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Minilaparotomy without general anesthesia for the treatment of sigmoid volvulus in high-risk patients: A case series of 4 patients

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ABSTRACT

BACKGROUND: Sigmoid volvulus (SV) is a common cause of large bowel obstruction worldwide. Presenting symptoms can be nonspecific and varied amongst the elderly population, making medical and surgical management challenging. This population is at markedly increase risk of complications and mortality with surgery under general anesthesia. In this case series, we describe 4 cases of sigmoid volvulus in octogenarians.

GOALS: To demonstrate that sigmoid colectomy under local anesthesia, with or without intravenous conscious sedation, is feasible and can be done safely and with a low rate of converting to a general anesthetic.

RESULTS: Four patients, mean age 90 years, were admitted a total of 4 times for acute sigmoid volvulus. All patients had serious comorbidities and were classified as ASA III. There was no relevant past surgical history. All patients were severely physically deconditioned but alert and able to interact meaningfully with their families and caregivers. Three patients suffered recurrent volvulus following endoscopic decompression and one patient underwent immediate surgery due to abdominal tenderness.

CONCLUSION: Our experience demonstrates that minilaparotomy for sigmoid volvulus is effective and safe. The techniques and can extend the applicability of definitive surgical intervention to this high-risk population of patients. In our series postoperative outcomes were excellent, however, additional studies are needed to determine if this technique results in improved 30-day and long-term mortality and morbidity in high-risk patients and to determine the utility of extending the technique to all patients with sigmoid volvulus.

1. Introduction

Sigmoid volvulus is a common cause of large bowel obstruction in adults worldwide. In the US, about 60% of LBO are caused by neoplasms, 20% by diverticular disease, and 5% due to colonic volvulus [1–3]. This usually presents in older adults around the age of 70 [4,5].

The mainstay of treatment for uncomplicated sigmoid volvulus has been endoscopic detorsion and decompression. Turan et al. and Tan et al. [5,6] report a 60%–75% success rate of successful decompression using this technique. Unfortunately, patients frequently have recurrent volvulus after endoscopic detorsion making primary resection and anastomosis the preferred therapeutic approach in many cases [7–9]. Patients with sigmoid volvulus are often institutionalized, debilitated and usually suffering from neurogenic and psychological disorders [7,14–16]. Many have complex comorbidities [10,11] that place them at a substantial risk for postoperative complications with the traditional surgical approach for sigmoid volvulus.

Longstanding intermittent sigmoid volvulus is associated with anatomic changes that render such patients amenable to colon resection under local anesthesia with or without intravenous conscious sedation. This is due to marked redundancy of the colon, consistent location of mesenteric torsion, as well as, atrophy and atony of the anterior abdominal wall musculature. Risks and complications attributable to general anesthesia can be eliminated by performing the procedure under a local anesthetic with or without intravenous conscious sedation (Figs. 1–6).

In this paper we report our experience with 4 elderly patients successfully treated in this fashion with excellent postoperative results. No patients required conversion to a general anesthetic. Post-operatively, patients recovered bowel function rapidly and were quickly able to resume oral or enteral feedings. 30-day surgical morbidity and mortality were excellent. We posit that expanding the use of this technique to patients who are at severe risk of complications with general anesthesia may dramatically improve outcomes in high-risk patients and that this technique

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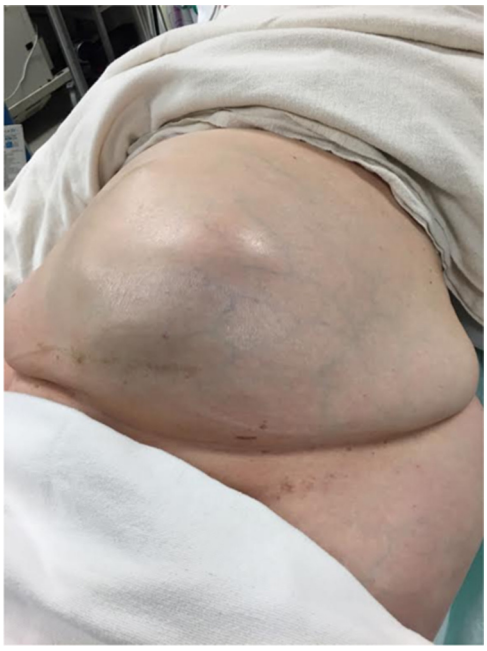

Fig. 1. Patients are placed supine with the head of the bed elevated to minimize aspiration risk. Insertion of a nasogastric tube to suction is considered if imaging studies or clinical picture suggests gastric distension and a high-risk for aspiration. The volvulized colon is commonly visible through the atrophic and atonic abdominal wall musculature.

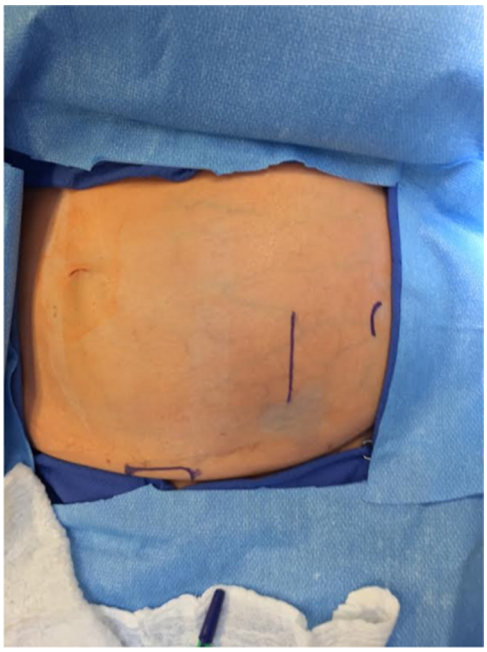

Fig. 2. The Incision is placed in the left lower quadrant. Relation to the anterior superior iliac spine and the symphysis pubis is shown in this image.

could extend the applicability of sigmoid colectomy to patients who were previously deemed poor candidates for this procedure. Additional studies are needed to evaluate the utility and benefit of this approach in patients who are at low or moderate risk for a general anesthetic. The work has been reported in line with the SCARE criteria [12].

2. Materials and methods

2.1. Study population

2.1.1. Patient 1

An 89 year old Caucasian female with a medical history remarkable for atrial fibrillation, coronary artery disease (CAD), congestive heart failure (CHF) with an ejection fraction of 55%–60%, gastroesophageal reflux disease (GERD), hypertension, hyperlipidemia, mild aortic stenosis, moderate tricuspid regurgitation, moderate pulmonary hypertension, obstructive sleep apnea, and a history of pulmonary embolism. She presented to the emergency department with acute onset of abdominal distension and nausea. CT scan showed radiographic stigmata of a sigmoid volvulus. Due to significant abdominal tenderness, she was taken to the operating room urgently. There were no surgical or postoperative complications and she was discharged to a long-term care facility on postoperative day 5.

2.1.2. Patient 2

An 85 year old Caucasian female with a medical history remarkable for aortic regurgitation, CAD, CHF with an ejection fraction of 40%–45%, chronic obstructive pulmonary, diabtory remarkable for aortic regurgitation, CAD, CHF with an ejection fraction of 40%–45%, chronic obstructive pulmonary, diabetes type 2 (DM 2), first degree heart block, ischemic cardiomyopathy (ICM), mitral regurgitation, paroxysmal atrial fibrillation, rheumatic heart disease, and stroke. She presented to the emergency department with acute abdominal pain and distension. Abdominal x-ray showed marked colonic distension with retained stool in the right hemicolon. Barium enema

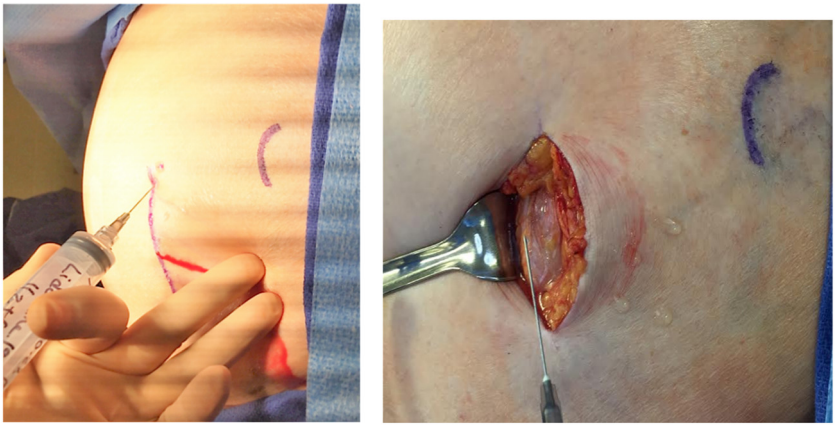

Fig. 3. Local anesthetic is injected into the skin, subcutaneous tissues, and peritoneum. Mild IV conscious sedation is administered if the patient is unable to tolerate the procedure using local anesthetic alone.