

Indications of Colostomy in a Tertiary Care Hospital

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ABSTRACT

Aim: To study the frequency and types of indications of colostomy in tertiary care hospital.

Study Design: Prospective, cross-sectional study.

Methods: After taking written consent from the patients or their relatives, this prospective cross sectional study was carried out in the Department at Surgery, Fauji Foundation Hospital Rawalpindi from 1st December 2009 to 30th November 2011. A total of 104 consecutive patients who end up with colostomy due to any reason were included in the study.

Results: Out of 104 patients, it was noted that 52 patients had stoma due to malignancy of large bowel and 2 for melanoma rectum.

Conclusion: Till today, the commonest indication of colostomy is malignancy of large bowel. In order to decrease the percentage of colostomy and its associated morbidity and mortality, more effort should be made to diagnose this type of malignancy at an earlier stage.

Keywords: Ca rectum, melanoma rectum, stapler anastomosis, abdominoperineal resection.

INTRODUCTION

Colostomy is defined as an artificial opening made in the large bowel to divert faeces and flatus to the exterior¹ and is made in any part of the colon². Stoma surgery has long history stretching back into biblical times. Praxagoras performed first percutaneous colostomy in 4th century B.C³ followed by Littre in 1710 to decompress colon secondary to imperforate anus in a dead child⁴. In 1776 H. Pillore performed caecostomy for malignant rectal obstruction. In 1783, Littre successfully did colostomy in a 3 days old child⁵. In 1793 C. Duret of Brest, performed colostomy on a 3 days old child suffering from imperforate anus. Duret and Callisen of Copenhagen in 1880, made opening in large bowel by an incision in the back, close to the spine during postmortem.

J.Z Amussat of Paris, in 1837, collected all particulars of known colostomies since 1776 and concluded that 69% deaths were due to peritonitis. To avoid this fatal complication, he devised extra peritoneal lumbar colostomy called Amussat's operation. Caesar Hawkins of St. George, in 1852 stated that there was little difference in the results whether Amusatt or Littre's approach was used or not.

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In 1887, C.B. Ball of Dublin recommended abdominal colostomy with exploration of the abdomen in all cases. In 1894 Sutton⁶ underlined the advantages of a concomitant laparotomy. A few years later W. Ernest Miles recommended to explore the abdomen through a midline incision and to make the colostomy through a separate opening. This is the method generally used today.

Approximately 100,000 people in United Kingdom are living with a stoma at any one time⁷. The number of people with stoma has decreased over past 10 to 15 years with the advent of the stapling gun for the management of low anastomosis in the rectum⁸. Stomas inevitably cause problem that can lead to anxiety, distress and even depression for the patient⁹. Established stomas sometimes cause complications but they become evident at a later stage, as a result of weight gain or loss and effect of particular life style or occupation². Despite advances in surgical techniques, the problems of creating a stoma continue and cause complications in at least 18% of patients¹⁰. Most patients do not accept colostomy and consider equivalent to loss of limb or an eye. The presence of stoma is considered a burden by the patient especially if the colostomy is badly sited or constructed¹¹. J. C. Rulz et al reported that stoma influenced life style in 53% of patients having colostomy. Restriction of sexual activity in 45%, effected employment in 44% and altered life style in 8%. On average, it took six to twelve months to adapt to stoma by the patient¹².

The latest technique in stoma formation is laparoscopic approach. This allows careful selection of the colostomy site, easy mobilization of the colon

and little disruption to intestinal function thereby improving postoperative recovery. Laparoscopic colostomy is in most cases a simple and safe operation and can be used as the preferred technique of intestinal diversion¹³.

PATIENTS AND METHODS

After taking written consent from the patients or their relatives, this prospective, cross-sectional study was carried out in the Department at Surgery, Fauji Foundation Hospital Rawalpindi from 1st December 2009 to 30th November 2011. Ethical approval was taken from Ethical Committee, Fauji Foundation Hospital. A total of 104 consecutive patients who end up with stoma due to any reason were included in the study. Data was collected on a specified proforma and analyzed on SPSS 17. All the patients whose operations were performed in the Fauji Foundation Hospital Rawalpindi were included in the study. Only those patients who either refused to give consent for the study or under the age of 12 were excluded from the study.

RESULTS

A total of 104 patients were included in this study. Male to female ratio is shown in table 1. Average age was 43.85 years. Age ranges from 20 to 72 years. The youngest was female of 20 years and oldest one was male of 72 years of age. Types of colostomies are shown in table 2. In 34.6% of cases, procedure under discussion were carried out under emergency situation while in 65.4%, colostomy was done electively. Out of 34.6% of cases of emergency cases, 16(44.45%) had loop colostomy, 8(22.22%) had end colostomy and 12(33.33%) had Hartman’s procedure. If we compare this with elective procedure, 24(35.3%) had loop colostomy, 44(64.7%) had end colostomy while no Hartman’s procedure was done electively.

Table1 (n=104)

Males	Females	%age
28	76	1:2.7

Table 2 (n=104)

Type	n
Permanent end colostomy	52 (50%)
Hartman’s procedure	12 (11.54%)
Sigmoid loop colostomy	38 (36.54%)
Transverse loop colostomy	2 (1.92%)

Table 3: Indications of colostomy formation (n=104)

Indications	%age
Carcinoma rectum	52(50%)
Melanoma rectum	2(1.92%)
Distal anastomosis	6 (5.76%)
Fistula in ano	16(15.38%)
Fournier’s gangrene	2(1.92%)
Rectal injuries	2(1.92%)
Iatrogenic injuries	2(1.92%)
Pica eating	2(1.92%)
Large bowel obstruction	10(9.61%)
Rectovaginal fistula	4(3.84%)
Peritonitis	6 (5.76%)



Stoma prolapsed in 13 year old boy.

DISCUSSION

The female to male ratio of 2.7:1 is higher in our study as compared to others¹⁴. This is due to entitlement of all females and limited ex-servicemen themselves in Fauji Foundation Hospital. It was also noted that average age in our study was 43.85 years. When we compare the age factor with other studies, marked difference was noted as average age was 68 years in international literature. One reason is that some malignancies including colorectal carcinoma is occurring at a younger age in Pakistan as compare to western world¹⁵. 56% of our stomas were permanent and end colostomies. Surprisingly, some international studies shows very high rate of end colostomies. DA Harris et al conducted a study at Royal Glamorgan Hospital UK on a series of 257 patients and they had 82% end colostomies¹⁵.

Still Carcinoma Rectum is a major indication of colostomy everywhere in the world. We did colostomy in 52% of patients for the above mentioned reason. According to Snijders HS et al

70% of patients undergoing LAR for rectal cancer receives defunctioning stomas in current surgical practice¹⁶. Other studies show similar results¹⁵. 5.76% of our patients had colostomy to protect distal anastomosis. Covering stoma seems to be useful to prevent anastomotic leakage and urgent re-operations in patients receiving low anterior resection for rectal cancer. However, covering stoma does not seem to offer advantage in term of 30 days or long term mortality¹⁷.

Fournier's gangrene is a rare process which affects soft tissue in the genital and perirectal area. It can also progress to all different stages of sepsis, and abdominal compartment syndrome can be one of its complications. Two patients in septic shock due to Fournier gangrene were admitted to the Intensive Care Unit of Emergency Department. In our study, we also did covering colostomy for same number of patients in two years¹⁸.

Rectal injury is another very important indication of colostomy. We did colostomy in 1.92% of patients for this reason. Fecal diversion in these patients may lead to reduced mortality, although prospective selection criteria for diversion do not currently exist. Future research into risk factors for colostomy creation, timing of diversion in relation to damage-control laparotomy, and quality of life in veterans with stomas will produce useful insights and help guide therapy¹⁹.

In our study, 1.92% of patients had colostomy due to pica eating. A literature review found 43 previously reported cases of surgical complications caused by various forms of pica. Most occurred in women, blacks, aborigines, children, or the mentally retarded--all groups in whom pica occurs more frequently than the general population. Intestinal obstruction was the most common clinical presentation and the ileum most often the site of obstruction reported at surgery²⁰. 9.61% of our patients had stoma due to large bowel obstruction. Velibekova from Russia stated that huge number of rectal cancers can present with large bowel obstruction. In his study of 202 patients of rectal carcinoma presented with large bowel obstruction, rectal resection with colostomy was performed in only 45% of patients²¹.

We did 65.4% colostomies electively. Review of international literature shows similar results. Harris et al concluded in their study that more than double (7:3) colostomies were done electively¹⁵. Another interesting advancement in the history of stoma is formation of colostomy without opening per operatively. Indication is to minimize the risks related to leakage from an at-risk colorectal anastomosis. A group of surgeons in France conducted a study in which was the loop colostomy was eventually opened

on the sixth post-operative day in six cases because of anastomotic leakage diagnosed clinically and/or detected by water soluble contrast opacification in six cases and there was no need for urgent surgical intervention. In 28 cases, the anastomosis healed without complication and the exteriorized loop was returned to the abdominal cavity seven days after the initial surgery. This was a short, simple procedure with an average operating time of ten minutes. Average hospital stay after returning the unopened colostomy to the abdomen was two days. They concluded that unopened loop colostomy offers the advantages of protection of a colorectal anastomosis without proper morbidity or mortality, shorter hospitalization, and improved psychological comfort for the patient²².

It is interesting to note that colostomy for complicated diverticular disease stands 2nd in frequency after colorectal cancers in the western literature but in our study we did not encounter this problem in any patient²³. Regarding the role of improved psychological support, psychosomatic research shows that single and widowed males fared better as compared to married men and women in terms of Psychiatric symptoms appearing in response to Colostomy^{24, 25}.

Kilic et al; from Turkey, observed that fear of sexual impotency and dysfunction after the procedure was a significant contributor to the psychiatric response to the procedure²⁵. However, impact on sexual potency was much less than previously believed²⁷.

Observations were made by Bahar Mahjoubi et al; in Iranian Stoma patients²⁶ that if the pre operative preparation of the subject is well planned and effective, the severity and range of the adverse effects can be mitigated²⁸. Psychological intervention such as counseling can lead to improvement in Psychological status of the patients with rectal cancer and colostomy²⁹. Furthermore, as the colostomy grows old, the severity of the psychiatric symptoms decreases.

CONCLUSION

Till today, the commonest indication of colostomy is malignancy of large bowel. In order to decrease the percentage of colostomy and its associated morbidity and mortality, more effort should be made to diagnose this type of malignancy at an earlier stage.

REFERENCES

1. Makins M. Collins English Dictionary. Glasgow: Harper Collins publisher; 1995. P 981.

2. Julia Breeze. Special feature, stoma care, an update, *The Pharmaceutical Journal*, Vol. 265 No. 7125. Dec 2000:823-826
3. Christopher J.K, Norman S.W & Ronan O" Conell. Editors. *Bailey and loves Short Practice of Surgery*, 25th edition. London UK Chapman & Hall Medical. 2008:807
4. L.R Celetin, *A color atlas of the surgery and management of intestinal stomas*, Wolf Medical publications 2009: 8.
5. Litter. *Diverses Observations Anatomiques. II Histoire de l' Academy Royal des Science*. Paris: 1719,36-37.
6. Allan. *Rapport sur les observation etreflexions de Dumas, relative aux imperforation de l'anus*. *Recueilperiodique de la medicine de Paris*. 1797; 3:123.
7. Sutton BJ. *Cancer of the colon and its treatment*. *Clinical Journal* 2004; 4: 255.
8. McCahon S. *Faecal Stomas*. In: Porrett T, Daniels N, Editors. *Essential coloproctology for nurses*. London: Whurr; 2009. P. 165-87
9. Nichols RJ. *Recent advances in the treatment of rectal cancer*. *Br J Hosp Med* 1980; 24: 309-13
10. Black P. *Common problems following stoma surgery*. *Br J Nursing* 2004; 3:413-7
11. Devline H B 1990 *Colostomy, past and present*. *Ann R CollEngl* 72:175-176
12. J.C. Rui'z, E. Lopez, J. Alarez, M. A. Moya, M. V. Coto, M. C. Poza and A. I. Vega. *Stoma care in patients after excision of the rectum*. *Br. J. Surg.*, Vol. 79, Suppl. June 2008:33.
13. Hallfeldt K, Schmidbauer S, Trupka A. *Laparoscopic loop colostomy for advanced ovarian cancer, rectal cancer, and rectovaginal fistulas*. *Gynecol Oncol*. 2000 Mar;76(3):380-2.
14. Shaikh A.R, Laghari M.H. *complications of colostomy*. *Pakistan Journal of Surgery*, July-Dec. 2010, vol.14, no.3&4:60-65
15. DA Harris, D Egbeare, S Jones, H Benjamin, A Woodward, ME Foster. *Complications and mortality following stoma Formation*. *Ann R Coll Surg Engl*2005; 87: 427-431
16. Snijders HS, Van den Broek CB, Wouters MW, Meershoek-Klein Kranenbarg E, Wiggers T. *An increasing use of defunctioning stomas after low anterior resection for rectal cancer*. *Eur J Surg Oncol*. 2013 Jul;39(7):715-20
17. Montedori A, Cirocchi R, Farinella E, Sciannameo F, Abraha I. *Covering ileo- or colostomy in anterior resection for rectal carcinoma*. *Cochrane Database Syst Rev*. 2010 May 12;(5): CD006878.
18. Zagli G, Cianchi G, Degl'innocenti S, Parodo J, Bonetti L, Prosperi P, Peris A. *Treatment of Fournier's Gangrene with Combination of Vacuum-Assisted Closure Therapy, Hyperbaric Oxygen Therapy, and Protective Colostomy*. *Case Rep Anesthesiol*. 2011; 182-184
19. Glasgow SC, Steele SR, Duncan JE, Rasmussen TE. *Epidemiology of modern battlefield colorectal trauma: a review of 977 coalition casualties*. *J Trauma Acute Care Surg*. 2012 Dec;73
20. Anderson JE, Akmal M, Kittur DS. *Surgical complications of pica: report of a case of intestinal obstruction and a review of the literature*. *Am Surg*. 2011 Oct;57(10):663-7.
21. VelibekovaMCh, KerimovAKh. *The treatment of rectal cancer, complicated by the intestinal obstruction*. *Khirurgiia (Mosk)*.2012;(9):75-7.
22. Bedioui H, Daghfous A, Ayadi S, Chaker Y, Chebbi F, Ksantini R, Rebai W, Ftériche F, Ammous A, Jouini M, Kacem MJ, Bensafta Z. *Unopened colostomy in colorectal surgery: a renewal interest?* *J Chir (Paris)*. 2007 Nov-Dec;144(6):508-10.
23. Lambert ME, Knoxra, Schofield PF, Hancock BO, *Management of the septic complications of diverticular disease* *BJS* 2005, Page 576-579 10.1002/bjs
24. Wade BE. *Colostomy patients: psychological adjustment at 10 weeks and 1 year after surgery in districts which employed stoma-care nurses and districts which did not*. *J AdvNurs*. 1990 Nov; 15(11):1297-304
25. Kiliç E1, Taycan O, Belli AK, OzmenM. *The effect of permanent ostomy on body image, self esteem, marital adjustment, and sexual functioning*. *Turkish journal of psychiatry* 2007; 18:4: pg 302-10.
26. Mahjoubi B1, Mohammadsadeghi H, Mohammadipour M, Mirzaei R, Moini R *Evaluation of psychiatric illness in Iranian stoma patients*. *J Psychosom Res*. 2009 Mar; 66(3):249-53.
27. Barney M. Dlin, Perlman A, Ringold E. *Psychosexual Response to Ileostomy and Colostomy* *Am J Psychiatry* 1969;126:374-381.
28. Turns D. *Psychosocial issues: pelvic exenterative surgery*. *J Surg Oncol*. 2001 Mar; 76(3):224-36.
29. YU Zhuang, YANG Hai-qin. *Effect of psychological intervention on psychological status and quality of life in rectal cancer patients with colostomy*. *China Journal of Modern Medicine* 2007;18.