TEMPORARY STOMA REVERSAL; INDICATIONS & OUTCOME AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Temporary stoma formation is common procedure performed during laprotomy. **Objective:** The objective of this study was to determine the indications for temporary stoma formation and early outcome after reversal at surgical unit in a tertiary care Hospital. **Patients & Methods:** This hospital based prospective study was conducted at the surgical department of Sheikh Zayed Hospital, Rahim Yar Khan, including patients admitted during March 2008 to July 2010. This study included 80 patients in which stoma reversal was performed, age and sex as well as cause and type of stoma formation were recorded. Methods used for stoma reversal were according to type of stoma as per standard international protocols. Early post operative outcome was recorded. The time of stoma reversal was after 03 months. Evidence base medical practice testifies that three months is the time period that ensures resolution of dense abdominal adhesions. **Results:** Indications of stoma creation was mainly typhoid perforations 42 (52.5%), fire arm injuries 13 (16.25%) and Uterine Dilatation & Curettage 09 (11.25%). Majority of patients 64 (80%) had smooth recovery. There was superficial surgical site infection (SSI) in 05(6.25%), deep SSI in 03 (3.75%). Two patients suffered anastomotic dehiscence. One out of these two patients, temporary stoma was reconstructed while other patient bearing dense adhesions recovered on conservative management. There was minor wound disruption in 06(7.5%) patients. **Conclusion:** Indication and outcome of stoma formation is different as compared to western world. Endeavor should be made to improve diagnoses of preventable diseases and early referral of patients suffering form trauma and perforation to reach that commendable status.

Key Words: Stoma Reversal, Colostomy reversal, Ileostomy reversal

INTRODUCTION

Temporary stoma formation is common component of lapratomy being performed on patient with delayed presentation, having severe abdominal sepsis, profound shock and major multiple abdominal injuries particularly involving large intestine. Loop ileostomy and loop colostomy are the common procedures being carried out. A suspect habit is needed for the early diagnosis of this morbid and at time mortal disease as a significant number of women up to 13% who present to general surgeon with acute abdomen have gynecological problems[1], similarly the patient presenting to gynecologist may have surgical problems especially presenting after dilatation and curettage. 20% to 40% patients presented to tertiary care hospital after handling for criminal abortion needed either Ileostomy or colostomy.[2] It is the need of time to be aware that modern minimal invasive surgical techniques are not free from major complications.[3] Obstructing rectal cancer managed by an initial operation such as Hartmann's Procedure or resection and anastomosis and temporary covering colostomy has high rate of Morbidity and mortality i.e. 39%and 12% respectively.[4] Surgical site infections ranging from common superficial surgical site infection (SSI) to organ space infection due to anastomosis leak and abdominal abscess formation are encountered during post operative period. Incisional hernia can develop at the stoma site.[5] The objective of current study was to determine the indication for temporary stoma creation and early outcome after its reversal.

PATIENTS & METHOD

This prospective study was carried out on eighty patients in whom stoma reversal was carried out. These patients were admitted from March 2008 to July 2010, in the surgical department of Sheikh Zayed Hospital, Rahim Yar Khan. Surgical department of this hospital manages patients of all age groups. Thorough history and physical examination addressing the primary condition of the patient necessitating the creation of stoma were recorded. Previous operation notes were checked. Laboratory investigations including blood profile, urine profile, serum sugar, and serum urea and serum electrolyte and histopathology were performed. To check any obstruction, kink, adhesion or missed perforation in distal lumen of gut contrast study (LOOPOGRAM) were performed. All the patients underwent general anesthesia with endotracheal intubation and muscle relaxation. The stoma were mobilized and closed as their standard international

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protocols taking care of aseptic measure.
The stoma site wound was usually closed on the line of Incisional hernia repair. Skin defects were closed primarily but at time left open for delayed primary closure on the choice of operating surgeon. The patients were followed up in the post operative period. All the patients, irrespective of age, sex and root cause were included in this study. Age, sex, cause of stoma creation, method used for reversal and early post operative out come were recorded. All the stomas were reversed after three months. The evidence base medical practice testifies that after three months there is minimal chances of inter loop and peritoneal adhesions. These adhesions are the cause of stoma dehiscence.

RESULTS

A total of 80 patients were included in this study. The age group mainly affected was between second to fourth decades of life (Table: I). Only 05 patients were beyond 40 years of age and only 09 below 10 years of age. Male patients significantly predominate over female patients in the stoma formation (Table I.) Stoma was reversed in sixty four patients having ileostomy while other sixteen patients had colostomy.

Among the Ileostomy group the post typhoid perforation predominated. Firearm injury was common among the colostomy group. The main causes of dilatation and uterine curettage were the criminal septic abortions leading to uterine and intestinal perforation. The miscellaneous group included one case each of Volvulus of sigmoid colon, Idiopathic and Iatrogenic injury. (Table: I).

As shown in Table II, in the loop stomas with intact mesenteric border of intestine partial anastomosis, in form of enterostomy was performed, while in rest of cases end to end anastomosis was necessary. Out come was monitored. Smooth recovery was defined as the patient went uneventful post operative period without complication. The patients were discharged. Complication was labeled when the patient had to stay in the ward for medication or surgical intervention.

Table I: Demographic, clinical and pathological data for patients who had surgery for stoma reversal

Characteristics	Frequency	
Age	**No. of Patients**	**%age**
<10	09	11.25%
11-20	18	22.50%
21-30	21	26.25%
30-40	26	32.50%
>40	06	07.50%
Sex ratio (M: F)	55:25	7:3
Type of Stoma		
Loop ileostomy	61	76.25%
Loop colostomy	12	15%
Hartmann procedure	04	5%
End Ileostomy & Mucus Fistula	03	3.75%
Causes/Indications		
Typhoid perforation	42	52.50%
Firearm injury	13	16.25%
Uterine Dilatation &curettage	09	11.25%
Post operative dense adhesions	04	05%
PSARP*	03	3.75%
Tuberculosis	02	2.50%
Gangrene of Large gut	02	2.50%
Intussusceptions leading to gut gangrene and sever sepsis	02	2.50%
Miscellaneous group	03	3.75%

* Posterior Sagittal Ano Recto Plasty

Table II: Stoma type & outcome of patients

Type of Stoma	Procedure	No.	%age
Loop Colostomy	Reversal of Stoma	08	10%
	Entrostomy closure end to end anastomosis	04	05%
Hartmann procedure	Laparotomy, mobilization of stoma and closure	04	05%
Loop ileostomy	Reversal of Stoma	49	61.25%
	Entrostomy closure end to end anastomosis	12	15%
End Ileostomy & mucus fistula	Laparotomy, mobilization of stoma and closure	03	3.75%
Outcome			
a. Smooth recovery		64	80%
b. Complications			
Superficial SSI*		05	6.25%
Deep SSI		03	3.75%
Organ Space infection		02	2.5%
Minor Wound Disruption		06	7.5%

*Surgical site infections

The patients with fecal fistula / organ space infection were due to inadvertent missed injury to the gut leading to pouring the gut contents outside the body or in the peritonitis. One patient was managed by refashioning of ileostomy stoma and further three months rest, while the other was kept on conservative treatment as he had dense adhesions around the gut and difficult stoma mobilization during surgery. This patient recovered on conservative treatment.

DISCUSSION

In our study, patients were between the age of second and fourth decade, similar to the group in developed world, but with different underlying causation like Ulcerative colitis and Crohn's Disease.[1] Crohn's Disease is uncommon in Pakistan.[6] Another age group in western world suffering from colorectal cancer presents at sixty years of age but this group has not developed in our setup as even a single patient is not presented in this study. As there is availability of newer surgical techniques in United States and Canada, the over all incidence of stoma formation is decreasing. Endoluminal techniques have reduced the incidence of abdomino-perineal resections. Adjuvant surgical measures as planned re-look Laparotomy; continuous closed peritoneal lavage further reduces the bacterial load[7] and mortaliry[8]. The surgical procedures that eliminate permanent stoma, however has resulted in increasing use of temporary loop ileostomies, which are usually more difficult stoma to manage[9] while in our study typhoid perforation, Fire arm injuries and criminal abortions are predominating causes for the stoma formation. We have been using Nasogastric tube in all the patients while role of nasogastric tube was challenged[10] and now routine use of Nasogastric tube even after colorectal anastomosis can not be recommended.[11] In the study, of Ayub et al, anastomotic leak was 4.7% in single layer versus 8.7% in two layers anastomosis. In our study anastomotic leak or missed perforations during stoma mobilization were 2.5%. There was no mortality in this study. In the study, of Ayub et al wound infection recorded was 7.1% as intra abdominal abscesses, while in our study superficial and deep wound infection of 6.25% and 3.75% is a bit higher than that study.[12] Minor wound dehiscence was seen in 7.5%. All these patients recovered on conservative management. It reflects increase in care in our hospital hand in hand with all other major hospitals in Punjab as studied by Akram et al that tremendous progress has been made in techniques for caring hospital patients, so that they may not get infected during hospitalization.[13] Our study comprises of all the patients having stoma, but under controlled conditions primary repair of colonic injuries can be advantageous, when compared to colostomy.[14] In certain patients we have to modify skin closure technique in high risk patients[15] but simultaneous reconstruction of intestinal tract and abdominal wall remains associated with a high complications rate.[16] Resection of gut and colostomy causes much higher cost of treatment for both patient and health care system. It would be very beneficial if single stage resection and primary anastomosis was carried out successfully.[17]

CONCLUSION

The rationale / indications for temporary stoma formation is different from western world, whereas, outcome of stoma formation has been comparable to Pakistan. Proper referral, timely diagnosis and management have eliminated the complications of these diseases in western communities. Endeavor should be made to improve our primary and secondary care system to diagnose preventable disease like typhoid and early referral of trauma and perforation to tertiary system, to save the patients from morbidity and mortality.

REFERENCES

1. Sardar SA, Nausheen S, Zahid M et al. condition presenting to general surgeon as acute abdomen. Annals volume (15) No.3 July- Sept.; 2009: 146-8
2. Tabassum HM, Chaudhary MA, Haq MU. Surgical Complications of abortions at Periphery Annals vol.10 No. 4 Oct-Dec 2004.479-481
3. Tufail A, Naheed F. Complication of diagnositc laparoscopy for gynecological indication. PJS. vol. 25, no.3 July-Sep. 2009:164-166
4. Kenneth L, Meredith, Sara et al. The Multidisciplinary Manamenment Of Rectal Cancer. Surgical Clinics of North America. Feb.2009 Volume (4) No.1 177-215
5. Shah J, Subedi N, Maharjan S. Stoma Reversal, A Hospital Based Study of 32 cases. The Internet Journal of Surgery 2010 (V) 22, No. 1: 1528-8242.
6. Khan, R., Abbas, Z., Memon, S., Hamid, S., Shah, H. and Jafri, W. Clinical presentation of crohn's disease in pakistan. Journal of Gastroenterology and Hepatology, vol.16 Jan. 2001 21-26

7. Berger D, Buttenschoen K. Management of abdominal sepsis. Langenbeck Archives of Surgery, vol. 383 No 1 March 1998:35-43
8. Jeffery BA, Sebastian MW, Amin T et al. Multiple Laparotomies For Severe Intra-Abdominal Infection Wiley Inter Science, Anz JS. Jan. 2010 (v) 68 issue 2: 139-142
9. Ira J. Kodner, Manigot's Intestinal Stoma. Abdominal operation tenth edition Michael J Zimmer, Seymour J, Schwartz, Harold Ellis Appleton and Lange. 427-460, 1997.
10. Qureshi U, Hanif M, Zia N, et al Role o0f Nasogastric intubation after Small bowel anastomosis JCPSP. 2009 VOL. 19: 354-358.
11. James A, Catten Dillep, N.Lebo. The use of drains after gastrointestinal surgery. Recent advances in surgery. Irvin Taylor. Colin Johnson. 2009 published by RSM Press. 13-26
12. Ayub M, R. Sheikh. S Gangat et al. Single layer versus two layer intestinal anastomosis a prospective study Pak J of sur. vol.5, Issue 3, 2 41-143.
13. Akram A, Ibrar S Shah H et al Status of Hospital Infection Control Measures of Seven Major Tertiary Care Hospitals of Northern Punjab JCPSP. 2010 VOL. 2 (4) : 266-270
14. Zaheer S, Butt HA. Primary Repair Versus Colostomy An Experience At Mayo Hospital. Professional Med J. March 201. 73-77
15. Connolly, Patrick T, Teubner et al Outcome of Reconstructive Surgery for Intestinal Fistula in Open Abdomen Annals of Surgery. March 2008; col.247(3) 440-444
16. Murtaza B, Khan AN, Sharif AM, et al. Modified Midline Abdominal Wound Techniques in Complicated high Risk Laparotomies. JCPSP. 2010; vol. 20(1): 37-4.
17. Naseer A, Ahmed S, Naeem M et al. One Stage Emergency Resection and primary anastomosis for sigmoid volvulus JCPSP. 2010 Vol. 20(5); 307-9