Study of Colostomy: Its Indication and Complication

Dr. Nishikant Gujar¹, Dr. Vijay Shivpuje², Dr. Shiraz Ahamed Sharief³, Dr. Vijay N⁴

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

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 situation. 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 injury.

Stomases though lives saving procedure, it carries significant number of complicationand cause social isolation and significant reduction quality of life. Theearliest stomases were actually unintenous ones, enterocutaneous fistula resulting from penetrating abdominal injuries or complication of intestinal disease such as incarcerated hernia.

Patients undergoing stoma formation are at risk of developing a wide range of complication following surgery. 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 experience.

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. Datawascollected 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

<table>
<thead>
<tr>
<th>Age group(years)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 10</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>11 – 20</td>
<td>9</td>
<td>7.6</td>
</tr>
<tr>
<td>21 – 30</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>31 – 40</td>
<td>24</td>
<td>20.3</td>
</tr>
<tr>
<td>41 – 50</td>
<td>11</td>
<td>9.3</td>
</tr>
<tr>
<td>51 – 60</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>&gt;60</td>
<td>14</td>
<td>11.8</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>100</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Male</td>
<td>87</td>
<td>74</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>100</td>
</tr>
</tbody>
</table>

In our study Males (n=87 out of 118) were commonly affected then female (n=31 out of 118)26% table 2.
In our study 105(89%) stomas are made in emergency setting and in 13(11%) were made in routine table 3.

### Table 4: Indications

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

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 hirsprung disease (n=3, 2.5%), followed by high fistula in ano(n=2, 1.7%) table 5.

### Table 5: Types of stoma

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sigmoid colostomy</td>
<td>78</td>
<td>66%</td>
</tr>
<tr>
<td>Loop colostomy</td>
<td>33</td>
<td>28%</td>
</tr>
<tr>
<td>End colostomy</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>118</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local sepsis</td>
<td>30</td>
<td>25%</td>
</tr>
<tr>
<td>Prolapse</td>
<td>9</td>
<td>7%</td>
</tr>
<tr>
<td>Retraction</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Necrosis</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Parastomal hernia</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Stenosis</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Intestinal obstruction</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Bleeding</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Electrolyte imbalance</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>57</td>
<td>46.4%</td>
</tr>
</tbody>
</table>

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.
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%).

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

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 stoma.

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
Supervision: Dr. Nishikant Gujar
Drafting of Manuscript: Dr. Vijaya Shivapuje
Acquisition of data: Dr. Shiraz Ahamed Sharief
Dr. Vijay N

5. Acknowledgement

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References