Elective sigmoid resection at sigmoid volvulus management with small transverse incision in left lower quadrant

Mostafa Mehrabi Bahar∗  Ehsan Soltani†
Elena Saremi‡

∗†mashhad university of medical sciences, soltanie841@mums.ac.ir
‡
Elective sigmoid resection at sigmoid volvulus management with small transverse incision in left lower quadrant

Mostafa Mehrabi Bahar, Ehsan Soltani, and Elena Saremi

Abstract

Background Conclusion

Emergent endoscopic detorsioning and then elective sigmoid resection is the approved treatment in sigmoid volvulus. Usually this resection was performed with a large subumbelical median incision or with laparoscopy. We used a small horizontal incision for resection.

Methods

After a successful endoscopic detorsioning in 10 patients with sigmoid volvulus, the sigmoid were resected using a small horizontal incision in left lower quadrant.

Results

None of patients had any complications of anastomosis. With a good recovery period they were discharged from hospital after 5 days. During a 5 year of following up no specific complication was detected.

Conclusion

Elective sigmoid resection using a small horizontal incision in left lower quadrant in the management of sigmoid colon volvulus would be safe, simple, and rapid.

KEYWORDS: sigmoid volvulus, endoscopic detorsioning, sigmoid resection
**Indication**

The third cause of colon obstipation is sigmoid volvulus following cancer and diverticulitis\(^1,2\). It will be presented with symptoms like obstipation, abdominal colicky pain, nausea, and vomiting. The diagnosis is based on clinical and radiological findings. Endoscopic detorsioning is the first treating step if no peritonitis or gangrene evidence has been observed \(^3-8\). This has been a successful attempt to a great extent. After the detorsioning an elective colon resection is mandatory so no further volvulus could occur \(^3,4,\) and \(^7\). Those are what we have done, but via a small horizontal incision in left lower quadrant.
Method

The study was conducted after ethics committee approval (Mashhad University of Medical Sciences, Iran) from March 1995 to February 2004. The participants included 37 patients with sigmoid volvulus admitted in the emergency department with age ranging from 34 to 75 years. All had admitted because a series of symptoms of obstipation, abdominal distention, nausea, and vomiting. Diagnosis was based on supine abdominal x-ray and clinical findings. If there were no evidence of bloody discharge in digital rectal examination, detorsioning was tried with a rigid rectosigmoidoscope under an Intra venous sedation. 16.21% of patients had gangrenous findings on sigmoidoscopy whereupon the procedure was held on and a laparatomy was performed. Also in 13 patients (41.9%) detorsion was achieved while it was an unsuccessful attempt in others who then underwent an emergent laparatomy. In patients with detorsioned volvulus a rectal tube was inserted in to have a complete decompression and early relapse would be prevented. From 13 patients with successful endoscopic detorsioning 3 patients left the study so we have managed 10 cases of sigmoid volvulus with an average age of 51 years (ranging from 35 to67) with a male to female ratio of 4:1. Written informed consent was obtained from all participating patients.

The colon was mechanically and chemically prepared, using polyethylene glycol, Neomycin, and Erythromycin. The operation was performed on the day 2 or 3 after the detorsioning. Epidural anesthetic was applied on all patients. With a transverse incision, 5-7 cm long, located between umblicuus and anterior superior iliac spine, and lateral to the border of rectus muscle (fig 1), the subcutaneous tissue was opened deep to the fascia using an electrocoagulation. The external oblique fascia was transversally open up from lateral border of rectus muscle. Internal oblique and
transverse abdominal muscles were split through their fibers and then peritoneum was open up. Sigmoid loop was grasped using a Babcock and pulled out of the incision (fig 2).

As these patients do not need a sigmoid oncological resection, thereafter in 5cm from the wound level colon and its mesentery were resected and two ends of the reaming bowel was primarily anastomosed in an end to end pattern, using Gambee sutures and in a single layer (fig 3). Then the bowel was sent into the abdominal cavity and abdominal wall was repaired. On the third day after the operation; diet was started and on the fifth day the patient could be discharged if he has had defecation.

In all patients as food intake gradually increased and no evidence of ileus was detected. They showed neither complications of anastomosis site nor early post operational obstipation. No specific complication was detected during 5 years of following up.
Advantages and disadvantages

Sigmoid volvulus which is one of the most common causes of colon obstruction in adultery cases has a relatively high rate of incidence in specific geographic areas such as Africa, Asia, Middle East, Eastern Europe, and South America.\(^9\)

The main predisposing factor in sigmoid volvulus is: having a large, redundant sigmoid colon with an elongated narrow base mesentery which is prone to twist on itself.\(^10\)

Endoscopic detorsioning is the treatment of choice unless there are evidences of peritonitis or bowel gangrene in rectal examination where an urgent laparotomy is mandatory. An elective sigmoid resection should be concern to prevent the probability of the recurrency. This has been routinely preformed either laparoscopically or with laparotomy through a median incision. Instead of a median incision, we have used a small horizontal incision in left lower quadrant which theoretically has more benefits compared to the conventional method, as the followings:

- A very less probability of incisional hernia
- The probability of bladder trauma through a median incision
- Longer operation time while using a median incision
- Transverse incision has better outcome cosmetically
- Less post operation pain because of smaller incision
- Low probability of ileus due to less bowel manipulation in the new method.

One of the prominent point of concerns in the new method is the partial abdominal exploration not a complete one and so the probability of the co-existence pathologies which is not a big deal as it includes all the operations through a small incision; e.g. appendectomy. Furthermore in the patients’ first intervention the rectum and sigmoid colon has been evaluated by a rectosigmoidoscope during the endoscopic detorsioning. This means a diagnostic role of rectosigmoidoscopy in addition of its therapeutic one; which could recognize a secondary causing factor of volvulus such a cancer. Finally although a trial study could present the results stronger, but it seems that the new method is an appropriate and preferred one.

We concluded that elective sigmoid resection through a small transverse incision is left lower quadrant is a simple, rapid, safe and also well tolerated procedure in the management of sigmoid volvulus.
References


Fig. 1: A transverse incision located between umbilicus and anterior superior iliac spine
Fig. 2: Sigmoid loop was grasped using a Babcock and pulled out of the incision
Fig. 3: Sigmoid resection and end to end anastomosis, using Gambee sutures