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Frequency of associated complications with colostomy reversal.

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Abstract:

Objective: The main aim of this study was to find the frequency of complications associated with colostomy reversal.

Study Design: Retrospective study

Place and duration of study: This study was carried out in surgical units of General Hospital Lahore in a duration of 9 months from February 2018 to October 2018.

Materials and Methods: A total of 131 patients were included in this study who had undergone colostomy reversal. Prior to reversal of colostomy, patency of distal loop was checked with loopogram, Barium study and sigmoidoscopy. For preparing the bowel patient was kept on clear liquids two days prior to surgery and patient was kept NPO one day before the surgery and enema was used to clean the gut. Sufficient fluids were given to the patient to maintain adequate hydration and glucose balance. Colostomy reversal was done using vicryl. Patients were admitted in ward and post-operative complications were checked.

Results: Among the 131 patients included in this study, 113(82.6%) were male. 21-40 years was the mean range in which 86 (65.6%) patients were included. Reversal after 3 months was done in around 98 (75%) of patients. 14 patients developed post-operative complications giving 10.6% morbidity. Mortality rate was 0.76% as one patient died but this mortality was not related to complications of reversal but to the cardiac ischemia.

Conclusion: Reversal of colostomy is usually not a safe operation having low mortality and morbidity.

Keywords: colostomy reversal, post-operative complications

Introduction: There are multiple types of colostomy reversals including loop sigmoid colostomy, double barrel colostomy, loop transverse colostomy, Hartmann's procedure in which we close the rectal stump and do end colostomy. In infected cases where primary

anastomosis cannot be performed either due to trauma or infection of gut, loop or diversion colostomy is an important procedure to divert the feces by exteriorization of gut and provide safe time period for the gut to heal. It is a highly beneficial and lifesaving procedure. The mortality and morbidity associated with this procedure is very low. The main problem with colostomy is that patient has to undergo second operation under general anesthesia for reversal. The main aim of study was to find the complications associated with colostomy reversal.

Materials and Methods: A total of 131 patients were included in this study who had undergone colostomy reversal. Patients after initial procedure were kept on follow up and 3 months later were admitted via OPD one day prior to surgery. Informed consent was taken from all the patients included in this study. A predesigned proforma was used to collect the data. Ethical committee approval was taken. The time duration between initial procedure and its reversal was noted for each patient.

Prior to reversal of colostomy, patency of distal loop was checked with loopogram, Barium study and sigmoidoscopy. For preparing the bowel patient was kept on clear liquids two days prior to surgery and patient was kept NPO one day before the surgery and enema was used to clean the gut. Sufficient fluids were given to the patient to maintain adequate hydration and glucose balance. Serum electrolytes were checked to avoid any complications. Colostomy reversal was done using vicryl 2/0. Patients were admitted in ward and post-operative complications were checked.



Results: Among the 131 patients included in this study, 113(82.6%) were male. 21-40 years was the mean range in which 86 (65.6%) patients were included Table 1.

Table 1.

Age	Number of Patients	Percentage
<10 Year	0	0%
11-20 Years	18	13.7%
21-30 Years	50	38.1%
31-40 Years	36	27.5%
41-50 Years	11	08.4%
51-60 Years	5	03.8%
>60 Years	11	8.4%

119 (90.86%) patients underwent colostomy due to trauma and non-traumatic cases were 12 (9.1%). Traumatic cases included 105 (80.1%) patients with firearm injuries and 8 (6.1%) due to blunt abdominal trauma. Table 2

Table 2:

Traumatic Causes	119 (90.8%)
Penetrating Injury	
Gunshot	105
Stab wounds	06
Blunt Trauma	
Road traffic Accidents	04
Fall	02
Foreign body in Rectum	02
Non Traumatic	12 (9.1%)
Anal Stenosis	02
Multiple Fistulae in Ano	01
Rectovaginal Fistulae	01
Carcinoma Descending & Sigmoid Colon	05
Angiodysplasia of Rectum	01
Ischemia of Descending & Sigmoid Colon	02

Colonic carcinoma was most common in non-traumatic cases including 5 (3.8%) cases.

Colostomy sites were 50% in sigmoid and descending colon and transverse and ascending colon cases were 27% and 23% respectively. The most frequent procedure performed in 111 (84.7%) of the cases was loop colostomy. Table 3

Table 3.

Types of Colostomy	
Loop Colostomy	111 (84.7%)
Double-barrel Colostomy	05 (3.8%)
Colostomy + Mucous Fistula	04 (3.1%)
Hartman's Procedure	11 (8.1%)

Reversal after 3 months was done in around 98 (75%) of patients. 14 patients developed post-operative complications giving 10.6% morbidity. Superficial wound infection was seen in 9 cases which was managed with wound care, daily dressing and stitch removal. After culture and sensitivity report appropriate antibiotics were given. Wound was allowed to heal and when it got clean the again stitches were applied. Total 8 cases with intra-abdominal infections were seen. Other complications and their frequency is shown in Table 4.

Table 4. Morbidity

Wound	
Wound infection	09
Intra-Abdominal	
Anastomotic Leak	02
Intra-abdominal Abscess	01
Intestinal Obstruction	01
Incisional Hernia	02
Prolonged Paralytic Ileus	01
Colicky Abdominal Pain	01
Others	
Urinary Tract Infection	02
Respiratory Tract Infection	01
Deep Venous Thrombosis	01



Mortality rate was 0.76% as one patient died but this mortality was not related to complications of reversal but to the cardiac ischemia.

Discussion: Both traumatic and non-traumatic factors can be the factors due to which colostomies are made. Large number of colostomies were made in young males due to the injuries caused by firearm. 3

Reversal of colostomy is an elective procedure in which patient is admitted in ward prior to surgery. Gut preparation is done using both mechanical and chemical methods. Distal loop patency is checked using loopogram or barium studies.

Morbidity in case of colostomy reversal is linked to several factors including bowel preparation, technique, sterility, colostomy site and above all surgeon's experience.

Duration after which reversal is performed is still debatable but some prefer conventional delayed closure over same admission colostomy closure 5.

Some prefer that closure after 90 days have less complications as it given ample time for the infection to settle which was caused by the primary infection. Advantage of early closure is that it dilates the gut gently which can be later obstructed by the formation of stricture.

Colostomy reversal is usually done after 3 months. Lower complications are seen in cases where reversal is delayed up to 3 months. 6,7

Stoma is closed using vicryl 2/0 suture wither in continuous or interrupted fashion using single or double layer. Skin is closed with interrupted sutures after drain placement in pelvis.

Morbidity rate after reversal lies between 105 to 38%. 1,2,6,9. Morbidity in our study was 10.6% and complications were minor which were treated with simple management.

Conclusion: Reversal of colostomy is usually not a safe operation having low mortality and morbidity.

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