CLINICAL VISTAS

Nonrotation of the intestine

A 20-year-old man presented to our department with complaints of abdominal pain over his epigastrium and around his umbilicus that had lasted for several years. He reported vomiting for 2 hours after each meal in the 2 days before presentation. Results of plain abdominal radiography, ultrasonography and upper gastrointestinal endoscopy were normal. An upper gastrointestinal series showed that he had nonrotation of the intestine including duodenojejunal flexure and that the entire small bowel was on his right side (Figure 1). A computed tomogra-

phy scan of the patient's abdomen showed that the superior mesenteric vein was located on the left of the superior mesenteric artery, which confirmed nonrotation of the intestine (Figure 2, Figure 3). His symptoms resolved with parenteral proton pump inhibitor and antiemetic therapy.

Anomalies of intestinal rotation are most often asymptomatic and are often incidental findings in adults. Nonrotation of the intestine occurs in about 1 in 500 live births and has been described in 0.5% of autopsies.¹ Laxity of the umbilical ring, which allows reduction of

the midgut without rotation during the tenth week of fetal development is a likely cause of nonrotation. In adults, it may present as acute bowel obstruction or as vague intermittent abdominal pain. Early diagnosis can prevent the complications of midgut volvulus and small bowel necrosis. The upper gastrointestinal series remains the standard of reference for the diagnosis of malrotation.²

On a normal supine radiograph, the C-loop crosses the midline and duodenojejunal junction lies to the left of the vertebral pedicles at the level of the duodenal bulb. In patients with nonro-

Figure 1: An image from an upper gastrointestinal series (anterior-posterior view) showing nonrotation of the intestine with duodenojejunal flexure and jejunal loops on the right side of the vertebral bodies (arrow).

Figure 2: A computed tomography scan of the patient's abdomen showing the origin of the superior mesenteric artery (arrow) from the aorta.

Figure 3: A computed tomography scan of the patient's abdomen showing the superior mesenteric vein (arrowhead) on the left of the superior mesenteric artery (arrow).

tation, the small bowel is located predominantly on the right side of the peritoneal cavity and the colon is located on the left side. Ultrasound, computed tomography and magnetic resonance imaging may allow detection of malrotation by showing the superior mesenteric artery and superior mesenteric vein in abnormal positions relative to each other. A superior mesenteric vein located to the left of the superior mesenteric artery suggests malrotation.

It is difficult to determine the risk of

volvulus in a patient with a rotational anomaly. Thus, many surgeons recommend surgery when malrotation is diagnosed, regardless of the patient's age or symptoms.³⁻⁵

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