

A Retrospective Analysis of Determinants Affecting Intestinal Stomas

Talar Vartanoglu Aktokmakyan¹, Candas Ercetin², Hakan Yigitbas², Önder Önen², Yuksel Altinel², Fatih Celebi²

¹Department of General Surgery, Sarıkamis State Hospital, Kars, Turkey, ²Department of General Surgery, Bagcilar Training and Research Hospital, Istanbul, Turkey

ABSTRACT

Aim: Intestinal system ostomies are one of the life-saving surgical techniques that allow the person to continue their daily activities. Ostomies that are performed following the technique can cause morbidity and mortality of the patients. We aimed to present our clinical experience according to ostomy, which is a surgical anastomosis method, type, application reason, late, and early complications. **Material and Methods:** Clinical information and findings of the 160 patients with an ostomy, who were followed-up and treated between December 2014 and December 2015, were evaluated retrospectively in the stoma care unit of Bagcilar Training and Research Hospital, General Surgery Clinic. **Results:** Of the 160 patients, 67 were female (41.8%), and 93 were male (58.1%); the mean age was 56.3 years and the mean body mass index was 20 kg/m². **Conclusion:** We should consider ostomies as anastomosis of the intestinal system to the skin, and we should observe the surgical technique principles in the intestinal system anastomoses with the same care and attention here.

Key words: Anastomosis, Colostomies, İleostomies, Ostomies

INTRODUCTION

Colorectal cancer accounted for 10% of 14 million new cases globally in 2012 and currently is the 3rd most common cancer worldwide.^[1] Intestinal system ostomies are one of the life-saving surgical techniques that allow the person to continue their daily activities, travel, exercise, family, and business life. In spite of progressions in surgical techniques and products for stoma care, complications are still widespread; they range between 25% and 60%, influence patient quality of life, and rise the financial cost to the health system, as indicated in prospective research and audits.^[2-4] Ileostomy and colostomies can be applied temporarily or permanently due to benign and malignant diseases. Ileostomies are often preferred for diversion, and colostomies are often preferred in cancer surgery. Ostomies that are performed following the technique can cause morbidity and mortality of the patients. Therefore, we aimed to present our clinical experience according to ostomy, which

is a surgical anastomosis method, type, application reason, late, and early complications. Age, gender, body mass index (BMI), neoadjuvant chemoradiotherapy had no significant effect on the occurrence of stoma complications. On the other hand, stoma complications were more likely to come out in patients with malignant compared to benign disease significantly and after colostomy rather than ileostomy surgery.

MATERIALS AND METHODS

Clinical information and findings of the 160 patients with an ostomy, who were followed-up and treated between December 2014 and December 2015, were evaluated retrospectively in the stoma care unit of Bagcilar Training and Research Hospital, General Surgery Clinic. Patients undergoing both elective and emergency operations were included in the study and compared with gender, age, and BMI; the presence of malignant disease, comorbidities, use

Address for correspondence:

Dr. Talar Vartanoglu Aktokmakyan, Department of General Surgery, Sarikamis State Hospital, Istanbul, Turkey.
Phone: 05369530785.

© 2020 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

of neoadjuvant chemoradiotherapy, permanent or temporary stoma, stoma type, early and late complications, and stoma closure time was retrospectively analyzed.

RESULTS

Of the 160 patients, 67 were female (41.8%), and 93 were male (58.1%); the mean age was 56.3 years and the mean BMI was 20 kg/m². The mean BMI was <18.5 kg/m² in six patients, between 18.5 kg/m² and ≤29.9 kg/m² in 57 patients, and ≥30 kg/m² in 15 patients.

Colorectal carcinoma was the most common indications for stoma creation (57 patients, 35.6%). Hartmann procedure was the most frequently performed surgical intervention (42 patients, 26.2%), followed by low anterior resection with loop (diverting) ileostomy (30 patients, 22.5%) [Table 1].

Ostomy-related complications developed in 45 patients (28.1%). Wound infection was the most frequent complication (12 patients, 7.5%), followed by short intestine syndrome, which developed in six patients (3 patients, 7%).

Age, gender, BMI, and neoadjuvant chemoradiotherapy had no significant effect on the existence of stoma complications. On the other hand, stoma complications were more likely to develop in patients with malignant compared to benign disease, significantly and after colostomy rather than ileostomy surgery. The complication rate was also significantly higher in patients at emergency surgery when compared to elective surgery ($P = 0.001$) [Table 2].

Eight of 160 patients were reoperated. Five of the eight reoperated that patients had ostomy due to rectal tumors. The stomas of 33 patients were closed after control colonoscopy (mean closure time 8 months). The majority of the stoma was closed in the form of an end ostomy (22/33). The majority of 24 ex-patients were operated under emergency conditions with the acute abdomen (20/24).

Sixty-eight cases undergoing ileostomy, temporary/permanent rate 59/9, emergency/elective surgery rate 40/28, benign/malignant reason rate 30/38, a surgical technique in 28 cases loop, end in 26 cases, double barrel ileostomy in 14 cases, morbidity early/late period 7/4, ileostomy closure in 16 cases (median closure time 12 months [1–24]), and mortality in cases with an ileostomy which was detected in six cases (five benign and one malignant). Ninety-three cases undergoing colostomy, temporary/permanent ratio 58/35, emergency/elective surgery rate 106/55, benign/malignant reason rate 72/89, a surgical technique in 96 cases end, loop colostomy in 51 cases, morbidity early/late period 22/3, colostomy closure in 13 cases (median closure time 6 months [1–15]), and mortality in colostomy cases in six cases (two benign and four malignant).

DISCUSSION

In a prospective multicenter study, including 3970 stomas in the UK, a potent association was noticed between female gender and higher rates of stoma complications.^[5] In the same study, the considerable variation of complications from the center-to-center demonstrates surgical technique as being the major point in stoma formation and following quality of life for the patient. The actual study indicated a high percentage (28.4%) of a diversity of stoma problems, with important risk factors identifiable for complications. In most prospective studies, obesity is underlined as a risk factor as having an influence on the development of stoma complications.^[6] In this study, the stoma complication rate also was higher in obese patients (30, 8%). However, in comparison with non-obese patients (BMI <30), no significant difference was found.

In a retrospective cohort study, Nastro *et al.* remarked that the complication rate in patients with the malignant disease was higher than in patients with benign disease significantly.^[7] In our study, the results were very similar. Pokorny *et al.* and Rullier *et al.*, in their studies, reported that the stoma complication rate is lower subsequent ileostomy than subsequent colostomy procedure.^[8,9] Similarly, the rate of stoma complication was significantly higher among the patients with a colostomy than the patients with an ileostomy in this study.

Table 1: Characteristics of stoma formation

160 patients	(n)
Ileostomy/colostomy	66/94
Temporary/permanent	116/44
Emergent/elective	106/54
Benign/malign	72/88
Complication*	45
Reoperation	8
Neoadjuvant chemoradiotherapy	30
Stoma closure	33
Mortality	24

Table 2: Complications*

Total of 45 patients	(n)
Infection	12
Short intestine	6
Hernia	5
Hemorrhage	4
Abscess	2
Injury	2
Prolapsus/Retraction	6
Others (evisceration, compartment syndrome)	8

Moreover, the outcomes of the present study indicate comorbidity and neoadjuvant chemoradiotherapy, type of surgical procedure had no significant effect on the development of stoma complications.

The present study has several limitations. The study was retrospective and conducted at a single institute. Furthermore, the sample size was small. Prospective controlled studies with larger patient populations are required to examine the efficacy and safety of loop ileostomy and loop transverse colostomy.

CONCLUSION

We should consider ostomies as anastomosis of the intestinal system to the skin, and we should observe the surgical technique principles in the intestinal system anastomoses with the same care and attention here. Ostomy applied individuals, we think that follow-up and treatment should be carried out in ostomy care centers that specialize in this field in terms of monitoring their mental and physical health and improving the quality of life.

REFERENCES

1. Tamas K, Walenkamp AM, de Vries EG, van Vugt MA, Beets-Tan RG, van Etten B, *et al.* Rectal and colon cancer: Not just a different anatomic site. *Cancer Treat Rev* 2015;41:671-9.
2. Saghir JH, McKenzie FD, Leckie DM, McCourtney JS, Finlay IG, McKee RF, *et al.* Factors that predict complications

- after the construction of a stoma: A retrospective study. *Eur J Surg* 2001;167:531-4.
3. Parmar KL, Zammit M, Smith A, Kenyon D, Lees NP. A prospective audit of early stoma complications in colorectal cancer treatment throughout the greater Manchester and Cheshire colorectal cancer network. *Colorectal Dis* 2011;13:935-8.
4. Pittman J, Rawl SM, Schmidt CM, Grant M, Ko CY, Wendel C, *et al.* Demographic and clinical factors related to ostomy complications and quality of life in veterans with an ostomy. *J Wound Ostomy Continence Nurs* 2008;35:493-503.
5. Cottam J, Richards K, Hasted A, Blackman A. Results of a nationwide prospective audit of stoma complications within 3 weeks of surgery. *Colorectal Dis* 2007;9:834-8.
6. Arumugam PJ, Bevan L, Macdonald L, Watkins AJ, Morgan AR, Beynon J, *et al.* A prospective audit of stomas-analysis of risk factors and complications and their management. *Colorectal Dis* 2003;5:49-52.
7. Nastro P, Knowles CH, McGrath A, Heyman B, Porrett TR, Lunniss PJ. Complications of intestinal stomas. *Br J Surg* 2010;97:1885-9.
8. Pokorny H, Herkner H, Jakesz R, Herbst F. Predictors for complications after loop stoma closure in patients with rectal cancer. *World J Surg* 2006;30:1488-93.
9. Rullier E, Le Toux N, Laurent C, Garrelon JL, Parneix M, Saric J. Loop ileostomy versus loop colostomy for defunctioning low anastomoses during rectal cancer surgery. *World J Surg* 2001;25:274-7.

How to cite this article: Aktokmakyan TV. A Retrospective Analysis of Determinants Affecting Intestinal Stomas. *Clin J Surg* 2020;3(1):1-3.