



ILEOSTOMIES AND COLOSTOMIES; COMMON REASONS AND COMPLICATIONS OF CONSTRUCTION: ONE YEAR STUDY

Dr. Shabab Hussain¹, Dr. Viqar Aslam², Dr. Sajjad Muhammad Khan³, Dr. Waqar Alam Jan⁴

1. Registrar,
Department of General Surgery,
Lady Reading Hospital, Peshawar
2. Assistant Professor,
Department of General Surgery,
Lady Reading Hospital, Peshawar
3. Professor,
Department of General Surgery,
Lady Reading Hospital, Peshawar
4. Associate Professor,
Department of General Surgery,
Lady Reading Hospital, Peshawar

Correspondence Address:

Dr. Shabab Hussain
Registrar
Department of General Surgery
Lady Reading Hospital, Peshawar
rashidmalik_62@hotmail.com

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ABSTRACT... Background: An intestinal stoma is an opening of intestine on the anterior abdominal wall made surgically. The commonly performed procedures include colostomy and ileostomy. The purpose of the present study was to identify indications for commonly performed intestinal stomas and to study complications related to it. **Objective:** To identify indications for commonly performed intestinal stomas and to study complications related to it. **Study Design:** Observational study. **Setting:** Department of General Surgery, Unit- B, Lady reading Hospital, Peshawar. **Period:** 1st Jan 2013, to 31st Dec 2013. **Subjects and Method:** A total of 106 patients who underwent surgery and ended up in intestinal stomas, ileostomy or colostomy, were included in the study. Indications, immediate and late complications of stomas were recorded. **Results:** A break up of 106 patients of different intestinal stomas. Majority (61.32%) of patients were males. There were 49 ileostomies and 57 cases of colostomy making a total of 106 patients. Main indications of Ileostomy were enteric perforation (55.10%), and intestinal tuberculosis (20.40%). Main indications of colostomy were penetrating injuries (50.88%), and intestinal obstruction. In a total of 106 stomas local complications appeared in 23 (21.69%). Skin excoriation, ulceration, lap and wound infection were the most common respectively. Seventy eight stomas including 36 ileostomies and 42 colostomies were closed on an average of 3 months after primary operation. There were 7 cases of wound infection, 2 anastomotic leak-ages and one mortality (1.3%) in the stoma reversal group. **Conclusion:** Common indications for intestinal stomas were abdominal penetrating trauma, enteric perforation, intestinal obstruction and intestinal tuberculosis. Main complications included local skin problems, wound infection and retraction.

Key words: Colostomy, Ileostomy, Indications, Complications.

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INTRODUCTION

The word "Stoma" is a Greek word meaning mouth or opening.¹ Thus an intestinal stoma is a surgical created opening of the intestine which is then brought out through anterior abdominal wall.² Any hollow viscus can be manipulated into an artificial stoma when required, though the most Commonly performed intestinal stomas include colostomy and ileostomy.³ When an opening is created surgically in colon and is then brought through abdominal wall it is termed as colostomy and same is the case with ileostomy from ileum. Although evidences of surgery on bowel can be found in ancient era of Aristotle's however colostomy was first performed by Litre a French surgeon for the management of a case of imperforate anus during early eighteenth century.⁴ Later

on during world war 2 colostomy formation was part of war surgery in dealing with colonic injuries and had significantly decreased the mortality.⁵ Brooke first introduced ileostomy formation in surgical management of ulcerative colitis in and it was then adopted in surgical practice after he demonstrated everted ileostomy in 1952.⁶

Major indications for ileostomy include extensive bowel injury, which precludes primary anastomosis like longstanding peritonitis, intestinal obstruction, radiation enteritis, ischemia, inflammatory bowel diseases, tubercular and enteric colitis in the developing world and rectal causes.⁷ In trauma settings shock, marked blood loss, significant faecal contamination associated injuries, late presentation and multiple injuries are important fac-

tors favoring stoma formation than primary repair. Generally the terminal ileum is used to form an ileostomy, and can be temporary or permanent, an end or a loop stoma.⁸ Colostomy is performed in scenarios of large bowel obstruction secondary to benign or malignant cause, perforation with peritonitis, rectovaginal fistulas and perianal sepsis.⁹

Intestinal stoma related complications can be either early such as metabolic derangements, skin irritation, ischaemia and stoma retraction or late including parastomal hernia, prolapse and stenosis, moreover stoma and its complications produce social, domestic and psychological problems.¹ But thorough preoperative preparation and optimization of patients and correction of nutritional status, and timely management of stoma related complications usually give satisfactory results.¹⁰

In this current study, an attempt was made to identify common reasons for stoma formation and to highlight stoma related complications in our hospital which is main referral centre for tertiary level care of patients of whole province. This insight will help us decrease the problems associated with this commonly performed general surgical procedure.

MATERIALS AND METHODS

This is an observational descriptive study was conducted in a surgical B unit of Lady Reading Hospital Peshawar, over period of one year from 1st January 2013 to 31st December 2013. Simple convenient sampling technique was adopted. The study included all the patients who ended up with some sort of intestinal stoma like ileostomy or colostomy during their surgery. Patients under 14 years with urinary diversions where bowel stomas were created and those with psychiatric complications related to stomas were excluded from the study. Data was collected on proformas already designed for this purpose. On arrival in emergency or outpatient department, routine lab tests were performed. Final diagnosis and operative procedure were decided by the operating surgeon. Operative findings, procedure done, immediate and late complications were noted. Final

diagnosis was made after a report of histopathology wherever required. The details about stoma and its related complications were recorded. During stay in the ward, attendants were briefed about management of stoma and related problems. Patients were followed through OPD at 1, 6 and 10 weeks intervals. Reversal of stoma after proper gut preparation was done after 3 months on elective basis. Any associated complications were also recorded. In loop colostomies and ileostomies, either perforation was exteriorised as such or posterior wall repaired and then brought out through same place in anterior abdominal wall.

RESULTS

A total of 106 patients were ended up in stoma formation during one year mentioned study period with the mean age of 46.33 ± 1.70 years and age range of 15-85 years and stomas were in high frequency that is 46.41% in the age range of 50-59 years followed by 17.92% in age group of 30-39 years (Table I).

| Age Group (years) | No. | % |
|-------------------|-----|-------|
| 10 – 19 | 6 | 5.66 |
| 20 – 29 | 14 | 13.20 |
| 30 – 39 | 19 | 17.92 |
| 40 – 49 | 12 | 11.32 |
| 50 – 59 | 28 | 26.41 |
| 60 – 69 | 17 | 16.03 |
| >70 | 10 | 9.43 |

Table-I. Age wise distribution of intestinal stomas (n=106)

Most of the stomas were created in male gender which is about 61.32% and 38.68% were in females making male to female ratio of 1.5:1 (Table II).

| Gender | No. | % |
|--------|-----|-------|
| Male | 65 | 61.32 |
| Female | 41 | 38.68 |

Table-II. Gender wise distribution of Intestinal Stomas (n=106)

Regarding the types of stoma double barrel colostomy was common constituting 33.96% followed by loop ileostomy 31.13% (Table III). Com-

mon indication for ileostomy formation was enteric perforation (55.10%) followed by intestinal tuberculosis (20.40%) and for colostomies the main indication was penetrating injury (50.87%) followed by obstruction [33.3%] (Tables IV-V). In a total of 106 stomas local complications appeared in 23 (21.69%). Skin excoriation and ulceration, lap, wound infection were the most common respectively. Seventy stomas including 36 ileostomies and 42 colostomies were closed on an average of 3 months after primary operation. There were 7 cases of wound infection, 2 anastomotic leakages and 1 mortality (1.3%) in the stoma reversal group (Tables VI-VII).

| Stoma Type | No. | % |
|--|-----|-------|
| Loop Ileostomy | 33 | 31.13 |
| Double Barrel Ileostomy | 14 | 13.21 |
| End Ileostomy | 2 | 1.88 |
| Loop Colostomy | 13 | 12.26 |
| Double Barrel Colostomy | 36 | 33.96 |
| Hartman's Procedures (Temporary end Colostomy) | 8 | 7.54 |

Table-III. Types of Intestinal Stomas (n=106)

| Indication | No. | % |
|--------------------------------|-----|-------|
| Enteric Perforation | 27 | 55.10 |
| Intestinal Tuberculosis | 10 | 20.40 |
| Penetrating Injury | 8 | 16.32 |
| Diversion / covering Ileostomy | 4 | 8.16 |

Table-IV. Indications for ileostomy (n=49)

| Indication | No. | % |
|----------------------|-----|-------|
| Penetrating Injury | 29 | 50.87 |
| Obstruction | 19 | 33.33 |
| Diversion colostomy | 7 | 12.28 |
| Rectovaginal Fistula | 1 | 1.75 |
| Blunt Trauma | 1 | 1.75 |

Table-V. Indications for Colostomy (n=57)

| Complications | No. | % |
|----------------------------|-----|------|
| Skin Excoriation | 4 | 3.77 |
| Laparotomy wound infection | 2 | 1.88 |
| Stomal Diarrhea | 2 | 1.88 |
| Prolapse | 1 | 0.94 |
| Retraction | 1 | 0.94 |
| Necrosis | 1 | 0.94 |

Table-VI. Complications of Ileostomy (overall ileostomy complications rate = 10.37%)

| Complications | No. | % |
|-----------------------------|-----|------|
| Laparotomy wound infections | 4 | 3.77 |
| Skin Excoriation | 2 | 1.88 |
| Retraction | 2 | 1.88 |
| Bleeding | 1 | 0.94 |
| Stenosis | 1 | 0.94 |
| Para Stomal Hernia | 1 | 0.94 |
| Necrosis | 1 | 0.94 |

Table-VII. Complications of Colostomy (overall Colostomy complications rate = 11.32%)

DISCUSSION

Stoma or ostomy is a surgical exteriorization of a segment of gut through abdominal wall for the temporary or permanent diversion of fecal stream after resection of a diseased portion of the gut.¹¹ Ileostomy and colostomy are commonly performed intestinal stomas in general surgical practice¹. Stoma formation is safe and life saving surgical procedure in certain situations like for example in emergency surgery.^{12,13} However patients having stoma are also prone to develop a wide range of complications.¹⁴ Patients who are at greater risk of developing stoma related complications are those of old age, obese, diabetic and those taking steroids or immunosuppressant drugs etc.¹⁵

A total of 106 patients were ended up in stoma formation during one year mentioned study period. Stomas were mainly constructed in middle aged males which is according to a study in literature.² In our study number of colostomies were more as compared to ileostomies which corresponds to a study in literature² but in other studies number of ileostomies were more.^{1,16,17} In our study main indication for colostomies was penetrating injury

(50.87%) followed by obstruction (33.3%) which is in agreement with other studies.^{2,8} This shows aggressive behaviors and increased tendency towards violence in our society, in most cases large bowel obstruction was because of sigmoid volvulus which shows that it is common in this part of the world.

Common indication for ileostomy formation was enteric perforation (55.10%) followed by intestinal tuberculosis (20.40%) which is in accordance with different studies literature^{1,18}. But in contrast to this another study¹⁷ show colorectal carcinoma as a common cause for ileostomy formation. In this current study the commonest type of stoma created was double barrel colostomy constituting 33.96% of all other types of stomas which is in contrast to other studies.^{16,17,19} where loop ileostomy was common, the reason behind is that we received huge bulk of patients with penetrating injuries and this was main indication for colostomies.

As already discussed that intestinal stoma formation is life saving surgical procedure in certain situations like for example in emergency surgery where we have to deal polytrauma patients and diseased gut in such circumstances definitive bowel repairs are disastrous moreover it further prolongs operative time which further jeopardizes patients physiology. But like other surgical procedures stoma formation may also results in local, systemic and psychological complications.^{14,20}

In our study in a total of 106 stomas complications appeared in 23 so overall complications rate was 21.69% which falls within the range mentioned in literature.²¹⁻²³ Almost all the complications observed were local complications. In our study complications related to ileostomy were 10.37% as compared to colostomies which were 11.32% thus showing that ileostomies were relatively easier to manage through conservative means this in accordance with that mentioned in literature.^{24,25} The commonest complication related to ileostomy was skin excoriation and that with colostomy was midline wound infection other studies also show similar results.^{1,26}

Seventy eight stomas including 36 ileostomies and 42 colostomies were closed on an average of 3 months after primary operation. There were 7 cases of wound infection, 2 anastomotic leakages and 1 mortality (1.3%) in the stoma reversal group other studies also show the same fact.^{2,27}

CONCLUSION

Common indications for intestinal stomas were abdominal penetrating trauma, enteric perforation, intestinal obstruction and intestinal tuberculosis. Main complications included local skin problems, wound infection and retraction. Stoma formation is inevitable in general surgical practice particularly in emergency and trauma surgery where it plays its role in decreasing mortality and morbidity. Stoma related complications can be decreased by continuous monitoring, early detection and treatment. Ostomy clinic is a public health profession and requires professionalism for success. These are parameters of dignity for a country and play a major role in providing the data to justify the establishment, implementation and monitoring of a national ostomy association, therefore establishment of an ostomy clinic is of pivotal importance.





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AUTHORSHIP AND CONTRIBUTION DECLARATION

| Sr. # | Author-s Full Name | Contribution to the paper | Author=s Signature |
|-------|--------------------------|---|---|
| 1 | Dr. Shabab Hussain | Writing of manuscript and compiling results |  |
| 2 | Dr. Viqar Aslam | Data collection & weiting of manuscript |  |
| 3 | Dr. Sajjad Muhammad Khan | Statistical analysis & guidance in writing the manuscript |  |
| 4 | Dr. Waqar Alam Jan | Designing of project & guidance in writing the manuscript |  |