

A 2-Year-Old Girl with Intermittent Vomiting

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SECTION 2 – ANSWER

Case

This is the case of a 2-year-old female that presented with a 2-week history of intermittent nonbilious vomiting and diffuse abdominal pain. She had a history of gastroschisis repair as a neonate which involved an initial surgical reduction shortly after birth, returning as much bowel as possible. The remaining

eviscerated bowel was placed in a silo for 5 days, after which the wound site and wall defect were surgically closed.

Figure 1 is a radiograph captured during a contrast swallow fluoroscopy procedure, Figures 2-3 [Video 1] are transverse sonograms of the epigastric region.

WHAT IS YOUR DIAGNOSIS?

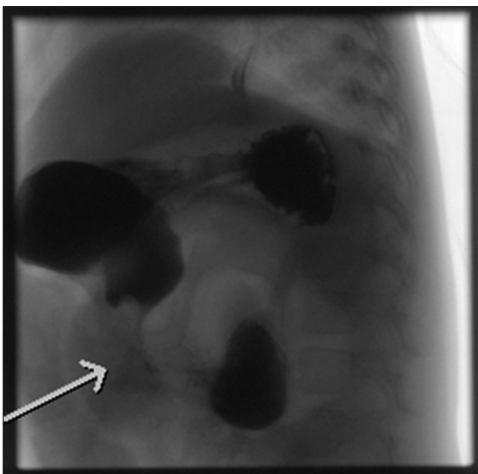


Figure 1: Contrast swallow radiograph

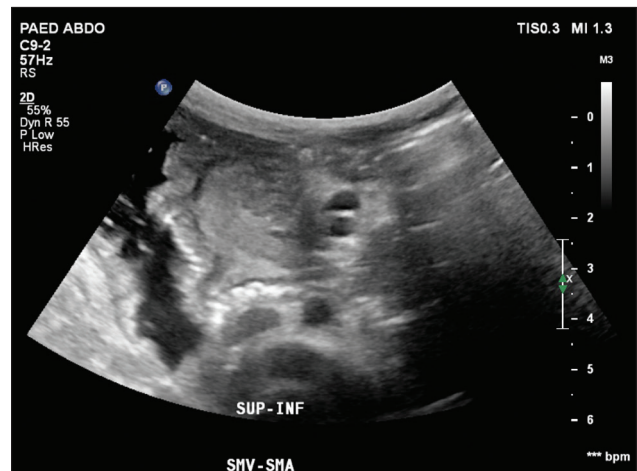


Figure 2: A transverse sonogram of the epigastric region across the patient's midline

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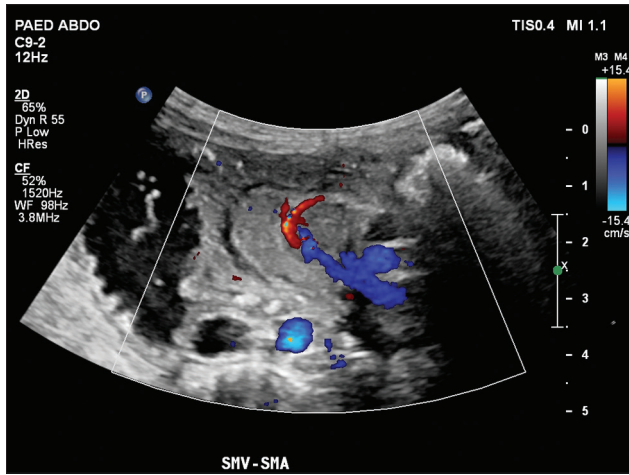


Figure 3: A transverse sonogram of the epigastric region across the patient's midline with color Doppler

INTERPRETATION

Abdominal ultrasound was ordered (Philips Epiq 7G, Bothwell, USA), which revealed the superior mesenteric vein rotating around superior mesenteric arterial axis, suggestive of the whirlpool sign and midgut volvulus [Figures 2-3].^[1] Upper gastrointestinal tract contrast fluoroscopy was requested; this revealed dilated proximal jejunum and distal beaking, with the passage of a small amount of contrast [Figure 1]. Laparotomy, adhesiolysis, and Ladd's procedure were performed. The distended jejunal segment was resected and anastomosed, with the remaining bowel left in a nonrotated position. The patient was discharged and remains asymptomatic.

DISCUSSION

In cases of gastroschisis, bowel remains in a nonrotated position due to initial interruption of embryological rotation.^[2] The eviscerated bowel is exposed to amniotic fluid antenatally, and when combined with surgical handling during reduction after birth, adhesions can commonly form.^[3,4] These adhesions can sometimes result in bowel obstruction, usually within 2 years, and as late as 25-year postsurgery.^[5] In gastroschisis, antenatal injury to the eviscerated bowel is thought to be

caused by chemical injury to the peritoneum due to fetal urine and meconium in the amniotic fluid or potentially by vascular congestion at the narrow abdominal wall defect.^[6] Adhesions are thought to anchor the bowel, reducing the subsequent risk of volvulus. Omphalocele in comparison lacks this antenatal sequelae of bowel injury with an intact sac and broader abdominal wall defect and has a 4-fold greater risk of volvulus.^[3] While nonrotation and malrotation can be asymptomatic, midgut volvulus is a life-threatening emergency due to mechanical obstruction and vascular compromise of the affected bowel.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his/her consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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