CASE REPORT

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Endoscopic management of recurrent sigmoid volvulus in pregnancy: a case report

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Sigmoid volvulus occurring in pregnancy is of rare occurrence with only few cases reported in the literature. In this case, we report two successful endoscopic detorsion procedures of recurrent sigmoid volvulus in a pregnant woman which avoided the need for surgery and allowed a full-term pregnancy.

INTRODUCTION

Colonic volvulus is a condition that results from twisting of the colon along its own mesentery. Although rare, it is an important cause of bowel obstruction with variable reported incidence across the world (Bauman and Evans, 2018). Sigmoid volvulus is the most common type of colonic volvulus, followed by cecal volvulus. The exact cause of colonic volvulus is unknown but may well be predisposed by the presence of a long mobile colonic segment which increases the chance of such twisting to occur (Kapadia, 2017).

Sigmoid volvulus is most frequently associated with being elderly, institutionalized, constipation, diabetes and neuropsychiatric disorders (Halabi, Jafari et al. 2014). Pregnancy have also been associated with the development of sigmoid volvulus causing bowel obstruction, this may be partly explained by the pressure effect from the gravid uterus on the colon (Kapadia, 2017). Typical presenting symptoms of sigmoid volvulus are abdominal pain, distention and absolute constipation. Radiologically, the classical finding on abdominal X-ray is the "coffee-bean" sign which is he appearance of a dilated sigmoid colon with an inverted U-shape. Management of sigmoid volvulus often requires endoscopic detorsion which was shown to have a success rate of 62% and a high recurrence rate up to 46% in one study (Iida, Nakagaki et al. 2017). Surgical resection of the sigmoid colon is indicated when endoscopic management is unsuccessful, contraindicated, or for the prevention of recurrent volvulus (Bruzzi, Lefevre et al. 2015). If not recognized and managed early, bowel obstruction due to sigmoid volvulus can be complicated by ischemia, perforation and death.

CASE REPORT

A 37-year-old pregnant woman (gravida 4, para 2 + 1) presented at 23 weeks of gestation to the emergency room with a 2-week history of worsening constipation, difficulty in passing flatus and progressive abdominal distention. Her presenting symptoms were not associated with abdominal pain, fever, nausea or vomiting. Her past medical and surgical history was unremarkable. She was not using any regular or as needed medications, other than pregnancy multi-vitamins. On physical examination, her vital signs were within normal; abdomen was gravid, soft, non-tender but markedly distended and hyper-resonant to percussion. Her initial laboratory investigations were remarkable for hypokalemia which was corrected after receiving appropriate intravenous potassium replacement. Obstetric ultrasound showed a single viable fetus with adequate amniotic fluid and normal fetal heart motion was recorded. Due to her clinical presentation and suspicion of bowel obstruction, and abdominal X-ray was performed which demonstrated a massively distended sigmoid with a long air fluid level suggestive of sigmoid volvulus. The patient was kept nil by mouth, a naso-gastric tube was inserted and intravenous rehydration was started.

After obtaining an informed consent from the patient, an urgent flexible sigmoidoscopy was performed under direct vision. The scope was carefully advanced with minimal insufflation from the rectum up to 20cm from the anal verge where the apex of the volvulus was identified as shown in (Figure 1). The colonic mucosa appeared healthy with no endoscopic signs of ischemia. The scope was then further advanced beyond the volvulus transition zone where the sigmoid colon was found to be markedly dilated. Endoscopic decompression of the dilated colon was then performed successfully resulting in relief of her abdominal gaseous distention with no immediate complications. Following detorsion of the volvulus, a soft rectal tube was inserted and secured in place to avoid early recurrence and was subsequently removed after 12 hours. The mother and the fetus were monitored following the procedure for 48 hours then discharged in a stable condition with instructions to manage constipation and return to the emergency department should her symptoms recur. One month later, when the patient was at 27 weeks gestation, she returned with a similar clinical presentation and an X-ray demonstrated recurrent sigmoid volvulus. This was again managed successfully with endoscopic decompression in the same technique used during the first episode with no immediate complications then discharged home after being appropriately monitored. The patient eventually completed her pregnancy to term and went through a normal spontaneous vaginal delivery of a healthy fetus.

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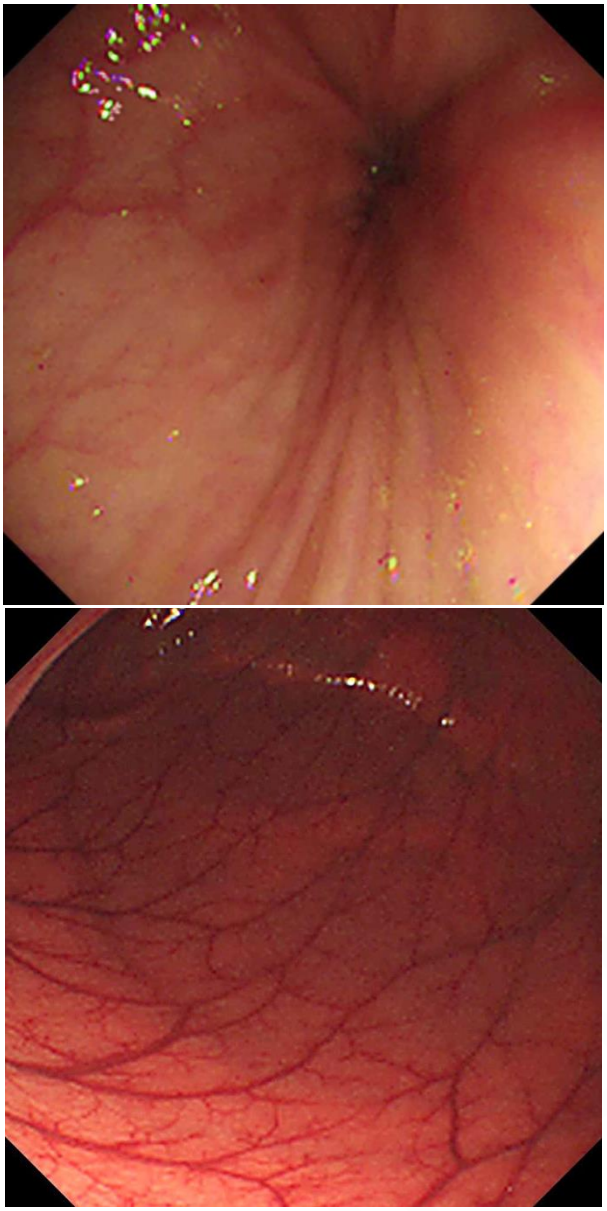

Figure 1 Endoscopic views of sigmoid volvulus. (A) Twisted and closed lumen; (B) Massively dilated colon proximal to the twisted segment.

DISCUSSION

Sigmoid volvulus during pregnancy is rare with fewer than 100 cases reported in the literature (Al Maksoud, Barsoum et al. 2015). Typical presenting symptoms of a volvulus may be masked in a pregnant patient or misinterpreted leading to potentially morbid diagnostic delay. Therefore, it is important for the clinician to keep a high index of suspicion of this condition when evaluating a pregnant woman presenting with symptoms suggestive of bowel obstruction. When volvulus is clinically suspected, confirmation of diagnosis can be aided by x-ray of the abdomen which is considered safe in pregnancy due to low levels of ionizing radiation. Magnetic resonance imaging and ultrasonography can be safely utilized when further assessment is needed rather than computed tomography (Palmucci, Lanza et al. 2014).

Although published data is insufficient on the safety of endoscopy in pregnant patients, it can be justified when failure to perform the procedure could expose the fetus and/or mother to harm as stated by the American Society of Gastrointestinal Endoscopy (Shergill, Ben-Menachem et al. 2012). In our case, failure to perform detorsion of the volvulus would result in maternal and fetal harm. Therefore, in our patient, after initial supportive management and close monitoring, endoscopic decompression was successfully carried out on two separate episodes during the course of her pregnancy avoiding the need for surgical intervention. In conclusion, endoscopic decompression of sigmoid volvulus in pregnancy can be regarded as the first procedure of choice for timely management provided there are no signs of peritonitis, bowel ischemia or perforation in which case surgical resection of the ischemic colon would be necessary.

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