

Augmented Meso - Sigmoidopexy: A Viable Alternative for Non Gangrenous Sigmoid Volvulus in Young Patients

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Abstract: Sigmoid volvulus, a condition seen in elderly and debilitated individuals, can also present in younger patients, particularly in regions known as the volvulus belt. The standard treatment often involves resection and anastomosis due to the lack of endoscopic decompression options in an emergency setting. This case report presents a 31-year-old woman with sigmoid volvulus treated successfully with augmented mesosigmoidopexy, avoiding the need for more invasive surgical procedures. During emergency laparotomy, the patient's sigmoid colon was found to be twisted but viable, allowing for augmented mesosigmoidopexy. This procedure involved plication of the sigmoid mesocolon and fixation at critical junctions to prevent recurrence. Postoperative recovery was smooth, with the patient experiencing no complications or recurrence after four months. This case demonstrates that augmented mesosigmoidopexy can be a less invasive, effective alternative for young patients presenting early without bowel ischemia.

Keywords: Sigmoid volvulus, Mesosigmoidopexy, uncomplicated volvulus, less morbid procedure

1. Introduction & Background

Sigmoid volvulus, a surgical emergency of the elderly and debilitated, can present in young patients too. It is more common in areas of “volvulus belt” (Middle East, Africa, the Indian subcontinent, Turkey, South American) young patients. Given the lack of endoscopic decompression in emergency setting, resection & anastomosis remains the standard of treatment in young patients [1]. Here we present a case of “Augmented meso - sigmoidopexy” which can be a suitable alternative in young patients without the need for morbid resection procedures who present early without bowel ischemia.

2. Case Presentation

We report 31 yr. old nulliparous woman presented with abdomen pain, distension, vomiting and constipation for 1 day with moderately distended abdomen and tympanic note all over the abdomen. Abdomen erect X - ray (Fig.1) showed bent inner tube sign/ Frimann Dahl sign indicative of sigmoid

volvulus. [4]She underwent emergency laparotomy for the same. We found a twisted sigmoid colon in 180 degrees anticlockwise and the sigmoid colon was distended & oedematous with no perforation or gangrene (Fig 2). Since the bowel was viable, we proceeded with augmented meso - sigmoidopexy with plication of sigmoid mesocolon, fixation of stretched mesothelial layer of mesocolon (Fig.3) at the junction of descending colon –sigmoid and recto sigmoid junctions. This also straightens the sigmoid colon, broadens the sigmoid mesentery. This was followed by flatus tube insertion to maintain reduction and colonic decompression.

She was started on sips of water on 3rd postoperative day and ascended as she passed flatus and stools. She was also given laxatives to avoid constipation. A week later, barium enema was taken to know the sigmoid colon anatomy (Fig.4) which was similar to an almost normal sigmoid colon.

4 months post - surgery, she has not developed any complication or recurrence, off laxatives and is on regular follow up since then.

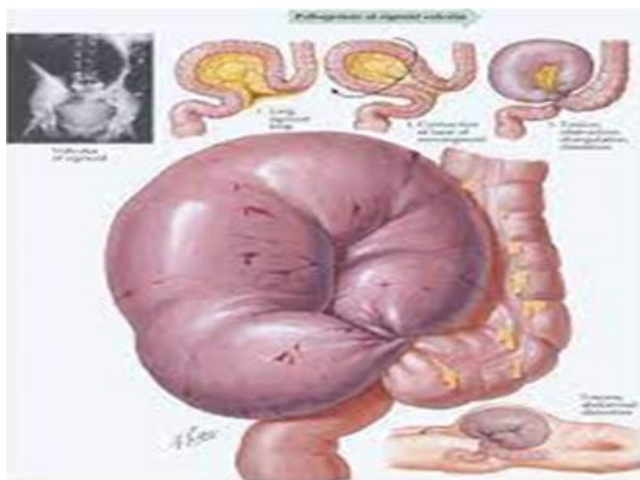


Figure 1: X - ray showing Frimann Dahl sign/bent inner tube sign

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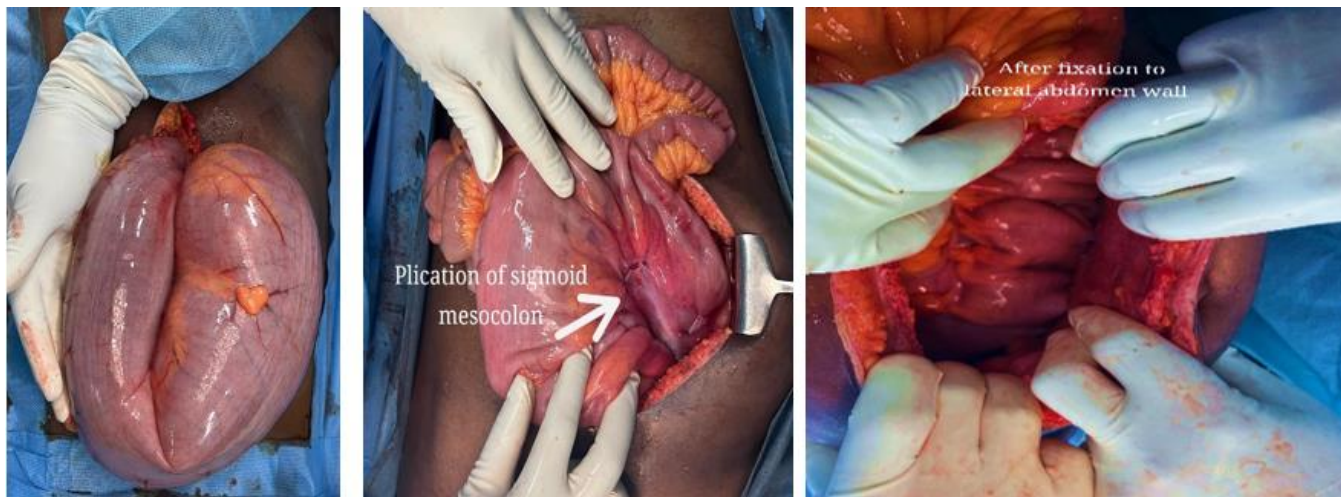


Figure 2: Intra - op findings a) Sigmoid volvulus on table b) Plication of the sigmoid mesocolon c) After fixation of stretched mesocolon and Toldt's fascia, above to lateral abdomen, below to the pelvic brim

3. Clinical Discussion

Redundant sigmoid with long mesentery being the risk factors for sigmoid volvulus, definitive treatment for viable sigmoid colon volvulus revolved around primary resection and anastomosis in young patients to prevent recurrence [1]. The anatomical factors leading to sigmoid volvulus include a long sigmoid colon with narrow mesenteric attachment. It is hypothesized that chronic faecal overloading from constipation causes elongation and dilatation of sigmoid colon predisposing patients to sigmoid volvulus, thereby explaining its incidence in institutionalised patients. In addition, women with capacious pelvis and lax abdominal wall musculature may be protective as it can accommodate and allow untwisting of a floppy sigmoid [2].

Considering these factors, an anatomical alteration by augmented meso - sigmoidopexy (following per anal decompression & de - torsion of the volvulus in an uncomplicated volvulus) could give us an opportunity to treat young patients by doing a less morbid procedure. What we did here was, shortening the stretched out lateral peritoneal fold of Toldt with a continuous suture, plication of the anterior and posterior leaflets of sigmoid colon parallel to the sigmoid vessels without disturbing the vascular arcade; thereby

shortening the length of mesentery & broadening the base. By fixation of the sigmoid to lateral abdominal wall from white line of Toldt to the pelvic brim, the sigmoid colon straightens out. According to literature, meso sigmoidoplasty involved ligation of the sigmoid vessels except the first branch to sigmoid and the peripheral vascular arcade [3, 7, 8, 9, 10]. What we performed is a modification of the above technique, without potential risks of compromising the vascular supply of sigmoid colon, thereby necrosis, recurrence and re laparotomy. Along with this, we augmented the sigmoidopexy by fixing the colon above and below the volvulus segment to the lateral abdominal wall and pelvic brim accordingly.

Other options for non - perforated, uncomplicated sigmoid volvulus would be endoscopic de torsion (84% recurrence with de - torsion alone), surgical resection during index admission - sigmoid colectomy with colorectal anastomosis, non resectional procedures include operative detorsion alone, detorsion with intra peritoneal or extraperitoneal fixation (sigmoidopexy), tailoring of sigmoid mesentery to broaden the base and prevent torsion (mesosigmoidopexy), percutaneous endoscopic colostomy, percutaneous endoscopic sigmoidopexy who are non surgical candidates with recurrent volvulus [4, 8, 9, 10].

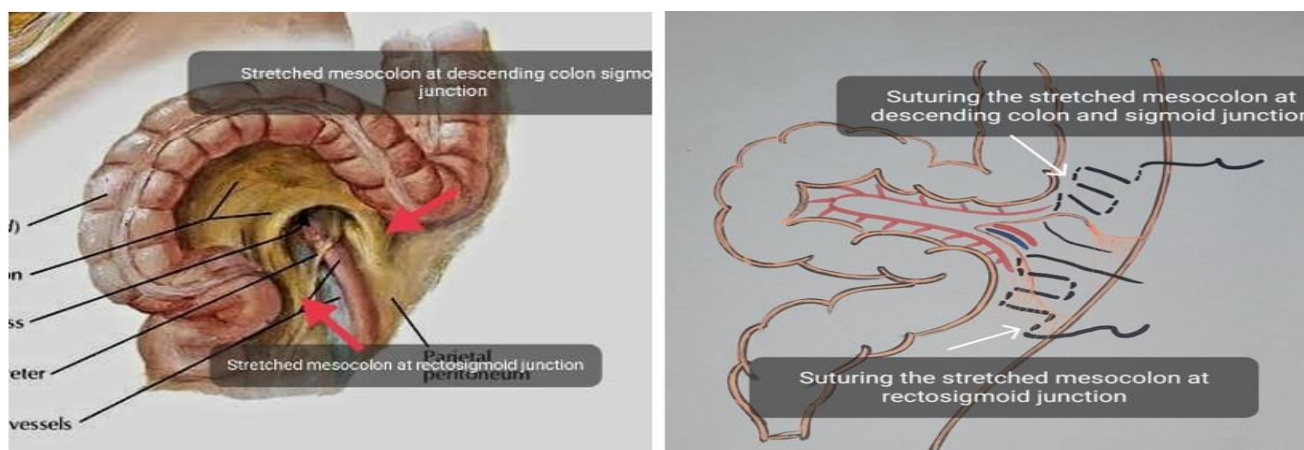


Figure 3: Stretched mesocolon at descending colon and sigmoid junction and rectosigmoid junction which was addressed in augmented mesosigmoidopexy

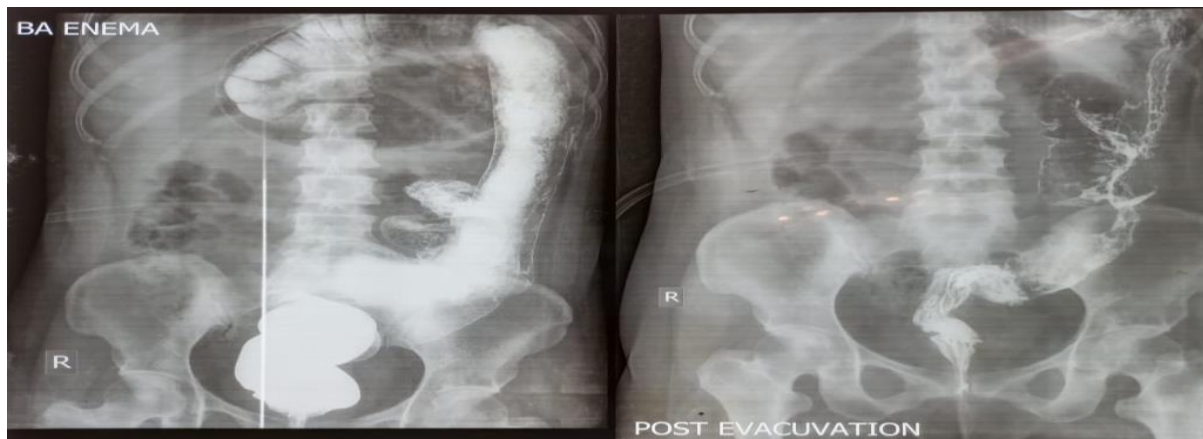


Figure 4: Post operative Barium enema of our patient showing almost normal sigmoid colon anatomy.

4. Conclusion

Augmented Mesosigmoidopexy confers anatomic alterations to support that it has less chances of recurrence when performed in young patients. It can be a suitable alternative for non-gangrenous sigmoid volvulus as it has the advantages of less procedure duration, less risk of recurrence & avoids the possible complications of anastomotic leak.

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