Whirl sign in small bowel volvulus

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DESCRIPTION

A 43-year-old man without previous abdominal operations came to the hospital due to sudden onset abdominal pain and vomiting. His abdomen was soft. Laboratory data confirmed leukocytosis and severe acidosis (pH 7.16). Abdominal CT revealed a twist of mesentery around the axis of the superior mesenteric artery (figure 1) and poor contrast-enhanced bowel loops (figure 2). Emergent laparotomy showed that the small bowel volvulus had caused bowel necrosis. No malrotation or adhesions were seen. A segmental bowel resection was performed; the patient recovered and was discharged on postoperative day 16.

Small bowel volvulus has been responsible for 1.7% of all intestinal obstructions and is classified into two types. The primary type occurs in an otherwise normal abdominal cavity and is rare in adults, accounting for 10–22% of small bowel volvulus in Western countries, and 30% in Africa and the Middle East.1 The secondary type occurs in the presence of a pre-existing lesion, such as an adhesive band or malrotation.

A ‘whirlpool sign’ in colour Doppler sonography signals the superior mesenteric vein and mesentery have wrapped around the superior mesenteric artery. The sensitivity and specificity of the ‘whirlpool sign’ for midgut volvulus caused by malrotation are 92% and 100%, respectively.2 However, sonography is operator dependent. The CT ‘whirl sign’ has shown a sensitivity of 60% and a specificity of 94%. The OR for the ‘whirl sign’ predicting a small bowel obstruction necessitating surgery was 25.3.3

Both the ‘whirl sign’ in CT and the ‘whirlpool sign’ in sonography indicate early surgical intervention.

Learning points

▸ Keep in mind that small bowel volvulus is a rare but severe condition.
▸ The ‘whirl sign’ and poor contrast-enhanced bowel loops under enhanced abdominal CT indicate a greater necessity for early surgical intervention.

Competing interests None.

Patient consent Obtained.
REFERENCES

