

Case Report

Case Report Midgut Volvulus in 11 Years Old Girl with Chronic Abdominal Pain

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Abstract

Midgut volvulus is a condition in which the intestine has become twisted as a result of malrotation of the intestine during fetal development. Older children with malrotation may manifest a failure to thrive, chronic recurrent abdominal pain, malabsorption, or other vague presentations. The older the child, the less clear is the clinical presentation. Nonrotation of the intestine may be asymptomatic and is an incidental finding on upper GI series performed for other reasons.

In our case 11 years old girl with chronic abdominal pain from 2 years ago so after evaluation the patient abdominal CT was done and the view of whirlpool sign was saw then surgery was done without any complication.

Introduction

In normal rotation, the third portion of the Duodenum (D3) lies between the Superior Mesenteric Artery (SMA) and the aorta in the retroperitoneal space. This anatomic relationship can be assessed on CT and US. The lateral position during fluoroscopic evaluation helps assess for normal retroperitoneal positioning of the second through fourth portions of the duodenum. An abnormal anterior course of the duodenum at the most caudal extent represents the duodenum leaving the retroperitoneum. The relationship of the duodenum to the arteries cannot be directly assessed by fluoroscopic examination [1-5].

The position of the D3 segment behind the superior mesenteric artery in the retroperitoneum is reported to help exclude malrotation. The relationship between the superior mesenteric vein and artery is also important in the assessment for malrotation and volvulus. Normally, the superior mesenteric vein lies to the right of the superior mesenteric artery at the level of the confluence of the Superior Mesenteric Vein (SMV) and Portal Vein. This relationship can be readily assessed by ultrasonography. Reversal of this relationship may suggest malrotation, and correlation with patient presentation and upper GI series is warranted. Conversely, normal orientation of these vessels does not exclude malrotation. In Taylor's series of 38 surgically proven cases of malrotation, 11 patients had a normal SMV/SMA relationship. If clinical suspicion

is high, further evaluation should be undertaken with an upper GI series [4-8].

In neonates, malrotation with midgut volvulus classically presents with bilious vomiting and, as the radiograph below demonstrates, high intestinal obstruction. While most neonates with bilious vomiting do not have midgut volvulus, this diagnosis must be excluded [6-12]. Older children with malrotation may manifest a failure to thrive, chronic recurrent abdominal pain, malabsorption, or other vague presentations. The older the child, the less clear is the clinical presentation. Nonrotation of the intestine may be asymptomatic and is an incidental finding on upper GI series performed for other reasons [5-9]. The diagnostic test of choice in a child with possible malrotation, with or without midgut volvulus, is an upper GI series. CT, while not the preferred examination for evaluation of suspected malrotation, can detect abnormal bowel rotation and volvulus and may be performed in the clinical setting of abdominal pain [4,5,6].

Case Report

A 11 years old girl with chronic abdominal pain from 2 years ago admit in our hospital. The pain was crampy in whole the abdomen. The defecation was normal and no fever, vomiting, rash, organomegaly, bleeding and urinary problem. The lab test that the patient was done shows no abnormality so in our hospital CBC

and Biochemistry lab test were normal endoscopy and colonoscopy was done and in endoscopy had mild gastritis so because the patient had abdominal pain and crying from pain the spiral abdominal CT with contrast IV and PO was done and in CT the whirlpool sign was seen that significant for midgut volvulus (Figure 1) after diagnosis, the surgery was done without any problem.

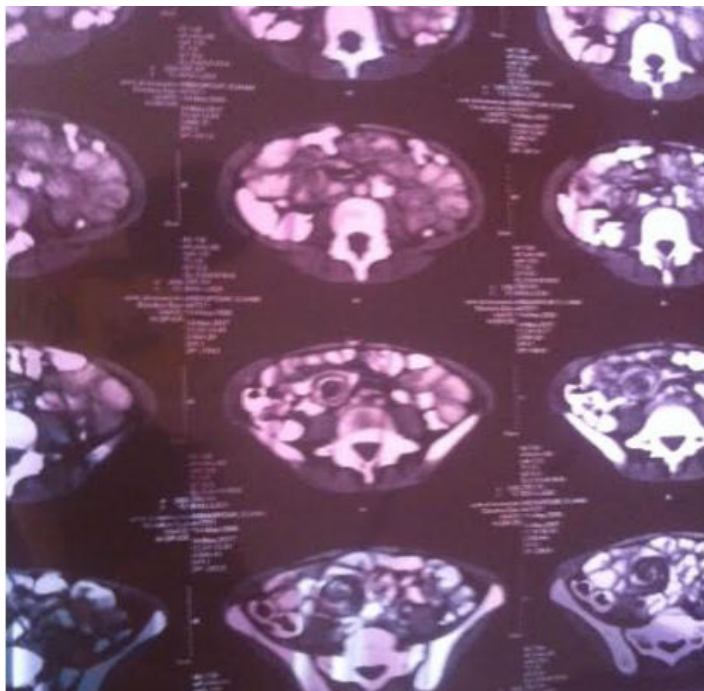


Figure 1: She remains asymptomatic 4 months after surgery.

Discussion

A volvulus is a complete twisting of a loop of intestine around its mesenteric attachment site. This can occur at various locations of the Gastrointestinal (GI) Tract, including the stomach, small intestine, caecum, transverse colon and sigmoid colon. Midgut malrotation refers to twisting of the entire midgut about the axis of the Superior Mesenteric Artery (SMA) [2-6]. Most cases of volvulus associated with malrotation occur in infants and young children. The incidence of malrotation-associated volvulus decreases with age [10-12].

Rarely, volvulus can occur in utero and even more rarely can lead to intrauterine death. Abdominal examination may be normal in the early stages or may show distension. In midgut volvulus associated with malrotation, the entire midgut from the proximal jejunum to the proximal colon may twist around the mesenteric base. Volvulus may lead to intestinal necrosis in several hours without surgical treatment. Rapid-onset and bilious vomiting, leading to metabolic acidosis, lactatemia, oliguria, hypotension and shock with advancing ischemia [3-7].

In midgut volvulus, the classic radiographic finding is a partial duodenal obstruction (dilation of both stomach and proxi-

mal duodenum, with a small amount of distal bowel gas). This is known as the 'Double Bubble' sign. Complete obstruction of the duodenum may also be found; less frequently, a gasless abdomen, ileus or distal small bowel obstruction with multiple dilated loops and air-fluid levels. These are ominous signs. Ultrasound may reveal a midline abdominal mass in suspected volvulus. Ultrasound and CT scanning can help to confirm malrotation by identifying the position of the mesenteric vessels. CT scan may reveal 'The Coffee Bean' in sigmoid volvulus. The 'Whirlpool Sign' on color Doppler may show a whirlpool pattern of flow within the superior mesenteric vein, indicating malrotation with volvulus [7-13]. Treatment of midgut volvulus is surgery.

References

1. Hiten Kumar PN, Shah D, Priyanka CB (2012) Unusual presentation of midgut malrotation with incidental nutcracker syndrome in adulthood: case report and literature review. *BMJ Case Rep*.
2. Soker G, Yilmaz C, Karateke F, Gülek B (2014) An unexpected cause of small bowel obstruction in an adult patient: midgut volvulus. *BMJ Case Rep*.
3. Haak BW, Bodewitz ST, Kuijper CF, de Widt-Levert LM (2014) Intestinal malrotation and volvulus in adult life. *Int J Surg Case Rep* 5: 259-261.
4. Sheikh F, Balarajah V, Ayantunde AA (2013) Recurrent intestinal volvulus in midgut malrotation causing acute bowel obstruction: A case report. *World J Gastrointest Surg* 5: 43-46.
5. McCollough M and Sharieff GQ (2003) Abdominal surgical emergencies in infants and young children. *Emerg Med Clin North Am* 21: 909-935.
6. Uba AF, Chirdan LB, Edino ST (2005) Intestinal malrotation: presentation in the older child. *Niger J Med* 14: 23-26.
7. Fu T, Tong WD, He YJ, Wen YY, Luo DL, et al. (2007) Surgical management of intestinal malrotation in adults. *World J Surg* 31: 1797-1803.
8. Steffensen TS, Gilbert-Barness E, DeStefano KA, Kontopoulos EV (2008) Midgut volvulus causing fetal demise in utero. *Fetal Pediatr Pathol* 27: 223-231.
9. Ameh EA and Nmadu PT (2000) Intestinal volvulus: etiology, morbidity, and mortality in Nigerian children. *Pediatr Surg Int* 16: 50-52.
10. Atamanalp SS, Yildiran MI, Basoglu M, Kantarci M, Yilmaz I (2004) Sigmoid colon volvulus in children: review of 19 cases. *Pediatr Surg Int* 20: 492-495.
11. Tackett JJ, Muise ED, Cowles RA (2014) Malrotation: Current strategies navigating the radiologic diagnosis of a surgical emergency. *World J Radiol* 6: 730-736.
12. Paslawski M, Gwizdak J, Zlomaniec J (2004) The diagnostic value of different imaging modalities in evaluation of bowel obstruction. *Ann Univ Mariae Curie Skłodowska [Med]* 59: 268-274.
13. Oh SK, Han BK, Levin TL, Murphy R, Blitman NM, et al. (2008) Gastric volvulus in children: the twists and turns of an unusual entity. *Pediatr Radiol* 38: 297-304.