

Study of Colostomy: Its Indication and Complication

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Abstract: *Objective:* To evaluate the indications of colostomy and study its complication. *Methodology:* This prospective study was carried out in department of general surgery, Al-Ameen medical college Bijapur from 2006 to 2016. A total 118 patients of colostomies done either elective or emergency setting for any cause was included in this study. *Results:* out of total 118 patients, Males (n=87 out of 118) 74% were commonly affected then female (n=31 out of 118)26%. Maximum number of cases were in 51 to 60 age group (n=35 out of 118) 30%. The most common indication for colostomy formation was carcinoma (n=55, 46.6%), followed by intestinal obstruction (n=28, 23.7%). In colostomy patients total n=57 complications were observed in 54 patients that is 46.4% of patients. In our study the complication were reported as Local sepsis 25%, Prolapse 7%, Retraction 4%, Necrosis 4%, Parastomal hernia 1.6%, Stenosis 1.6%, Intestinal obstruction 1.6%, Bleeding 1.6%. *Conclusion:* The carcinoma of the colon and rectum is the most common indication for the colostomy. The local sepsis is the most common complication.

Keywords: sigmoid colostomy, end colostomy, loop colostomy, intestinal stoma, local sepsis, parastomal hernia

1. Introduction

The first surgical stoma was created more than 200 years ago¹. The word stoma comes from the Greek word meaning mouth or opening. An intestinal stoma is an opening of the intestine on anterior abdominal wall made surgically².

Littre of Paris was the first to make a ventral colostomy in 1970 for a boy with imperforate anus¹.

Stomas are used to divert the faecal stream away from distal bowel in order to allow a distal anastomosis to heal as well as to relieve obstruction in emergency situation³. Various indication for which intestinal stomas are formed Ulcerative colitis, bowel obstruction, cancer of colon and rectum, crohn's disease, congenital bowel defects, uncontrolled bleeding from large intestine, injury to the intestinal tract, inflammatory bowel disease, ischemic bowel disease, carcinoma of urinary bladder and spinal cord injury⁴.

Stomas though lives saving procedure, it carries significant number of complication and cause social isolation and significant reduction quality of life⁵. The earliest stomas were actually unintentional ones, enterocutaneous fistula resulting from penetrating abdominal injuries or complication of intestinal disease such as incarcerated hernia⁶.

Patients undergoing stoma formation are at risk of developing a wide range of complication following surgery⁷. There are many factors suggested to predispose to stoma complication like high body mass index, inflammatory bowel disease, use of steroids and immunosuppressant drugs, diabetes mellitus, old ages, emergency surgery, surgical techniques and surgeons experience⁸.

The aim of our study is to evaluate indications of colostomy and study its complication.

2. Materials and Methods

This prospective study was carried out in department of general surgery, Al-Ameen medical college Bijapur from 2006 to 2016.

A total 118 patients of colostomies done either elective or emergency setting for any cause was included in this study. Data was collected from patient's record maintained by department of surgery from operated notes and patients case records. These cases were studied to evaluate indication, types and complication of colostomies.

Inclusion Criteria

- 1) All patient male and female between 1-70 years
- 2) All emergency and elective cases undergoing intestinal stoma construction

Exclusion Criteria

- 1) Patients undergoing urinary stoma construction
- 2) Patients undergoing stoma construction as indication for gynaecological disorders

3. Results

Table 1: Age Distribution

Age group(years)	Frequency	Percent
1 – 10	12	10
11 – 20	9	7.6
21 – 30	13	11
31 – 40	24	20.3
41 – 50	11	9.3
51 – 60	35	30
>60	14	11.8
TOTAL	118	100

In our study Maximum number of cases were in 51 to 60 age group (n=35 out of 118) 30% followed by 31 to 40 age group (n=24) table 1.

Table 2: Sex distribution

Sex	Frequency	Percent
Female	31	26
Male	87	74
Total	118	100

In our study Males (n=87 out of 118) were commonly affected then female (n=31 out of 118)26% table 2.

Table 3: Elective Vs emergency

Elective	Emergency
13	105
11%	89%

In our study 105(89%) stomas are made in emergency setting and in 13(11%) were made in routine table 3.

Table 4: Indications

Indications	Number of stomas	Percentage
Carcinoma colon and rectum	55	46.6
Intestinal obstruction	28	23.7
Abdominal trauma	16	13.6
Ano rectal malformation	10	8.5
Sigmoid volvulus	4	3.4
Hirschprung disease	3	2.5
High fistula in ano	2	1.7
TOTAL	118	100

In our study the most common indication for colostomy formation was carcinoma (n=55, 46.6%), followed by intestinal obstruction (n=28, 23.7%) followed by abdominal trauma (n=16, 13.6%), followed by anorectal malformation(n=10, 8.5%), followed by sigmoid volvulus (n=4, 3.4%) followed by hirschprung disease (n=3, 2.5%), followed by high fistula in ano(n=2, 1.7%) table 4.

Table 5: Types of stoma

Procedure	Numbers	Percent
Sigmoid colostomy	78	66
Loop colostomy	33	28
End colostomy	7	6
TOTAL	118	100

In our study the most commonly performed colostomy is the sigmoid colostomy 66%, followed by the loop colostomy 28% and least is end colostomy 6% table 5.

Table 6: Complication

Complication	Number	Percent
Local sepsis	30	25
Prolapse	9	7
Retraction	5	4
Necrosis	5	4
Parastomal hernia	2	1.6
Stenosis	2	1.6
Intestinal obstruction	2	1.6
Bleeding	2	1.6
Electrolyte imbalance	0	0
	57	46.4

In colostomy patients total n=57 complications were observed in 54 patients that is 46.4% of patients. In our study the complication were reported as Local sepsis 25%, Prolapse 7%, Retraction 4%, Necrosis 4%, Parastomal hernia 1.6%, Stenosis 1.6%, Intestinal obstruction 1.6%, Bleeding 1.6% table 6.

4. Discussion

Taking into account the various data from literature and comparing it with present series a few interesting fact is come into lime light.

Maximum number of cases were in 51 to 60 age group (n=35 out of 118) 30%. Males (n=87 out of 118) were commonly affected then female (n=31 out of 118)26%. While study conducted by P.Sumathi et al. showed maximum number of patients was in the age group of 55 to 65 year (n=32 out of 50) and males (n=36 out of 50) are more commonly affected than females (n=14)⁹. While study conducted by Ahmad Z et al. showed out of 100, 70 were males and 30 were females. The mean age group was 50.5 ± 29.01 year with a range of 12 to 85 year¹⁰.

In our study 105(89%) stomas are made in emergency setting and in 13(11%) were made in routine. While in study conducted by Ahmad Z et al. showed 97 stomas were made in emergency and 3 stoma were made in routine¹⁰.

The most common indication for colostomy formation was carcinoma (n=55, 46.6%), followed by intestinal obstruction (n=28, 23.7%) followed by abdominal trauma (n=16, 13.6%), followed by anorectal malformation(n=10, 8.5%), followed by sigmoid volvulus (n=4, 3.4%) followed by hirschprung disease (n=3, 2.5%), followed by high fistula in ano(n=2, 1.7%). Study conducted by P.Sumathi et al. showed the most common indication for stoma were carcinoma followed by abdominal trauma⁹.

In our study the most commonly performed colostomy is the sigmoid colostomy 66%, followed by the loop colostomy 28% and least is end colostomy 6%.while study conducted by P. Sumathi et al. showed the most common stoma created was colostomy n=41 out of 50. Same study showed total 41 patients underwent colostomy formation of which 22 were end colostomy and 19 were transverse loop colostomy⁹.

While study conducted by Ahmad Z et al. showed, the most common stoma was loop ileostomy followed by sigmoid colostomy, followed by transverse loop colostomy with most of them being formed in males 76%¹⁰. Similar in a study by Shah JN et al. loop ileostomy was the most common stoma formed(70%) followed by loop colostomy (17%)¹¹. Ileostomy accounted for 70% stomas in another study by Ghazi MA et al. followed by colostomy in 30%¹². In a study by Safirullah et al. loopileostomy was formed in 43% cases and loop colostomy in 17.4% of cases⁵.

In colostomy patients total n=57 complications were observed in 54 patients that is 46.4% of patients. In our study the complication were reported as Local sepsis 25%, Prolapse 7%, Retraction 4%, Necrosis 4%, Parastomal hernia 1.6%, Stenosis 1.6%, Intestinal obstruction 1.6%, Bleeding 1.6%. The local sepsis complication were commonly seen in study conducted by P. Sumathi et al. in the form of chemical dermatitis and folliculitis occur in patients undergone end colostomy. In all of them, major was alack of proper seal around stoma and stoma bag. All of them were treated by applying a colostomy paste which formed a protective barrier over the skin. Use of a skin sealent with a copolymer or plasticizing agent without alcohol provide a thin protective film on the skin surface helps prevent skin stripping of the epidermis during adhesive removal and as a moisture barrier⁹.

The most common complication reported in Ahmad Z et al. 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%)¹⁰.

A study by Ratliff et al. has shown peristomal irritation in 53% cases¹³, while Pearl et al. showed peristomal erythema as the most common complication in 42%¹⁴. Ambreenmuneer reported skin excoriation in 18% cases¹⁵.Safirullah et al. reported skin erythema in 12% followed by prolapse 6% and retraction 4%⁵.

In study conducted by P. Sumathi et al. showed loop colostomy tends to prolapse more than colostomy and proximal more than distal. Then necrosis was observed in 5% of patients and found in immediate post-operative period. It requires laparotomy and revision of stoma⁹.

Although stomal complication is a novel risk for mortality, it is acknowledged that others established prognostic indicators hold stronger influence. As such age, urgency of surgery and diagnosis are found to influence morbidity and mortality.

Authors Contribution

Study Conception and Design : Dr.Nishikant Gujar
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