Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2016; 4(3F):1032-1034 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2016.v04i03.078

Case Report

Early Closure of High Output Stoma (Jejunostomy): A Case Series

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Abstract: The main aim is to present our clinical experience of early closure of high output stoma (jejunostomy). The methods were three patients had been taken in the study, in which jejunostomy was formed in the emergency laparotomy as life saving procedure. Stoma was closed after three weeks. The results were all patients were stable after stoma closure. No major complication was noted in post operatively. In conclusion the early closure of jejunostomy is good alternative in these patients.
Keywords: Early closure, jejunostomy, three weeks, patients, complications

INTRODUCTION

High output fistula like jejunostomy (loop or end) is a challenge for management even in modern clinical practice. The most frequent causes of intestinal resection in adults are secondary surgery for vascular and neoplastic disease, and Crohn's disease complications which may require stoma [1]. Stoma is defined as a surgically created opening in the abdomen for the diversion of faecal matter, to protect bowel anastomosis, to manage incontinence or in the case of certain temporary ostomies, to improve symptoms [2]. Estimated incidence of stoma is about 20-30% [3, 4]. Local complications are peristomal skin excoriation, infections, parastomal hernia, stomal stenosis, retraction, prolapse, fistula formation, and peristomal varices, which have been associated with high rates of morbidity and mortality [5]. Most common complication is peristomal skin irritation leading to skin excoriation [6]. Excessive output from stoma causes complication related to electrolyte abnormalities. Some studies reported this complication may lead to dehydration and renal dysfunction, with incidence of 1 - 17%. Approximately 4 - 43 % of hospital readmission may be due to these complications [3]. High output stomas are generally treated by identifying the cause & managed by oral or/and intravenous replacement of water and electrolytes, antisecretory and anti diarrheal drug, nutritional and psychological support [7].

MATERIAL AND METHODS

This study had been done between Jan 2015 to Jan 2016 on three patients in VMMC and Safdarjung Hospital, New Delhi. One patient presented with constipation, vomiting and pain abdomen from one day. Other two patients had come with faecal fistula, which had been operated outside this hospital for jejunal perforation. All patients were investigated and patients were nutritionally build up and then taken for operation after proper anaesthesia check up. All patients had been operated in emergency for surgical abdomen and jejunal stoma was formed as life saving procedures due to underlying condition of bowel. Then patients had been observed in the ward and infection was controlled with intravenous antibiotics. Blood transfusion was given according to need. Patients had been given parenteral nutrition according to need. Patients had been orally allowed once stoma started functioning. All investigation like hemogram, Serum protein, Serum albumin, Serum electrolytes, Liver and kidney function test were closely observed. Patients were taken for jejunal stoma closure only after these investigations were normal. Patients discharged and followed up for 3-6 months.

SURGICAL TECHNIQUES

One patient aged 25 year old came in emergency with pain abdomen, vomiting and constipation from one day. Patient had past history of exploratory laparotomy one year back. On examination abdomen was mildly distended, generalised tenderness

was present, bowel sound was normally heared. Patient was diagnosed acute intestinal obstruction clinically. Erect and supine abdominal x -ray was done. After proper resuscitation patient was taken for emergency exploratory laparotomy. Gangrenous bowel was present two feet distal to duodenal and jejunal junction, which was resected out and double barrel stoma (proximal end jejunum and distal end ileum) was formed. Patient was observed and oral feeding was started after stoma function. After proper work up patient was taken for stoma closure on 21st day. Stoma was closed from local site with vicryl 3-0 single layer extra mucosal. Post operatively patient was stable but after one week patient had developed low output faecal fistula (less than 50 ml per day in this case), which was managed conservatively. Patient was discharged and was followed. Second patient aged 26 year came in emergency with faecal fistula. Patient was operated outside our hospital for jejunal perforation and patient developed faecal fistula. After resuscitation of patients patient was taken for exploratory laparotomy and loop jejunostomy was created as life saving procedure. Patient was observed post operatively. After proper work up patient was taken for loop jejunostomy closure on 21st day of loop jejunostomy formation. Loop jejunostomy closure was done with vicryl 3-0 from local site. Patient was discharged after stitch removal and followed post operatively. Third patient aged 16 year presented with faecal fistula in emergency, which had been operated outside this hospital. After resuscitation patient had been taken for exploratory laparotomy. Patient had small bowel gangrene with one and half feet jejunum spared. Gangrenous small bowel was resected and anastomosis between jejunum and ascending colon was done. Post operatively patient had developed faecal fistula, so patient had again taken for operation and loop jejunostomy was formed as perforation was found proximal to previous anastomosis. Patient was observed. After proper work up, patient was taken for loop jejunostomy closure on 23 rd day of loop jejunostomy creation. Due to adhesion jejunal and transverse colon was done. Patient was stable post operatively and discharged and followed post operatively.

Table 1: Showing summary of procedures

S.N	Age(year)	Sex	Diagnosis	1st operation	2nd operation	Days between two operation	Post operative complication
1	25	M	Intestinal obstruction	Double barrel stoma (proximal end jejunum)	Double barrel stoma closure	20 days	Low output faecal fistula((managed conservatively)
2	26	M	Faecal fistula	Loop jejunostomy	Loop jejunostomy closure	20 days	Nothing
3	16	M	Faecal fistula	Loop jejunostomy	Stoma closure	22 days	Nothing

RESULTS

All patients were stable, passed flatus on second post operative day. After that they passed regularly stool. One patient developed faecal fistula on seventh post operatively from midline suture site. Volume of effluent from fistula was less than 50 ml, low output fistula. Faecal fistula was closed spontaneously after two week on conservative treatment by intravenous antibiotic and nil per oral. No other complication noted. Patient was discharged after one week except patient with faecal fistula which was discharged after control of faecal fistula.

DISCUSSION

High output stoma may defined as total volume of effluent that significantly exceeds one litre. There is a huge amount of intestinal secretions from the Jejunum, which help in digestion. The output from jejunostomy is watery, clear and dark green in colour and usually starts within 48 hours post operatively. The output can be over 2 litres per day, so monitoring of the fluid and electrolyte balance required for these patients. The absorption of nutrients, fluid and electrolyte may reduce in such type of patients. These patients are at risk for electrolyte imbalance and deficiency in protein, calories and vitamin mainly B_{12} [8]. High output stoma can result to a state of chronic dehydration. Due to huge losses of fluid, these patients present major deficits of water, sodium and magnesium. A jejunostomy is an opening into the jejunum which may required in Crohn disease, trauma, or extensive bowel resection. Recent literature reported overall morbidity in different type of stoma in various patients may vary between 17 and 45% [9, 10, 11]. Stoma may influence quality of life and body image. Many patients remain distressed due to

stoma and they want reversal of stoma as early as possible.

There are no standard protocols for stoma closure [12]. Time of reversal of stoma is variable among hospitals [13]. After diverting ileostomy stoma closure usually done after 6-12 weeks [10, 14, 15]. Diverting jejunostomy closure also generally done after 6 -12 weeks. In this study we had planned for early closure after 3 week, once patient had no infection, improved nutritionally and malnutrion and long term weight loss [16]. In this study we had planned for early closure, because these are high output stoma so patients are at risk for electrolyte imbalance, protein, calories and vitamins deficiency if stoma left for long duration. Stoma care for jejunostomy is also very important as stoma output is in large amount. Therefore early closure of jejunostomy in patient may be beneficial.

CONCLUSION

Stoma output in jejunostomy patients is high output, which affects patients day to day activity and also they remain distressed. Malnutrition, weight loss and electrolyte imbalance may occur in these patients if time to closure of stoma prolonged. So early closure in this patient may be beneficial. As very few numbers of cases are taken in this study, a larger study may need for a definite conclusion.

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