative findings, procedure done, complications after surgery related to abdominal stoma were recorded up to their discharge from hospital. Good stoma care bag for abdominal stoma along with adhesive paste was also used for application of bag. During the stay in ward, patient and their attendants were also briefed about management the stoma care and its related complications. We have studied their age group with male to female distribution of patient, type of complications related to abdominal stomas and their management.

RESULTS

In the present study there were (71) males and (14) females in the ratio of nearly 5:1. The males are 83.52% as compared females 16.47%.

Table 1: Sex wise distribution.

Male	%	Female	%	Total	%
71	83.52	14	16.47	85	100

Table 2: Age wise distribution.

Age group (in years)	Male (n=71)	Female (n=14)	Total	%
<20	5	2	7	8.23
21-30	14	6	20	23.52
31-40	10	1	11	12.94
41-50	12	2	14	16.47
51-60	16	1	17	20.00
>60	14	2	16	18.82
Total	71	14	85	100

The commonest age group for stoma formation was in 21 –30 years in either sex which is 23.52% as shown in Table 2. Numbers of males are higher in the age group of 51-60 years.

The end ileostomy was made in 46 patients and loop ileostomy was in 27 patients. oedema was seen maximally 19 patients of loop ileostomy as per Table 3. According to this table, other complications of which are less common is retraction and ischemia's four patients were died during treatment despite our best efforts in this period.

Table 3: Complications in relation to stoma ileostomy.

Name of complication	End ileostomy n=46	%	Loop ileostomy n=27	%
Oedema	21	45.65	19	41.30
retraction	3	6.52	1	2.17
ischemia	2	4.34	1	2.17
ileus	22	47.82	18	39.13
excoriations	27	58.69	16	34.78
Wound infection	24	52.17	19	41.30
Burst abdomen	5	10.86	3	6.52
mortality	3	6.62	1	2.17

Table 4: Complications in relation to colostomy.

Name of complication	End colostomy n=9	%	Loop colostomy n=3	%
Oedema	0	00.00	1	33.34
retraction	1	11.11	0	00.00
ischemia	2	22.22	0	00.00
ileus	4	44.44	1	33.33
excoriations	2	22.22	0	00.00
Wound infection	3	33.33	1	33.34
Burst abdomen	1	11.11	0	00.00
mortality	0	00.00	0	00.00

Colostomies have very less complications as compared to ileostomies as shown in Table 4. Ileus was the most common complication seen in end colostomy and very less complication were seen in loop colostomy.

DISCUSSION

Complicated stoma produces many upsets in life like, social, psychological and domestic. These complications can be skin irritation, ischemia and stoma retraction.[4] In the present study, an attempt was made to identify common complications associated with intestinal stoma and their management in our set-up. We have tried our best to identify different types of complications of stoma formation. The rates of abdominal stomas complications vary in the literature to literature. Some reports shows that either ileostomies or colostomies solely responsible, that make more difficult to make definitive conclusions about the actual incidence. The conflicting data exists as to whether complication rates between colostomies and ileostomies are the same.[5,6]

A number of patients undergo surgeries for faecal diversion in emergency. But despite of number of such surgeries done, complications are still inevitable. Patients undergoing stoma formation are at risk of developing a wide range of complications following surgery.[7] In a study conducted by Gooszen et al and Carlsen et al reported complication rates specific to loop ileostomies can be significant, ranging from 5.7% to 41% and reoperation rates for loop ileostomies vary widely.[8,9] In the present study also we have reported higher complications with ileostomy as compared to colostomy and even loop ileostomy have still higher than end ileostomy.

Complication rates are also vary in which circumstances stoma created. most of the authors agreed that emergency operations with gross peritoneal soiling, creation of stomas in debilitated or malnourished patients and gangrenous or perforated intestine particularly large perforation or multiple perforations forced to make stomas leads to increased postoperative morbidity, this has not been supported in several studies.[10,6] We have done all our surgeries in emergency setting, this is in contrast to the above studies. Twenty-eight percent of complications were reported by Park et al in their series within one month of time and about six percent were occurred after one month. The Overall incidence of complications was seen in their series in loop ileostomy (75%) and lowest incidence was seen end transverse colostomy which is (6%). Skin irritation was the most common early complications seen in (12%).[11] They have also reported higher complications with ileostomies than colostomies. the present study also shows higher complications with ileostomies.[11]

In our study we have also reported high complications in the form of excoriation of skin 27 patients (58.69%)of end ileostomy and sixteen patients of loop ileostomy (43.78%). Pearl et al reported a complication rate of 25.9% in 610 patients who were undergoing stoma formation. peristomal skin irritation.[12] The most common early complication in their study was (42.1%). These were more frequent associated with ileostomies than colostomies. Emergency stoma formation was associated with highest complication rates. Duchesne et al observed complication rate of 25% in 164 patients with intestinal stomas over a 3-year period, with 39% of these occurring in the early period.[5] The most commonly seen early complications in their study were stomal necrosis (4.3% of all patients, 17.1% of complications), peristomal skin irritation (1.6% of all patients, 7.3% of complications), and stoma retraction (1.2% of all patients, 4.6% of complications). There are many factors responsible for 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.[13]

The most common stoma made in our study was end ileostomy in 46 patients (54.11%) loop ileostomy 27 (31.76%) followed by end colostomy 9 (10.58%) and loop colostomy 3 (3, 52%) with most of them being formed in males 83.52%. Similarly in a study by Shah et al14 loop ileostomy was the most common stoma formed (70%) followed by loop colostomy (17%). Ileostomy accounted for 70% stomas. In another study by Ghazi et al followed by colostomy in 30%.[15] In a study by Safirullahetal loop ileostomy was formed in 43% cases and loop colostomy in 17.4% cases.[16] Robertson et al reported stoma related complications rate between 10 and 70%, which may be because of varying lengths of follow up.[6]

Duschesne and Harris who reported complications in 26%, 25% and 25% of their cases respectively.[5,17] They reported the incidence of peristomal skin irritation in their study ranges from 3-42% and mild peristomal dermatitis to full thickness skin necrosis to ulceration have reported. The most common complication reported in their study was peristomal skin irritation and erythema (36%) followed by laparotomy wound infection (13.4%) and peristomal skin infection, abscess formation and fistula formation (8.1%).

In the present study wound infections and ileus was commonly seen. There were five patients of burst abdomen in end ileostomy, managed conservatively. Ischemia was reported in three patients of ileostomy and one patient of colostomy.

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 patients.[12,18] In our study there was a mortality rate of 4.70% where patients died due to primary disease; which is less as compare to the mortality rate of 10% reported by Jhobta et al.[19] The reported incidence of peristomal skin irritation ranges from 3 to 42% in their study.[20] The degree of irritation may range from that of a mild peristomal dermatitis to full-thickness skin necrosis and ulceration. The majority of these instances are due simply to stoma neglect and improper placement or fit of the appliance, resulting in appliance leakage. Often, the patient is not fully comfortable caring for the stoma independently at the time of discharge from the hospital. Every effort should be taken to ensure that appropriate pre discharge

Although abdominal stoma is a lifesaving procedure, but carries significant number of complications. Despite extensive surgical expertise, complications of stoma creation still occur and often cause social isolation and a significant reduction in the quality of their life. Factors which affect the type and frequency of complications include surgical specialty, surgeon experience, in emergency stoma 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 related abdominal stomas and their management in the respective ostomy.

CONCLUSION

Surgeries resulting in stomal complications show a higher frequency of complication in end ileostomy and in male may be due to more number of male patients. skin excoriation, wound infection and ileus are the most common complication. To study the incidence and severity of abdominal stomas complications and the factors that lead to the development of such complications require 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 struggling for life with their stomas.

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