

Original Article

The Twisted Gut: Role of Primary Anastomosis without Colonic Lavage

Madhumita Mukhopadhyay*

Department of Surgery, Burdwan Medical College and Hospital, West Bengal, India

***Corresponding Author**

Dr. Madhumita Mukhopadhyay
Block 2, 7A, Ekta Heights
56, Raja S.C. Mullick Road
Kolkata – 700032
West Bengal, India
E-mail: drmmeeetuu@yahoo.co.in

Keywords:

*Sigmoid volvulus,
Primary anastomosis,
Anal dilatation*

Abstract

Background: The twisted gut or the sigmoid volvulus has a multitude of treatment options ranging from colonic decompression to staged procedures such as primary resection anastomosis with covering colostomy followed by colostomy closure at a later date.

Objective: This study aims to evaluate the efficacy and safety of primary resection and anastomosis followed by anal dilatation without on table colonic irrigation or diversion colostomy in cases of acute sigmoid volvulus.

Methods: This study was carried out over a span of three years and seven months at a teaching hospital in West Bengal. One hundred consecutive cases of acute sigmoid volvulus that underwent primary resection and anastomosis without diversion colostomy were included in the study.

Results: There were 94 males and 6 females. The age ranged from 35 to 72 years, the majority (65 %) of the patients being in the age group of 41-60 years. All the patients underwent primary resection and anastomosis without on table colonic irrigation. Superficial wound infection was detected in 18% patients.. There was no clinical anastomotic leak, intra abdominal abscess or recurrence of volvulus or mortality in our series.

Conclusion: In conclusion, primary resection and anastomosis of the colon without faecal diversion for acute sigmoid volvulus is safe and can be accomplished without any mechanical bowel preparation or on table colonic irrigation.

1. Introduction

The sigmoid colon is the most common site of volvulus in the gastrointestinal tract, accounting for up to 6% of all intestinal obstructions [1,2]. It is not a new condition and has been known since ancient times. Reports of a volvulus (twisting) of the sigmoid colon can be found in a papyrus from ancient Egypt [1]. There is a multitude of treatment options ranging from colonic decompression to staged procedures such as primary resection anastomosis with covering colostomy followed by colostomy closure at a later date. This study aims to evaluate the efficacy and safety of primary resection and anastomosis followed by anal dilatation without on table colonic irrigation or diversion colostomy in cases of acute sigmoid volvulus.

2. Materials and Methods

This study was carried out over a span of three years and seven months at a teaching hospital in West Bengal. One hundred consecutive cases of acute sigmoid volvulus who underwent primary resection and anastomosis without diversion colostomy were included in the study. Those patients who were treated with any other form of surgery and patients with gangrenous changes at the twisted ends, perforation and peritonitis were excluded from the study.

Diagnosis was made on the basis of clinical signs and symptoms of large gut obstruction and plain X ray abdomen showing “coffee-bean” sign or “omega sign”. All patients were resuscitated and received prophylactic antibiotics. Midline laparotomy was done in all the cases. The sigmoid was untwisted and decompressed by a colotomy. The redundant sigmoid colon was resected proximally and distally and the cut margins were checked for viability. The colon ends were trimmed until there was free bleeding. The descending colon and upper rectum were mobilized to facilitate the anastomosis. Primary anastomosis was done with two layers of vicryl sutures. No on table colonic irrigation or covering stoma was done in any patient. The abdominal cavity was washed with saline in the event of a faecal spill. A pelvic drain was routinely given in all the patients. The midline incision was closed with No. 1 prolene suture. This was followed by routine anal dilatation.

3. Results

One hundred patients were studied during this period. All underwent emergency surgery. There were 94 males and 6 females, the male to female ratio being 15.67: 1. The age ranged from 35 to 72 years, the majority (65 %) of the patients being in the age group of 41-60 years. The age and sex distribution is given in Table 1. A definite pre operative diagnosis of volvulus was made in 83 % of the patients by clinical methods and radiography. In the remaining a diagnosis of large gut obstruction was made at laparotomy. Among the patients, 17 were hypertensive and 14 were diabetic.

All the patients underwent primary resection and anastomosis without on table colonic irrigation. Manual decompression of the proximal colon was done in 68% of the cases. Superficial wound infection was detected in 18% patients (Table 2). All were managed with antibiotics given according to the culture and sensitivity reports. There was no clinical anastomotic leak, intra abdominal abscess or recurrence of volvulus. The duration of hospital stay ranged from 10-25 days. There was no mortality in our series.

Table 1: Age and sex distribution

Age (years)	Males	Females	Total	Percentage
31-40	2	-	2	2%
41-50	26	-	26	26%
51-60	39	-	39	39%
61-70	27	4	31	31%
71-80	-	2	2	2%
Total	94	6	100	100%

Table 2: Post operative complications

Complications	Total number of patients	Males	Females	Percentage
Superficial wound infection	18	17	1	18%
Anastomotic leak	0	0	0	0%
Death	0	0	0	0%

4. Discussion

The twisted gut or the sigmoid volvulus is the twisting of the sigmoid volvulus on its mesentery. It is a common condition in parts of Asia, Africa and South America where the consumption of high fibre diet results in a long, redundant sigmoid colon. In developing countries it is a major cause of large bowel obstruction [3]. The management of sigmoid volvulus has evolved over the years from simple detortion either by endoscopic means or open surgery through colostomy related procedure, and now one-stage resectional surgery. Even though endoscopic detortion is a useful initial management in the absence of gangrene or peritonitis, resection of the redundant sigmoid colon remains the definitive treatment [4].

Routine mechanical preparation of the large bowel remains a standard pre-operative preparation for elective colon surgery. In addition to facilitating anastomosis in a clean field, soilage of anastomosis with faecal matter is reduced. In the emergency situation, routine preparation is impossible [4]. In order to achieve colon cleansing, antegrade intraoperative lavage with electrolyte solution was introduced. A one-stage procedure employing antegrade colonic irrigation decreases cumulative anesthetic risk, improves quality of life because no stoma is required and shortens hospital stay. However colonic irrigation being a tedious procedure may increase operating time [5]. Colonic irrigation with large amount of saline can lead to electrolyte abnormalities and may have more risk of spillage and contamination [6-9].

It has been shown that manual decompression of the colon alone is as good as colonic irrigation in the management of left-sided large bowel emergencies [10]. One can easily decompress manually a dilated proximal colon. There were less chances of faecal spillage at the anastomosis, due to exteriorizing of the transected colon from the operating field and cleaning the ends of the colon before anastomosis [5]. In our study the superficial wound infection rate was 18% which is in accordance with other studies [3, 11, 12].

In conclusion, primary resection and anastomosis of the colon without faecal diversion for acute sigmoid volvulus is safe and can be accomplished without any mechanical bowel preparation [4] or on table colonic irrigation.

References

- [1] Ward S, Khan D, Edwards T, Daniels I. Sigmoid Volvulus : A New Twist to an Old Problem. *The Internet Journal of Surgery* 2010; 27 (2).
- [2] Balantyne GH. Review of sigmoid volvulus : history and results of treatment. *Dis Col Rectum* 1982; 25(8): 823-30.
- [3] Khan M, Ullah S, Ullah Jan MA, Naseer A, Ahmad S, Rehman AU. Primary anastomosis in the management of sigmoid volvulus without colonic lavage. *JPMI* 2007; 21(4): 305-308.
- [4] Oludiran OO, Osime OC. Emergency one- stage resection without mechanical bowel preparation for acute sigmoid volvulus. *Journal of Medicine and Biomedical Research*. 2004; 3(2): 86-90.
- [5] Ali M, Hashmi Z, Zafar A. Management of acute sigmoid volvulus, using one stage resection and anastomosis, without colonic lavage. *Gomal Journal of Medical Sciences* 2009; 7(2): 101-105.
- [6] Lim JF, Tang CL, Seow-Choen F, Heah SM. Prospective randomized trial comparing Intraoperative colonic irrigation with manual decompression only for obstructed left-sided colorectal cancer. *Dis Colon Rectum* 2005; 48: 205-9.
- [7] Naraynsingh V, Rampaul R, Maharaj D, Kuruvilla T, Ramchavan K, Pouchet B. Prospective study of primary anastomosis without colonic lavage for patients with an obstructed left colon. *Br J Surg* 1999; 86: 1341-3.
- [8] Hsu TC. One-stage resection and anastomosis for acute obstruction of the left colon. *Dis Colon Rectum* 1998; 41: 28-32.
- [9] Patrili A, Contine A, Carbone E, Gulla N, Donini. One-stage resection without colonic lavage in emergency surgery of the left colon. *Colorectal Disease* 2005; 7: 332-8.
- [10] Sule AZ, Misauno M, Opaluwa AS, Oio E. One- stage treatment of left – sided large bowel emergencies. *East Afr Med J* 2008; 85(2): 80-4.
- [11] Naaeder SB, Archampong ED. One stage resection of acute sigmoid volvulus. *Br J Surg* 1995; 82:1635-6.
- [12] Santos JCM Jr., Batista J, Sirimarco Mt, Guimares AS, Levy CE. Prospective randomized trial of mechanical bowel preparation in patients undergoing elective colorectal surgery. *Br J Surg* 1994; 81:1673-6.