

Answer

Midgut Volvulus

At laparotomy, 2 L of ascites was suctioned out and the entire intraperitoneal small bowel was found to be ischemic. Volvulus of the small-bowel mesentery was the etiologic factor (the 71-year-old patient had a congenital malrotation). The small-bowel mesentery was detorsed in a counterclockwise fashion, resulting in an immediate change from ischemic (purple) bowel to a normal appearance with almost immediate restoration of peristalsis. Adhesiolysis was performed on a band connecting a proximal loop of jejunum, restoring its blood supply. Lysis of bands lateral to the cecum and ascending colon was undertaken. The retrocecal appendix and base of the cecum were above the level of the umbilicus; appendectomy and cecopexy were performed.

Small-bowel mesenteric volvulus in patients with congenital malrotation is a rare cause of intestinal ischemia in adults. Midgut volvulus is most commonly seen in neonates, and it is a surgical emergency. Embryologically, malrotation occurs when the fetal midgut returns to the abdominal cavity at about 10 to 12 weeks; normally, there is a 270° counterclockwise rotation, but this is arrested at varying degrees in malrotation. Ladd bands can occur across the duodenum, sometimes resulting in obstruction.¹

On computed tomographic scan, a swirl pattern is often seen. In Figure 1, tissue is seen rotating around the superior mesenteric artery. In Figure 2, a twisting of the small bowel mesentery is demonstrated. Because the location of the appendix is abnormal, appendectomy is performed to prevent future diagnostic uncertainty.

In this patient, there is a possibility that her diet contributed to her condition. Duke and Yar² reported that there was a “striking increase in the frequency” of primary small-bowel volvulus in Afghani Muslim men during Ramadan. This was hypothesized to be secondary to high fiber intake following fasting.

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Additional Contributions: Imaging was reviewed with George Galanis, MD, and the intraoperative photograph was taken by Ken Chapman, RN, Waynesboro Hospital, Waynesboro, Pennsylvania.

REFERENCES

1. Schwartz S. *Principles of Surgery*. 7th ed. New York, NY: McGraw-Hill; 1999: 1730-1732.
2. Duke JH Jr, Yar MS. Primary small bowel volvulus: cause and management. *Arch Surg*. 1977;112(6):685-688.

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