

Chronic Constipation Leading to Sigmoid Colon Volvulus in an Adolescent

Saeed Alhindi, MD, CABS, FRCSI* Manal D. Shihadeh, MD, FAAP, ABP**

We report a case of one of the rare complications of constipation in an adolescent. The patient presented with acute abdominal symptoms and the radiographic images revealed a dilated twisted sigmoid colon. Rectal tube reduction was successful and subsequently, the patient underwent sigmoidectomy and uneventful recovery.

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Constipation is very common in children^{1,2}. The estimated prevalence of functional constipation in children is 4% to 36%^{1,2}. The complaint of constipation accounts for 3% of children visits to primary physicians and 25% of visits to pediatric gastroenterologist^{1,2}. In spite of its prevalence, it rarely causes serious complications in children, such as sigmoid colon volvulus³. The volvulus of the sigmoid colon is believed to be caused by a twist of the mesentery of the redundant colon³. An abdominal radiograph is helpful in diagnosing the presence of sigmoid volvulus. There are a few specific radiographic signs for sigmoid volvulus, including the dilated ahaustral loops. Rectal tube reduction is very successful in reducing sigmoid volvulus; however, ultimately, most patients require sigmoidectomy^{4,5}.

The aim of this report is to present a rare case of sigmoid volvulus in a young female due to chronic constipation.

THE CASE

The patient was a healthy thirteen-year-old female adolescent, who had a long history of chronic constipation and was occasionally using laxatives. As a newborn, she did not have delayed passage of meconium. She presented to the emergency room with a three-day history of severe abdominal pain, abdominal distension and bilious vomiting. On examination, her abdomen was distended and tender. Rectal examination revealed an empty rectum. The total white blood cell (WBC) count was slightly elevated at 10,000 with 75% polymorphonucleocytes. The abdominal X-ray revealed a severely dilated sigmoid colon suggestive of volvulus. The patient had a contrast enema study, which revealed a cut-off point of obstruction at the sigmoid colon, see figures 1 (A and B). The volvulus was reduced via a rectal tube. Subsequently, she had an elective sigmoidectomy and primary re-anastomosis. The rectal biopsy did not show evidence of Hirschsprung's disease. The patient was discharged in good general condition on the seventh postoperative day.



Figure 1 (A): Abdominal Radiograph Showing a Large, Dilated Loop of Ahaustral Colon, the Lower End Pointing to Pelvis with Absent Rectal Gas. The Inner Wall of the Dilated Loop is Thick While the Outer is Thin “Coffee Bean” Sign, Indicating Dilatation of the Sigmoid Colon



Figure 1 (B): Contrast Enema for the Same Patient Shows Tapering of the Sigmoid Colon at the Obstruction Site – “Bird Beak Sign”

* Assistant Professor
Senior Consultant Pediatric Surgeon
** Consultant Pediatrician
Department of Pediatrics
Salmaniya Medical Complex
P.O. Box 12, Manama
The Kingdom of Bahrain
E-mail: sjalhindi@gmail.com, manalshihadeh@hotmail.com

DISCUSSION

Sigmoid volvulus is the third most common cause of large intestinal obstruction in adults; however, it is very rare in children^{3,5-11}. There are few cases of sigmoid volvulus reported in children in the literature. It has been mostly observed in cases of chronic constipation, mental retardation and myopathy⁵. In chronic constipation, the redundant sigmoid colon twists around its narrow and elongated mesentery³. Hirschsprung disease should be considered if dealing with sigmoid volvulus⁶. Zeng et al in his review of literature encountered 23 cases of sigmoid volvulus in both children and adults, which were the result of Hirschsprung's disease⁶. Rectal biopsy should be taken before the definite resection procedure whenever Hirschsprung's is suspected clinically or radiographically⁸. The acute management of sigmoid volvulus in non perforated colon involves an initial non-surgical detorsion followed by an elective sigmoidectomy, while surgery is the first approach for sigmoid volvulus with perforation⁷.

Colinet et al reviewed children who had sigmoid volvulus managed by exsufflation as the first-line treatment; the majority required sigmoidectomy to prevent recurrence³. Ifversen et al conducted a retrospective study of patients who were diagnosed with sigmoid volvulus between 1996 and 2011 and found that sigmoidectomy reduces mortality and increases long term survival⁴.

CONCLUSION

Although constipation is a common encountered problem among children, it rarely results in sigmoid volvulus. This complication should be considered whenever faced with acute abdomen in a chronically constipated child. The radiographic signs for sigmoid volvulus are very distinct and specific. In spite of the fact that the non-surgical reduction of sigmoid volvulus is a successful first-line management, most of the patients would ultimately require sigmoidectomy.

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