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Original Research Paper

General Surgery

A STUDY OF MORBIDITY IN TEMPORARY ILEOSTOMY CASES OF ACUTE ABDOMEN IN RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI, JHARKHAND

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ABSTRACT A stoma may be ileostomy or colostomy, is an alternative outlet to the gastrointestinal tract. The purpose of this study was to identify different types of etiologies leading to temporary ileostomy, its post-operative complications and morbidity associated to it. The present study is a cross-sectional study done in 109 patients carried out in the Department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand from July 2019 till October 2020. The study population included those patients who presented with non-traumatic acute abdominal pain with or without other associated symptoms and requiring emergency admission and prompt treatment. The most common indication for ileostomy in the present study was intestinal perforation due to typhoid (30.3%). Most common type of ileostomy fashioned was loop ileostomy (55.1% cases) followed by resection and anastomosis of bowel with divergent loop ileostomy (35.8% cases). Most common complication seen in patients with ileostomy was skin excoriation (40.9%) followed by wound infection (10.2%). Other complications noted were stomal necrosis (1.8%), parastomal hernia (1%). 89.9% of the cases had no mortality and morbidity. Only 1.8% of the cases suffered mortality due to primary disease. 64% cases reported loss of physical strength and 60% of the cases reported easy fatigue. These temporary ileostomies affect physical, emotional, social, mental, and general health and overall the quality of life of these patients. Early diagnosis, proper preoperative management and treatment with close post-operative monitoring definitely reduce the morbidity of such patients. Ileostomy, intestinal perforation, acute abdomen, skin excoriation, parastomal henia, quality of life.

KEYWORDS :

INTRODUCTION

A stoma may be ileostomy or colostomy, is an alternative outlet to the gastrointestinal tract after excision of all distal bowel or when restoration of continuity after a resection is contraindicated. Stomas are also used as a temporary or permanent diversion of the fecal stream from distal pathology or a healing anastomosis. A temporary stoma is commonly a loop stoma that can be closed without a major laparotomy. An end stoma is preferable when permanence is anticipated. An end stoma has a single opening into the proximal bowel and the epithelial continuity is between the skin and the whole circumference of the bowel mucosa[1].

A loop ileostomy is often used for defunctioning a low rectal anastomosis or an ileal pouch. A knuckle of ileum is exteriorized through a skin trephine in right iliac fossa. An incision is made in the distal part of knuckle and this is then pulled over the top of the more proximal part to create a spout on the proximal side of the loop with a flush distal side still in continuity [2].

Ileostomy, a frequently performed surgical procedure, is an external communication constructed between the distal part of the small intestine and the abdominal wall. The rationale for a temporary ileostomy is to provide defunctioning in cases of potentially dangerous anastomotic complications or perforation peritonitis, with an obvious risk for mortality[3-6].

Complications related to stoma may occur early or late, intermittently or progressively, local or systemic and may be acute or chronic in nature. Temporary ileostomy is found to be superior to other surgical procedure as far as morbidity and mortality are concerned especially in patients with severe illness. The creation of ileostomy reduced morbidity and mortality dramatically[7].

Ostomy is a surgery performed for management of bowel dysfunction due to various causes. Therapeutic procedures treat the disease but affect the Quality of life (QOL) of patients. WHO defines QOL as an individual's perspective of his/her health status with respect to a few aspects-physical, psychological, economic, social and environmental[8].

This surgery causes change in body image and influences the physical, mental, emotional, and social life of the stoma patients significantly. A good QOL is essential to achieve a holistic approach in treating our patients.

AIMS AND OBJECTIVES

1. To study incidence of different types of etiologies leading to temporary ileostomy.
2. To study socio-demographic profile of the patient who underwent temporary ileostomy.
3. To study nature and rates of post-operative complications, either early or late, after temporary ileostomy done in cases of acute abdomen.
4. To study morbidity associated with temporary ileostomy done in cases of acute abdomen.

MATERIALS AND METHODS

Study design: - Cross-sectional Study on 109 patients was done with prior approval from Institutional Ethics Committee, Rajendra Institute of Medical Sciences, Ranchi. Selected questionnaire was asked regarding quality of life to each patient who underwent stomas. Predesigned proforma "Quality of Life Questionnaire for a Patient with an Ostomy (QOL-O)" [9] after scheduled interview with patients.

Place of study: - Department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand

Duration of study: - From July 2019 to October 2020.

Study population:- All patients presenting with non-traumatic acute abdomen with or without other associated symptoms requiring emergency admission and prompt treatment. An informed written consent was taken from each patient.

Inclusion criteria:

1. All patients presenting with non-traumatic acute abdomen with or without other associated symptoms requiring emergency admission and prompt treatment.
2. Patients who give their consent to be a part of study.
3. Multiple perforations involving a particular segment of the bowel.
4. Gangrenous change in the segment involved.
5. Severe adhesions around the perforations and obstruction.
6. Old perforations with presence of peritoneal contamination.

Exclusion criteria:

1. All patients unfit for general anesthesia.
2. Patients of intestinal perforations and intestinal obstruction not requiring construction of temporary ileostomy.
3. Post-operative patients who are lost in the follow up before closure of ileostomy.
4. Patients of age <18 years and >60 years were not included in the group.

RESULTS

Out of 109 cases, 79 cases were males and 30 cases were females. The most common age group who underwent ileostomy was between 40-49 years (38.5%) within an age-range between 18 to 59 years.

13.8% cases were addicted to alcohol and 23.9% cases were addicted to smoking. 11% cases were addicted to both alcohol and smoking and 52.3% cases had no such addiction.

In this study it was found that males were more addicted to alcohol and smoking as compared to females. 14 males were addicted to alcohol and only 1 female had addiction to alcohol. 23 males were addicted to smoking and 2 females were addicted to the same. 10 males were addicted to both alcohol and smoking and only 2 cases of females were addicted to both.

95.4% of the cases underwent ileostomy construction as an emergency procedure whereas only 4.6% of them underwent elective procedure.

Out of 109 cases, 49.5% cases had to stay in the hospital for 11-15 days, 27.5% cases had to stay for 16-20 days, and 11.9% of the cases had to stay for 21-25 days. 4.5% of the cases had to stay for more than 25 days. Only 1.9% cases were such who had to stay only for less than 10 days.

Most common presenting symptom at the time of admission was abdominal pain (26.6%), followed by abdominal distension (21.1%) and fever (22.9%). Other symptoms reported were altered bowel habits (11.9%), bleeding per rectum (9.2%) and constipation (8.3%).

Table 1: Indications for ileostomy

Indications	Frequency	Percent
Intestinal perforation due to typhoid	33	30.3%
Sigmoid volvulous	17	15.6%
Obstructed inguinal hernia	15	13.8%
Presence of inter-bowel band adhesions due to previous history of surgery	10	9.2%
Acute intestinal obstruction with gangrenous changes	10	9.2%
Colo-rectal carcinoma	10	9.2%
Tuberculosis of intestine	9	8.3%
Fecal fistula due to RA leak	5	4.6%
Total	109	100%

Table 2: Types of ileostomy fashioned

Type of ileostomy	Frequency	Percent
Loop ileostomy	60	55.1%
Resection and anastomosis of bowel with divergent loop ileostomy	39	35.8%
Primary closure with divergent loop ileostomy	8	7.3%
End ileostomy	2	1.8%
Total	109	100.0%

Table-3: Types of stoma fashioned according to the indications

Indications	Loop ileostomy	End ileostomy	Primary closure with divergent loop ileostomy	Resection and anastomosis of bowel with divergent loop
Intestinal perforation due to typhoid	25	0	8	0
Obstructed inguinal hernia	10	0	0	5
Tuberculosis of intestine	9	0	0	0
Presence of inter-bowel band adhesions due to previous history of surgery	7	0	0	3
Fecal fistula due to RA leak	5	0	0	0
Acute intestinal obstruction with gangrenous changes	4	0	0	6
Sigmoid volvulous	0	0	0	17
Colo-rectal carcinoma	0	2	0	8
Total	60	2	8	39

Table 4: Local complications due to ileostomy

Stomal complication	Frequency	Percentage
Skin excoriation	50	45.9%
Wound infection	11	10.1%%
Stomal retraction	9	8.3%
Mucocutaneous disruption	8	7.3%
Stomal prolapse	8	7.3%
Stomal diarrhea	7	6.4%
High output stoma	7	6.4%
Stomal bleeding	2	1.8%
Stomal necrosis	2	1.8%
Stomal stenosis	2	1.8%
Stomal trauma	2	1.8%
Parastromal hernia	1	1.0%
Total	109	100.0%

60.6% of the cases had to keep stoma for 1-2 months. 21.1% cases had to keep stoma for 3-4 months due to lack of follow-up. 5.5% of the cases were reported who had to keep stoma for more than 5 months.

89.9% of the cases had no mortality and morbidity. Only 1.8% of the cases suffered mortality due to primary disease. Rests 8.3% of the cases were lost to follow-up

Table 5: Comparison between gender and factors affecting quality of life

Factors		Male	Female
Abdominal pain	Yes	2	2
	No	69	30
Clothing	No change	60	25
	Limits and changes clothing	11	7
Difficult to hide pouch	Yes	17	20
	No	54	12

Table 6: Quality of life due to ileostomy

Parameters used	Frequency (in percentage)
Loss of physical strength	64%
Skin condition	57%
Fatigue	60%
Sleep disturbances	34%
Overall physical well-being	56%
Difficult in adjustment with stoma	50%
Satisfaction in life	60%
Embarrassment due to stoma	35%
Difficulty in caring stoma	45%
Interference in social activities	25%

DISCUSSION

Out of 109 cases, 79 cases were males and 30 cases were females. The most common age group who underwent ileostomy was between 40-49 years (38.5%). This study was similar to the study done by Krishnaswamy J et al[10] and Roshini AP et al[11].

Out of 109 cases, 13.8% cases were addicted to alcohol and 23.9% cases were addicted to smoking. 11% cases were addicted to both alcohol and smoking and 52.3% cases had no such addiction. Males were more addicted to alcohol and smoking as compared to females. This study was similar to the study conducted by Markapuram KK et al[12].

95.4% of the cases underwent ileostomy construction as an emergency procedure whereas only 4.6% of them underwent elective procedure. This was similar to the study conducted by Ahmad Z et al[13].

Out of 109 cases, 49.5% cases had to stay in the hospital for 11-15 days, 27.5% cases had to stay for 16-20 days, and 11.9% of the cases had to stay for 21-25 days. 4.5% of the cases had to stay for more than 25 days. Only 1.9% cases were such who had to stay only for less than 10 days. Because of stoma formation and associated morbidity and complications there is prolonged hospital staying.

Most common presenting symptom at the time of admission was abdominal pain (26.6%), followed by abdominal distension (21.1%) and fever (22.9%). Other symptoms reported were altered bowel habits (11.9%), bleeding per rectum (9.2%) and constipation (8.3%). This was similar to the study conducted by Tripathi A et al[14] who reported abdominal pain in 100% of cases.

The most common indication for ileostomy in the present study was intestinal perforation due to typhoid (30.3%). This data is similar to that in the study conducted by Akram Rajput et al[15] in which enteric perforation was the most common indication of stoma formation (60%). A similar study conducted by Veena A et al[16] showed typhoid perforation as the most common indication for stoma construction. Similarly, a study in Aziz et al[17] demonstrated typhoid perforation (66%) and tuberculosis as the most common cause of stoma formation. This was followed by sigmoid volvulous and obstructed inguinal hernia which accounted for 15.6% and 13.8% respectively. 9.2% of the cases which were indicated for ileostomy were gangrenous changes of bowel, inter-bowel adhesions due to previous history of surgery, colo-rectal carcinoma. Tuberculosis of intestine (8.3%) was indicated for ileostomy. The least common indication was fecal-fistula due to RA leak (4.6%).

Most common type of ileostomy fashioned was loop ileostomy (55.1% cases) followed by resection and anastomosis of bowel with divergent loop ileostomy (35.8% cases) and primary closure with divergent loop ileostomy (7.3% cases). The least common performed type of ileostomy in our setup was end ileostomy (1.8% cases) only. Similarly, in a study by Shah JN et al[18] loop ileostomy was the most common stoma formed (70%). In a study conducted by Ahmad Z et al[13] the common type of stoma fashioned was loop ileostomy (64%).

Out of 33 cases of intestinal perforation due to typhoid reported in the present study, 25 cases underwent loop ileostomy construction and 5 cases underwent primary closure with divergent loop ileostomy. Similarly, in a study conducted by Kappikeri VS et al[19] cases underwent primary closure of perforation with divergent loop ileostomy. Resection and anastomosis of bowel with divergent loop ileostomy was performed in sigmoid volvulous (17 cases), colo-rectal carcinoma (8 cases), acute intestinal obstruction (6 cases), obstructed inguinal hernia leading to gangrenous changes of bowel (5 cases). Only 2 cases of colo-rectal carcinoma had to go for end ileostomy.

Most common complication seen in patients with ileostomy was skin excoriation (40.9%) followed by wound infection (10.2%) and stomal retraction (8.3%). Mucocutaneos disruption around stoma and stomal prolapse were found in 7.3% cases. Other complications noted were stomal diarrhea (6.4%), stomal trauma (1.8%), high output stoma (6.4%), stomal necrosis (1.8%), parastomal hernia (1%). Similarly, in a study conducted by Pal N et al[20] 43.78% of cases developed skin excoriation following loop ileostomy. In a study conducted by Sher-uz-Zaman M et al[21] skin excoriation was the most common complication due to ileostomy.

In the present study, 9.2% of the cases had to stay with stoma for less than 1 month. 60.6% of the cases had to keep stoma for 1-2 months. 21.1% cases had to keep stoma for 3-4 months due to lack of follow-up. 5.5% of the cases were reported who had to keep stoma for more than 5 months.

89.9% of the cases had no mortality and had a healthy life post-discharge. In the present study, only 1.8% of the cases suffered mortality due to primary disease which were comparatively less than the study conducted by Pal N et al[20] and Jhobta RS et al[22]. A mortality rate of 9% patients due to primary disease was present in a study conducted by Ahmad Z et al[13].

The patients were kept for follow-up. Out 103 cases, abdominal pain was reported in 4 cases only out of which 2 cases were males and females. Rest 99 cases had no such complaint. 18 cases reported that they had limitations in changing clothes while 85 cases had no such difficulty. Females had more difficulty in hiding stoma pouch than males. This study was similar to the study conducted by Roshini AP et al[11].

Patients with ileostomy were followed-up and were asked about the quality of life they are living with stoma. 64% cases reported loss of physical strength and 60% of the cases reported easy fatigue. 57 % of the cases were suffering from skin condition around stoma and 45% cases had difficulty in stoma care for which proper counseling and idea of stoma care was given. 25% of cases reported interference in social activities and 50% of the cases had difficulty in adjusting with stoma.

CONCLUSION

1. The most common indication for ileostomy in the present study was intestinal perforation due to typhoid.
2. Ileostomy construction was done most commonly as an emergency procedure.
3. Most common type of ileostomy fashioned was loop ileostomy. The few cases underwent resection and anastomosis of bowel with divergent loop ileostomy.
4. Most common complication seen in patients with ileostomy was skin excoriation followed by wound infection. Other complications noted were stomal necrosis, parastomal hernia.
5. 89.9% cases had no mortality and morbidity and only 1.8% of the cases suffered mortality due to primary disease.
6. To our knowledge, the present study is unprecedented at our institute which has addressed the QoL issues in ileostomy patients.
7. Early referral to the tertiary hospital, early diagnosis, proper preoperative management like intravenous fluids, antibiotics, etc., early detection and prevention of hypotension, reduction of time duration for emergency laparotomy, close post-operative monitoring definitely reduce the morbidity of such patients.

REFERENCES

1. Farquharson's textbook of operative general surgery, 10th edition, Chapter-22, Classic operations on small and large bowel, page- 384.
2. Bailey & Love's Short Practice of Surgery, 27th edition, Chapter- 69, The small intestine, page- 1254.
3. Fontes B, Utiyama EM, Birolini D. The efficacy of loop colostomy for complete fecal diversion. Dis Colon Rectum 1988; 31:298-302.
4. Wexner SD, Taranow DA, Johanson OB, et al. Loop ileostomy is a safe option for fecal diversion. Dis Colon Rectum 1993; 36:349-354.
5. Khoo RE, Cohen MM, Chapman GM, et al. Loop ileostomy for temporary fecal diversion. Am J Surg 1994; 167:519-522.
6. Winslet MC, Drolc Z, Allan A, et al. Assessment of the defunctioning efficiency of the loop ileostomy. Dis Colon Rectum 1991; 34:699-703.
7. Chaudhary P, Ishaq Nabi GR, Tiwari AK, Kumar S, Kapur A, Arora MP. Prospective analysis of indications and early complications of emergency temporary loop ileostomies for perforation peritonitis. Annuals of gastroenterology: quarterly publication of the Hellenic Society of Gastroenterology. 2015 Jan; 28(1):135.
8. Salomé GM, de Almeida SA, Silveira MM. Quality of life and self-esteem of patients with intestinal stoma. J coloproctol. (Rio J). 2014;34(4):231-9.
9. Grant, M., Ferrell, B. R., Dean, G., Uman, G., Chu,D., & Krouse, R. . (2012). Quality of Life Questionnaire for a Patient with an Ostomy (QOL-O). Measurement Instrument Database for the Social Science. Retrieved from www.midss.ie.
10. Krishnaswamy J, Kumar S, Mukesh K, Rahman K. A clinical study of intestinal stomas in emergency laparotomy: its complications. Int Surg J 2018; 5:273-6.
11. Roshini AP, Sunny A, Rozario AP. Quality of life assessment in stoma patients in a tertiary care hospital in South India: a cross- sectional study. Int Surg J 2017; 4:2037-41.
12. Markapuram KK, Rachamalla RR, Satish S, Kandati J. Typhoid ileal perforation: a two-year study at a tertiary care hospital of South India. Int Surg J 2018; 5:2159-64.
13. Ahmad Z, Sharma A, Saxena P, Choudhary A, Ahmed M. A clinical study of intestinal stomas: its indications and complications. Int J Res Med Sci 2013;1:536-40.
14. Tripathi A, Sethi A, Sethi D. The benefits of protective defunctioning ileostomy in ileal perforation surgery. Int Surg J 2019; 6:2565-70.
15. Akram Rajput, Abdul Samad, Tariq Wahab Khanjada. Rawal Med J 2007; 32:159-162.
16. Veena A, Hariprasad TR, Gopal S. Study of intestinal stoma: our experience at Study of intestinal stoma: our experience at Rajarajeswari Medical College and Hospital. Int Surg J 2019; 6:3622-5.
17. Aziz A, Jawant ISM, Alam S, Saleem M. Indications and complications of loop ileostomy. J Surg Pak (Int). 2009;3.
18. Jay N Shah, N. Subedi, S. Maharjan. Stoma Reversal, a hospital based study of 32 cases. Internet journal of surgery 2009;22(1).
19. Kappikeri VS et al., Sch. J. App. Med. Sci., April 2016; 4(4B):1199-1207.
20. Pal N, Poonam, Jangra A, Mishra V. Analysis of complications and management of abdominal stoma. Int Surg J 2019;6:2828-31.
21. Sher-uz-Zaman M, Hameed F, Atiq-ur-Rehman S, Khan Y. Loop ileostomy; complications in cases of enteric perforation. Professional Med J Apr-Jun 2011; 18(2):222-227.
22. Jhobta RS, Attri AK, Kaushik R, Sharma R, Jhobta A. Spectrum of perforation peritonitis in India – Review of 504 consecutive cases. World J Emerg Surg 2006; 1:26.