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FREQUENCY OF COMPLICATIONS IN PATIENTS WITH TEMPORARY ILEOSTOMY

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ABSTRACT

Objectives: To determine the frequency of complications related to the construction of temporary ileostomy till reversal and to determine the frequency of immediate postoperative complication related to ileostomy closure.

Material and Methods: A non-interventional, descriptive study was carried out from 1st of August 2006 to 31st of July 2007, in Surgical Department of Khyber Teaching Hospital, Peshawar.

Results: The study involved 46 patients of mean age 37 years (range 14-80 years). Seventeen (37%) patients developed 20 complications related to the construction of ileostomy. Skin excoriation was the most frequent complication affecting 12 (26%) patients. Ileostomy retraction, prolapse and dehydration were seen in 2 (4.3%) patients each. All were treated conservatively except one with ileostomy prolapse and necrosis, in whom refashioning of ileostomy was done. At closure (n=35), two patients developed anastomotic leak. Two patients developed wound infection.

Conclusion: Temporary ileostomy is usually associated with minor complications at an acceptable rate.

Key words: Ileostomy, stoma, complications.

INTRODUCTION

An ileostomy is the surgical construction of an opening into the ileum, with a stoma on the abdominal wall. Intestinal waste passes out of the ileostomy and is collected in an external pouching system stuck to the skin. Ileostomy may be temporary or permanent. Temporary ileostomy is a well established procedure in gastrointestinal surgery with wide ranging indications. Inflammatory bowel disease and ultralow anterior resection for cancer are the main indications for temporary ileostomy in the developed world.[1,2] In loop configuration it is considered to be an alternative to transverse colostomy to defunction low anastomoses during rectal cancer surgery, while in few western studies it is regarded as a safer option for fecal diversion.[3,4] In Pakistan and several other developing countries, intestinal complications of typhoid fever and abdominal tuberculosis along with penetrating abdominal injuries constitute the main indications for temporary ileostomy.[5,6,7,8]

Closure of temporary ileostomy is usually performed 2 to 3 months after the primary operation.[2] During this period, several complications may occur related to the ileostomy that may cause significant morbidity. These complications include dehydration, peristomal skin irritation, retraction of stoma, prolapse of stoma, necrosis of stoma, stomal stenosis, parastomal infection and parastomal hernia.[2,9,10,11] Although most of these complications are treated conservatively, there may be need for readmission and revision of stoma in some of the cases.

Closure of ileostomy is not free from complications either, which can be life threatening at times. These include anastomotic leak, intestinal obstruction, intraabdominal abscess, wound infection and incisional hernia.[1,2,9]

There are very few studies in Pakistan about the complications related to ileostomies or intestinal stomas in general.[5,6] Akhtar S et al and Safirullah et al consider ileostomy a safe procedure with an acceptable complication rate.[5,6] Apart from these, there are few studies in Pakistan and India that discuss the complications of temporary ileostomy created in particular cases of typhoid ileal perforation.[12,13] Memon SA and Beniwal US et al consider simple repair of typhoid perforation in two layers as the preferred treatment[12,13] with temporary ileostomy reserved for selective patients with multiple perforations, matted bowel loops and an unhealthy gut due to inflammation and edema.[13] Our study looked into the complications of temporary ileostomy not only after its construction but also following closure.

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MATERIAL AND METHODS

This study was carried out in the Surgical Department of Khyber Teaching Hospital, Peshawar from 1st of August 2006 to 31st of July 2007. The sampling technique was nonprobability convenience sampling. All the patients who had undergone ileostomy for temporary purposes were included. Patients below 12 years of age, patients with intestinal fistulae and those with permanent ileostomies were excluded from the study.

Demographics, indication for temporary ileostomy and details of operation were noted down. The ileostomy was daily examined during hospital stay for any complications. Complications associated with ileostomy were appreciated clinically. On discharge from the hospital, patients were told that their ileostomy will be closed 2 to 3 months after primary surgery and were instructed to attend the OPD for follow up at 2, 6 and 10 weeks or whenever there was a problem. A note of complications related to the ileostomy was made. Treatments given to deal with the complications were also recorded. Ileostomy closure was undertaken after it was made certain that there was no stricture or perforation or any other abnormality in the bowel distal to ileostomy. This was done with the help of contrast radiological studies. Full preparation of proximal as well as distal bowel was a prerequisite to closure. This preparation included use of oral mannitol and enemas. Any complications due to the reversal of ileostomy during hospital stay were noted. Date of readmission for closure, date of operation, time of presentation of complication due to reversal of ileostomy, treatment given for the complication and date of discharge were all recorded. After completion of the study, the data was analyzed using SPSS version 10.0.

RESULTS

The study involved 46 patients. All the patients underwent an emergency operation. The age range of these patients was 14-80 years with the mean age of 37 years. Twenty-eight patients (61%) were male and 18 patients (39%) were female. The typhoid ileal perforation was the commonest cause of temporary ileostomy with 32.6% cases. Abdominal tuberculosis was the second commonest indication involving 23.9% patients (Table 1).

Loop ileostomy was the commonest configuration (63%) Table 2. Skin excoriation was the commonest complication. It occurred in 12 (26%) patients. Three patients (6.5%) had persistent problem of skin excoriation. Two patients (4.3%) developed prolapse of ileostomy. One had prolapse with gangrene of the prolapsed segment. An emergency operation was undertaken and the gangrenous segment was resected followed by reconstruction of ileostomy. The other case of prolapse was closed as time for closure was due.

Two patients required readmissions for dehydration (4.3%). Treatment was in the form of intravenous replacement of fluids and electrolytes till the requirement was met. Retraction developed in two of the patients (4.3%). In both the cases, retraction was partial and associated with skin excoriation only. One patient with parastomal hernia (2.2%) was encountered. Closure of ileostomy with repair of stoma site was done at the completion of two months. No case of stenosis was seen in this study (Table 3).

Thus a total of 17 patients (37%) experienced 20 complications, as three of them had dual problems at the same time. Four (8.7%) patients required unplanned readmissions before closure. All the

Table 1: Indications for Temporary Ileostomy

Clinical condition	No. of patients
Typhoid perforation	15 (32.6%)
Abdominal tuberculosis	11 (23.9%)
Penetrating abdominal trauma	7 (15.2%)
Bowel gangrene	7 (15.2%)
Blunt abdominal trauma	2 (4.3%)
Large bowel obstruction	2 (4.3%)
Post-laparotomy ileal perforation	1 (2.2%)
Post-abortion ileal perforation	1 (2.2%)

Table 2: Types of Ileostomy

Type of stoma	No. of patients
Loop ileostomy	29 (63%)
Double barrel ileostomy	14 (30.4%)
Ileocolostomy	2 (4.3%)
End ileostomy with a distant mucus fistula	1 (2.2%)

Table 3: Complications Related to the Construction of Ileostomy

Complication	No. of patients
Skin excoriation	12 (26%)
Retraction	2 (4.3%)
Prolapse	2 (4.3%)
Dehydration	2 (4.3%)
Necrosis	1 (2.2%)
Parastomal hernia	1 (2.2%)

complications were treated conservatively except one (2.2%) with acute prolapse that needed refashioning.

Eight patients underwent closure in other regional hospitals and were not included in study of complications following closure. Ileostomy closure was delayed in 3 patients for 3-6 months, as they were malnourished and were given advice on improvement of nutritional status. Closure in these 3 patients could not be done with in study period. It may be mentioned that these patients had reduced their intake to reduce the output of the ileostomy.

Thirty five patients (out of 46) underwent closure in Surgical Department of Khyber Teaching Hospital, Peshawar after a median time period of 14 (range 7-35, mean 15, +/- 6.8) weeks. Closure was undertaken via peri-ileostomy incision except in one patient, where closure was done at laparotomy as he had an end ileostomy with a distant mucous fistula.

After closure, two patients (5.7%) developed anastomotic leak. One of them needed exploratory laparotomy and reconstruction of ileostomy, while the other one developed a low output external fistula through the previous stomal site that was treated conservatively. Two patients (5.7%) developed wound infections that were treated by antibiotics. There was no mortality associated with closure. The complication rate related to the closure of ileostomy was 11.4%. The mean postoperative stay was 6 (median 5, range 4-15, S.D +/- 2.21) days.

DISCUSSION

Temporary ileostomy is a procedure undertaken in a number of conditions that include both elective and emergency situations and it is considered to be a life saving procedure in many instances. In this study, all ileostomies were constructed in an emergency situation. In the Western studies though, most ileostomies are created electively. The complications of typhoid fever and abdominal tuberculosis constitute major indications for temporary ileostomy in our study as is the case with other local studies,[5,6] while inflammatory bowel disease and ultralow anterior resection are the main indications in the West.[1,2]

Skin excoriation was found to be the commonest complication in this study involving 26% cases. This rate is comparable with the studies by Arumugan PJ et al (16%) and Robertson I et al (20-33%).[14,15] Pearl RK et al claimed 42.1% cases of peristomal skin irritation in a study on intestinal stomas.[16] A national study by Akhtar S et al showed 16% cases of skin excoriation. Memon SA and Beniwal U et al in their studies depicted 17.7% and 16% cases respectively, of skin excoriation in relation with temporary ileostomy in the setting of typhoid ileal perforation.[12,13] The rate of skin excoriation is thus slightly higher in this study than other loco-regional studies. On the other hand, several international studies have shown lesser rates of skin excoriation in their studies on temporary ileostomies.[1,8,17] Inadequate advice on stoma care prior to patient discharge could be a possible reason. Another important factor is poor socioeconomic status of patients. They find it difficult to change the ileostomy bags when a change is required allowing leakage to continue. Some even resort to the use of plastic bags over a metallic ring that also predisposes to leakage. Leakage in turn leads to skin excoriation.

Prolapse occurred in 2 cases out of the total 40 patients included in this study. Hence the incidence was 4.3% as compared with 4% noted by Akhtar S et al.[5] Robertson I et al found stomal prolapse in 3% cases of ileostomy in the first 10 postoperative days, which increased to 11% at 2 years.[15]

Retraction of stoma was noted in 4.3% cases. It is almost similar to 4% rate depicted by Safirullah et al.[6] Beniwal US et al noticed 2.9% cases of retraction of ileostomies.[13] Several international studies show a range of one to 11% of retraction in cases of ileostomy.[2,11,15,18,19] Retraction usually is associated with problems of leakage and skin irritation. Care of the skin is thus all that is required mostly. Only one patient (2.2%) developed gangrene of the stoma and that too was associated with prolapse. In various studies the incidence has been reported to be 0.4-3%.[2,14,20]

Closure of ileostomy was associated with certain complications. Two out of thirty five patients (5.7%) experienced anastomotic leakage. One of these two had an end ileostomy with a distant mucous fistula and was closed at formal laparatomy. This is high rate of leakage when compared with other studies that show rates less than 3%.[1,2,9,10,21] 5.7% rate of wound infection after closure is comparable with other studies that show rates in the range of 2-3%.[2,9,11]

CONCLUSION

Temporary ileostomy is associated with minor complications at an acceptable rate. Most of these complications can be dealt with conservatively.

REFERENCES

1. Platell C, Barwood N, Makin G. Clinical utility of a defunctioning loop ileostomy. ANZ J Surg 2005; 75: 147-51.
2. Hallbook O, Mathiessen P, Leinskold T, Nystrom PO, Sjodahl R. Safety of the temporary loop ileostomy. Colorectal dis 2002; 4: 361-64.
3. Edwards DP, Leppington-Clarke A, Sexton R, Heald RJ, Moran BJ. Stoma related complications are more frequent after transverse colostomy than loop ileostomy: a prospective randomized clinical trial. Br J Surg 2001; 88: 360-63.

4. Rullier E, Toux N, Laurent C, Garrelon JL, Parneix M, Saric J. Loop ileostomy versus loop colostomy for defunctioning low anastomosis during rectal cancer surgery. World J Surg 2001; 25: 274-77.

5. Akhtar S, Ali IA, Khan AFA, Chowdhary AM. Experience of ileostomy in general surgical practice. Pak J Surg 1996; 12: 71-73.

6. Safirullah, Mumtaz N, Jan MA, Ahmad S. Complications of intestinal stomas. JPMI 2005; 19: 407-11.

7. Bashir M, Nadeem T, Iqbal J, Rashid A. Ileostomy in typhoid perforation. Ann KE Med Coll 2003; 9: 1-3.

8. Ahmad M, Farogh A, Ahmad I, Sohail A, Gill KM, Ahmad M. Intraabdominal tuberculosis. J Surg Pak 2002; 7: 16-18.

9. Law WL, Chu KW, Choi HK. Randomized clinical trial comparing loop ileostomy and loop transverse colostomy for fecal diversion following total mesorectal excision. Br J Surg 2002; 89: 704-08.

10. O' Toole GC, Hyland JM, Grant DC, Barry MK. Defunctioning loop ileostomy: a prospective audit. J Am Coll Surg 1999; 188: 6.

11. Feinberg SM, Mcleod RS, Cohen Z. Complications of loop ileostomy. Am J Surg 1987; 153: 102-07.

12. Memon SA. A surgical Audit of the management of typhoid perforation. J Surg Pak 2001; 6: 4-5.

13. Beniwal US, Jindal D, Sharma J, Jain S, Shyam G. Comparative study of operative procedures in typhoid perforation. Indian J Surg 2003; 65: 172-77.

14. Arumugam PJ, Bevan L, Macdonald L, Watkins AJ, Morgan AR, Beynon J, Carr ND. A prospective audit of stoma-analysis of risk factors and complications and their management. Colorectal dis 2003; 5: 49-52.

15. Robertson I, Leung E, Hughes D, Spiers M, Donelly L, Mackenzie I, Macdonald A. Prospective analysis of stoma related complications. Colorectal dis 2005; 7: 279-85.

16. Pearl RK, Prasad ML, Orsay CP, Abcarian H, Tan AB, Melzl MT. Early local complications from intestinal stomas. Arch Surg 1985; 120: 1145-47.

17. Grenados-Garcia J, Takahashi T, Tapia M, Heyes C, Villalobes JJ. Retrospective study of 50 ileostomies at the Salvador Zubiron National Institute of Nutrition. Rev Invest Clin 1996; 48: 111-15.

18. Wexner SD, Taranow DA, Johansen OB, Itzkowitz F, Daniel N, Nogueras JJ, Jagelman DG. Loop ileostomy is a safe option for fecal diversion. Dis Colon Rectum 1993; 36: 349-54.

19. Speirs M, Leung E, Hughes D, Robertson I, Donnelly L, Mackenzie I, Macdonald A. Ileostomy rod- is it a bridge too far? Colorectal dis 2006: 8; 484-87.

20. Carisen E, Bergan AB. Loop ileostomy: Technical aspects and complications. Eur J Surg 1999; 165: 140-43.

21. Nunoo-Mensah JW, Chaterjee A, Khanwalkar D, Nasmyth DG. Loop ileostomy: modification of technique. Surgeon 2004; 2: 287-91.