

## Midgut volvulus in a 4-year-old male

Brian T. Kloss · Rahul Patel · Jennifer Mackey

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A 4 year-old boy presented with sudden, intense, and constant abdominal pain that awoke him from sleep. He had experienced no nausea or vomiting, and stooling had been regular. Vital signs were blood pressure: 133/87, heart rate: 120, respiratory rate: 28, SaO<sub>2</sub>: 99%, and temperature: 35.7. On physical exam the patient was writhing in pain with a mildly distended abdomen, with bowel sounds present and guaiac negative stool. Laboratory studies revealed a white blood cell count of 28,000. Abdominal x-ray revealed findings compatible with small bowel obstruction (Figs. 1, 2, 3), and subsequent upper GI series raised suspicion for midgut volvulus (Figs. 4, 5). The patient received IV fluids and morphine, and was emergently taken to the operating room.

Midgut volvulus is a life-threatening complication caused by small bowel malrotation that leads to obstruction and ischemia. About 75% of all midgut volvulus cases occur within the 1st year of life, the majority of which are in the 1st month [1]. The classic presentation is a newborn infant with bilious vomiting. Older children tend to present with a history of intermittent vomiting, chronic diarrhea, and vague abdominal pain, often leading to multiple hospital admissions with signs of malnourishment [2].

Abdominal x-ray can be useful in identifying small bowel obstruction. Upper gastrointestinal series is the diagnostic tool of choice, with the “corkscrew sign” often identified as an indicator of midgut volvulus [3].

Midgut volvulus is a surgical emergency that can quickly lead to bowel necrosis, sepsis, and death. Prompt diagnosis is therefore crucial for these patients. The treatment of choice is Ladd’s procedure.

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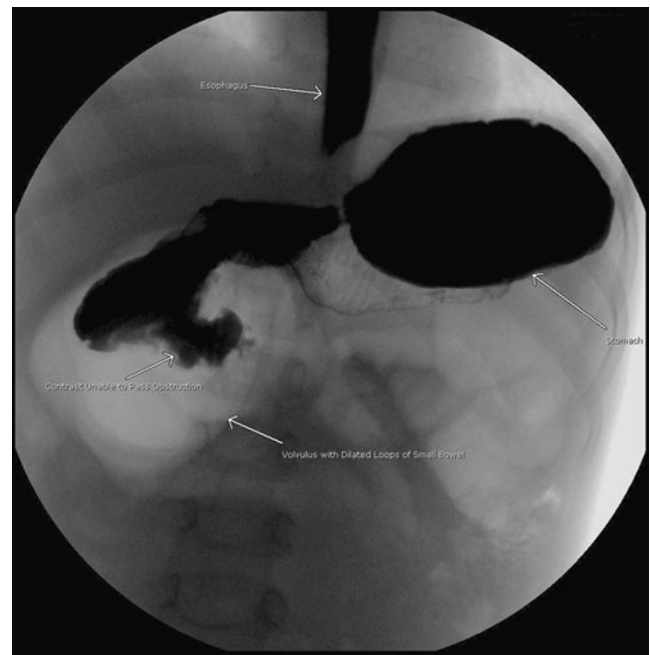


**Fig. 1** Supine abdomen showing small bowel obstruction

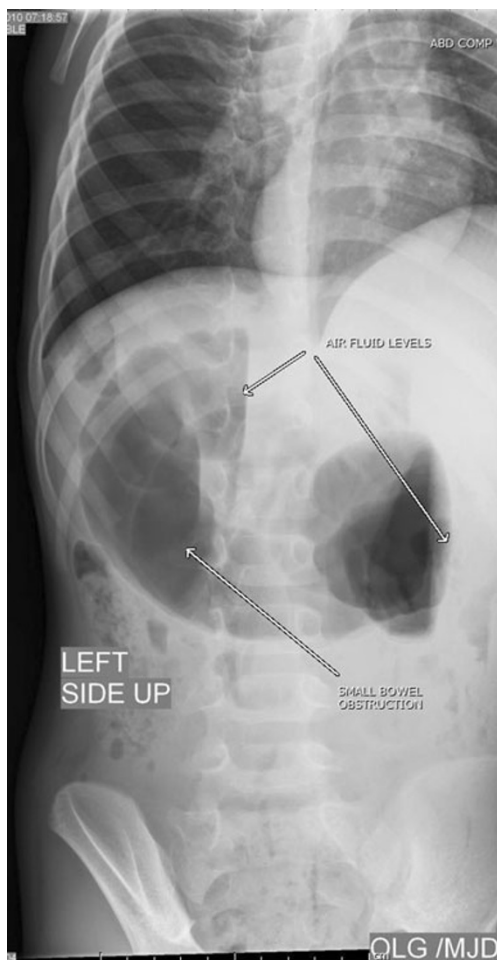
B. T. Kloss (✉) · R. Patel · J. Mackey  
Department of Emergency Medicine,  
SUNY Upstate Medical University,  
550 East Genesee Street,  
Syracuse, NY 13202, USA  
e-mail: klossb@upstate.edu



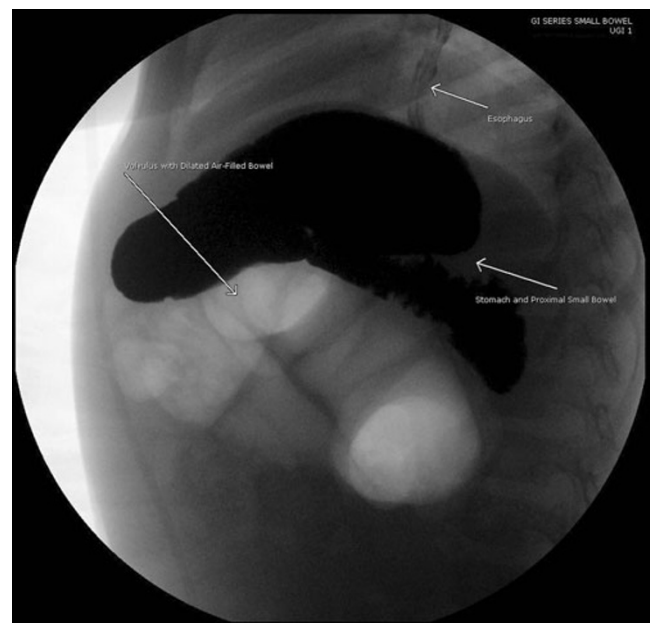
**Fig. 2** Erect abdomen showing air-fluid levels



**Fig. 4** Anteroposterior upper GI image showing volvulus



**Fig. 3** Decubitus abdomen showing air-fluid levels



**Fig. 5** Lateral upper GI image showing volvulus

## References

- Peterson CM, Anderson JS, Hara AK et al (2009) Volvulus of the gastrointestinal tract: appearances at multimodality imaging. *Radiographics* 29(5):1281–1293
- Spigland N, Brandt ML, Yazbeck S (1990) Malrotation presenting beyond the neonatal period. *J Pediatr Surg* 25:1139–1142
- Lampl B, Levin TL, Berdon WE, Cowles RA (2009) Malrotation and midgut volvulus: a historical review and current controversies in diagnosis and management. *39:359–366*