TECHNICAL NOTES

Mesosigmoidoplasty as a Definitive Operation in Treatment of Acute Sigmoid Volvulus

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PURPOSE: The aim of this prospective study was to present our patients with managed mesosigmoidoplasty as a definitive method and to discuss the efficiency of this operation in the treatment of acute sigmoid volvulus. METHODS: Fifteen patients with acute sigmoid volvulus were treated by mesosigmoidoplasty between April 1992 and April 1995. RESULTS: Postoperatively, temporary abdominal distention and constipation were seen in two patients, and one patient died of myocardial infarction. Morbidity and mortality rates were 13.3 and 6.6 percent, respectively. The average follow-up was 28.09 ± 9.60 months, and recurrences and complaints of undue constipation were not seen. CONCLUSIONS: Our results suggest that the mesosigmoidoplasty is a definitive procedure and that it is the first and most reliable choice that can be easily performed with minimum morbidity and mortality for patients with acute sigmoid colon volvulus who do not have sigmoid necrosis at laparotomy. [Key words: Sigmoid volvulus; Mesosigmoidoplasty; Surgical technique]


Treatment of acute sigmoid volvulus is a difficult surgical problem, because reported morbidity and mortality rates are still high. The most important prognostic factors for patients with acute sigmoid volvulus are viability of the sigmoid colon, age of patients, and concurrent medical illness. Overall mortality rate of sigmoid volvulus is 15 percent, although it varies from 0 to 75 percent, depending on intestinal viability.1-4 The purpose of this prospective study, which involved 15 patients with acute sigmoid volvulus who had viable sigmoid colon at laparotomy and were treated by mesosigmoidoplasty between April 1992 and April 1995, is to present the results of the first cases and to discuss the results.

TECHNIQUE

Following adequate resuscitation, midline laparotomy was performed under general anesthesia. After distended sigmoid colon was detortioned and deflated by rectal tube, viability of the sigmoid colon was confirmed. Before starting the mesosigmoidoplasty procedure, base and length of mesosigmoid were measured. A vertical incision was made on the peritoneal layer of mesosigmoid, starting from the narrow base of mesosigmoid to 2.5 to 3 cm from the mesenteric border of sigmoid colon (Fig. 1). When the base of mesosigmoid was very narrow, vertical incision was advanced toward the root of mesosigmoid as a Y (Fig. 2). Then, peritoneal flaps were elevated, taking care not to damage underlying mesenteric vessels. When necessary, peritoneal flaps were excised. A similar procedure was repeated on the other side of mesosigmoid. Incisions were sutured transversally or as a V by 2-0 chromic catgut (Fig. 3). After completion of this procedure, base and length of mesosigmoid were measured repeatedly. Thus, it was detected that long mesosigmoid was shortened and narrow base of mesosigmoid was broadened significantly by modified mesosigmoidoplasty procedure.

RESULTS

Mean operation time was 53.36 ± 8.90 minutes. Both anatomic and functional results were satisfactory in all patients. One patient developed a 4-cm hematoma under the flap; however, this hematoma was not fully developed. Operative mortality was not seen in any patient. Postoperatively, intravenous liquid electrolyte infusion and nasogastric aspiration were continued until the return of bowel sounds. In two patients, temporary abdominal distention and constipation were seen, and

Read at the National Congress of the Surgery of Colon and Rectum, Belek-Anatlya, Turkey, September 9 to 16, 1995.
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Figure 1. A vertical incision is made on the peritoneal layer of mesosigmoid, and peritoneal flaps are raised laterally.

Figure 2. If necessary, vertical incision is advanced to root of mesosigmoid as a Y.

Figure 3. Appearance of sigmoid colon and mesosigmoid after mesosigmoidoplasty.

DISCUSSION

Mesosigmoidoplasty (mesocoloplasty) was first described by Tiwary and Prasad in 1976 for patients with sigmoid volvulus without sigmoid colon necrosis as regards anatomic malformation. They performed mesosigmoidoplasty in 12 patients, reported zero morbidity and mortality rates, and did not see any recurrence in the 18-month follow-up period. Subsequently, in 1988, Chenebeaux and colleagues reported that mesosigmoidoplasty was an alternative method to colonic resection in patients with sigmoid volvulus. In 1992, Subrahmanyan reported successful treatment with standard emergency mesosigmoidoplasty of 78 patients with acute sigmoid volvulus in 12 years. He reported that one patient with larynx carcinoma died from aspiration pneumonia and that two patients had wound infection, and there was no recurrence during the following 8.2 years.

After these good results and encouraging publications about mesosigmoidoplasty in noncontrolled studies, Bagarani and colleagues performed mesosigmoidoplasty in seven patients. As opposed to previous reports, they stated two recurrences on the 10th and 16th postoperative months. Therefore, they rejected the opinion of Tiwary and Prasad, Chenebeaux et al., and Subrahmanyan that mesosigmoidoplasty operation was a definitive operation for acute sigmoid volvulus.

In this prospective study, mesosigmoidoplasty operation was performed in 15 patients with sigmoid volvulus without colon necrosis. One patient died on postoperative day 14 because of myocardial infarction. In the other 14 patients, no severe morbidity or recurrences and complaints of undue constipation.

one patient who was 80 years old died of myocardial infarction on postoperative day 14. Morbidity and mortality rates were 13.3 and 6.6 percent, respectively. Mean hospitalization time was $9.82 \pm 3.89$. In mean follow-up of $28.09 \pm 9.60$ (range, 8–43) months, there were no recurrences or complaints of undue constipation.