MORBIDITY AND MORTALITY IN PATIENTS WITH COLOSTOMIES — A STUDY ON 50 CASES

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ABSTRACT

Objective: To discuss the morbidity and mortality associated with the fashioning of colostomy and its closure.

Material and Methods: This study was conducted in the Surgical "A" unit of Post Graduate Medical Institute, Lady Reading Hospital, Peshawar. A series of 50 consecutive patients with colostomy for various indications were managed in surgical "A" unit and emergency departments of LRH.

Results: Fire arm injuries (34%) were the most common indication of colostomy, followed by blunt trauma (26%), anorectal malignancy (14%) and sigmoid volvulus (12%). Total of 20 patients suffered from 24 stoma related problems. The hospital stay was between 5-46 days. Thirty six of these patients under went colostomy closure with an average hospital stay of 11 days. There was one death.

Conclusion: Careful stoma formation minimizes risks of complications associated with it. In our study there was no difference between single layer and double layer closure.

Key words: Colostomy (fashioning and closure), Morbidity, Mortality.

INTRODUCTION

The construction of colostomies for colonic injuries and large gut obstruction is considered to be a safe procedure in the hands of junior surgeons[1,2,3]. It has its own morbidity and mortality associated with it. From the psychological trauma of a stoma to the retraction of colostomies, a variety of complications exists. The procedure for closure of stoma, though it is done as an elective procedure, is also not free from risks. This study was performed on a series

of 50 patients with colostomies in the surgical "A" unit and casualty departments of Lady Reading Hospital. The patients were closely observed for any complications arising from the construction of stoma, hospital stay and then after closure of stomas.

MATERIAL AND METHODS

The study was conducted in the Surgical "A" unit of PGMI, LRH, Peshawar from 1st July 2001 to 30th of June, 2002. It included 50 consecutive cases upon whom colostomy was performed. The patients below 12 years & those with intestinal fistulae and urinary conduits were excluded. All the patients of either sex above 12 years of age with a colostomy were included. Bowel preparation was not possible in emergency cases but in elective cases like anorectal malignancy it was done by starting liquid diet 2 days prior to surgery and by daily Kleen enemas. Similar procedure was adopted for the closure of colostomies. Patients were examined in out-patient department after two, six and ten weeks after their discharge from the hospital.

RESULTS

Of the 50 cases 42 were males and 08 females. The minimum age was 13 years with a Firearm injury and maximum age was 70 years with sigmoid volvulus with mean age of 40 years. Seventeen colostomies (34%) were performed for firearm injuries, 16 (32%) for intestinal obstruction and 13 (26%) for injuries other than firearm. (Table-1)

Loop colostomy was the most commonly performed procedure (25 cases =50%), end colostomy with mucous fistula (11/50=22%), Hartmann's colostomy (9/50=18%). Five (10%) under went permanent colostomies with resection of distal gut. Table-2.

Twenty patients with colostomies had 24 stoma related problems, four of them were reoperated for complications like necrosis, retraction, stenosis and prolapse. Many complications occurred in the same patient. Details are given in table-3.

Colostomy was closed in 36 of these patients

INDICATIONS OF COLOSTOMY (n=50)

Indications	Patient's Number
Penetrating Injuries	
Fire arm injuries	17 (34%)
Penetrating sharp injuries (Stab wounds)	6 (12%)
Non penetrating Injuries	
Road Traffic accident	7 (14%)
Iatrogenic colonic injury	2 (4%)
Rectal impalement of foreign body	2 (4%)
Intestinal Obstruction	
Sigmoid volvulus	6 (12%)
Anorectal malignancy	7 (14%)
Adhesions	1 (2%)
Inflammatory	1 (2%)
Recto-vesical fistual	1 (2%)

TABLE – 1

DISCUSSION

Colostomy is the commonest type of surgically treated intestinal stomas. Depend-

TYPES OF COLOSTOMY PERFORMED (n=50)

S. No.	Type of colostomy	No. of patients (%age)
1	Loop Colostomy	22 (44%)
2	Exteriorization of injured colon as loop colostomy	3 (6%)
3	End colostomy with mucous fistula	11 (22%)
4	End colostomy with Hartmann's Pouch	9 (18%)
5	End colostomy with AP resection	5 (10%)

TABLE – 2

LOCAL COMPLICATIONS OF COLOSTOMY (n=50)

S. No.	Type of Complication	No. of patients (%age)
1	Skin irritation around the stoma	7 (14%)
2	Prolapse	3 (6%)
3	Stenosis	2 (4%)
4	Necrosis	1 (2%)
5	Retraction	2 (4%)
6	Perastomal Hernia	2 (4%)
7	Stomal Bleeding	3 (6%)
8	Disruption of stitches	1 (2%)
9	Wound infection	3 (6%)

TABLE – 3

ing on the condition for which it is made, the colostomy may be temporary or permanent.

In the present study colostomy was performed in 50 patients for different reasons presenting either in emergency or OPD. A relatively younger age group happened to have more colostomies and further it was 4 times more common in males to have stoma.

Firearm injury was the commonest indication (17/50=34%) for colostomy. In 1987 Arif [4] also reported a higher ratio of FAI (32/50=64%) as a cause of colostomy. Firearm weapons are the traditions of NWFP and the Pathans never hesitate to use them during their disputes. Usually, multiple organs were involved along with trauma to the colon. Associated injuries were dealt with accordingly.

Debate over the primary closure of colonic injuries continues but Stone and Fabian (1979)[5] defined seven criteria, where the primary repair of colon was not feasible even if one of them is present.

- Pre-operative shock (blood pressure less than 80/60 mm Hg.)
- More than 1000 cc of intra peritoneal haemorrhage
- More than one intra-abdominal organ injured
- Significant faecal peritoneal contamination.
- Operation beginning more than 8 hours after the injury
- Colon wound so destructive as to require resection
- Major loss of abdominal wall substance or the need of mesh for repair

In our study most of the patients were brought late and were debilitated. Some were received in a state of shock and were found to be at an increased risk of failure of primary repair.

Of the total 8 females, 2 had extensive iatrogenic trauma to the sigmoid colon. One of them had Hartmann's procedure and other had resection, anastomosis and proximal transverse loop colostomy.

Women usually go to Dais for illegal abortions in our society and come with uterine and sigmoid colon perforation. Quaks also maltreat piles and fistulae-in-ano. One patient treated by a quak for Fistula-in-ano had extensive perineal wound involving the sphincters. These two patients with extensive perineal tear underwent loop sigmoid colostomy with satisfactory outcome.[6]

Rectal impalement of foreign body occurs commonly in males mostly due to fall on impaling objects. Rectum only is involved in 50% of the cases[7] and extensive rectal injuries with loss of rectal wall requires Hartmann's procedure after resection at the site of injury. In our study there were 2 cases with foreign body in the rectum, one had a "coca-cola" bottle" and the other with elongated "pumpkin". Both had injuries to rectum and anal margins. Sigmoid colostomies were performed after removal of foreign body in both the cases at laparotomy.

Anorectal malignancy was found in both the sexes of relatively older age group (7/50=14%) and required permanent stoma. Sigmoid volvulus was the other common indication (6/50=12%) for colostomy. The patients presented with signs and symptoms of intestinal obstruction in both the condi-

tions. Colostomies, usually Hartmann's type were made in patients with volvulus as the patients presented late and the rotated gut was found to be gangrenous and had to be resected.

Only one patient presented with post-op adhesions as a cause of intestinal obstruction. The gut had a gangrenous patch , was resected and end colostomy with mucous fistula was made. One patient had recto-vesical fistula secondary to tuberculosis (biopsy proven), loop transverse colostomy was performed followed by institution of anti-tuberculous drugs.

Twenty patients (40%) with colostomy developed 24 stoma related problems. Four patients were reoperated for necrosis, retraction, stenosis and prolapse. The table-4 compares the complications with a sister study.

In the present study the stenosis (4%) was not due to scarring but was due to short incision in the abdominal wall for loop sigmoid colostomy and tight closure of deep layers of abdominal wall around the stoma. A satisfactory standard is that the hole made for stoma should allow 2 fingers easily otherwise symptoms of low-grade partial obstruction may appear.

In the present study there was prolapse in 3 (6%) and peristomal hernia in 2 (4%) of the patients. These complications can be minimized by designing the spouts of correct length, limiting the abdominal wall aperture, forming a peritoneal tunnel and fixation of mesentery to abdominal wall. As most of these stomas were formed in emergency department by resident staff and not by consultants, these steps were omitted in the formation of temporary stomas. Stothert et al[8] (1982) report a morbidity of greater than 50% in emergency stoma formation. Demetriades[9] (1988) emphasized that experienced surgeons had less complications than junior surgeons.

Skin irritation around the stoma is the most common complication; the present

COMPARISON OF COMPLICATIONS IN THE PRESENT STUDY WITH A SISTER STUDY

Name of complication	Szczepkowski* et al (n = 150)	Present Study (n = 50)
Local stoma complications (no. of patients)	62 (41.3%)	20 (40%)
Stoma stricture/ stenosis	9 (6%)	2 (4%)
Prolapse	7 (4.6%)	3 (6%)
Peri-stomal Hernia	29 (19.3%)	2 (4%)
Skin irritation around stoma	24 (16%)	7 (14%)
Necrosis of stoma	—	1 (2%)

TABLE – 4

study (14%), Szczepkowski (16%), Leong et al[10] (29%). Stoma retraction and appliance problem contribute to this complication. Pouch hole should be 1/8th inch larger than the stoma to protect the skin adequately. Some of the cheap disposable pouches did not adhere well to the skin. Stoma hesive paste application followed immediately by fitting the appliance was one of the solution. A distant mucous fistula can be covered by dressing only.

The incidence of wound infection can be minimized by immediate application of a plastic stoma and by transparent occlusive dressing on the laparotomy wound that is porous but impermeable to faecal contamination. In the present study 3 patients (6%) suffered from wound infection. This is reported to be major post op complication of Hartmann's procedure (43%) in massive contamination and peritonitis by Totte et al, 1992[11] and they recommend to allow the wound to heal by secondary intention.

The patients are usually very anxious about the stoma. Most of the patients in present study were worried about odor, noise and fecal contamination. Depression, isolation and difficulties with social interactions are common especially in females. No patient presented with colostomy diarrhoea in the present study.

The closure of colostomy is associated with its own complications and is an elective procedure. The complication rate in the present study is 7.5%. While Milesky et al[12] reported it to be 16.1%. We either closed the colostomies in 2 layers (inner continuous layer of catgut and outer interrupted layer of silk 2/0) or by a single interrupted layer of silk 2/0. There was no significant difference between the results. This was also noted by Arif[4]. We closed the stoma wounds primarily with an infection rate of 6%.

Mileski[12] and Huber et al[13] observed an infection rate of 5% and 5.1% respectively on keeping the wound open for delayed closure. Thus delayed wound closure at colostomy closure merely prolongs the hospital stay.

One old patient died after the reversal of Hartmann's colostomy due to anastomotic leak leading to septicaemia and multiple organ failure. The distal segment was small in this case and single layered anastomosis could be accomplished with difficulty.

CONCLUSION

The commonest indication for colostomy in NWFP is firearm injury and is safe and effective method of treating colonic injuries. Careful surgical techniques both during construction and in the closure of colostomies improve overall management of the patients as well as reduce morbidity.

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