

A twist in the tale – ‘Whirlpool sign’ demonstrated in closed-loop small bowel obstruction

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Abstract

Small bowel volvulus is a rare cause of small bowel obstruction, but must be considered as the likely diagnosis when mesenteric ‘whirlpool sign’ is present on imaging. Peritonism with such imaging findings warrants prompt intervention.

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Key Clinical Message

Small bowel volvulus is a rare cause of small bowel obstruction, but must be considered as the likely diagnosis when mesenteric ‘whirlpool sign’ is present on imaging. Peritonism with such imaging findings warrants prompt intervention.

A 65 year-old female presented to hospital with 3 days of abdominal pain and distension. She had a background of diverticular disease and previous hysterectomy for symptomatic fibroids. Her white-cell-count was 19.5 x 10⁹/L and lactate 3.1mmol/L. Computed tomogram (CT) of the abdomen/pelvis revealed abnormal, oedematous distal small bowel (Figure 1). The mesentery was congested alongside demonstrating the ‘whirlpool sign’ of small bowel volvulus. Small bowel distal to this loop was collapsed whereas proximally the bowel was dilated and fluid-filled. Closed-loop small bowel obstruction was diagnosed secondary to small

bowel volvulus. At laparotomy, there was internal herniation from mesenteric twisting. 100cm of ileum was gangrenous (Figure 2). Resection was performed with stapled side-to-side primary anastomosis. Discharge was at day 10 post-operatively.

Small bowel volvulus is rare in the West, accounting for 1-6% of small bowel obstructions¹. It is predominantly associated with post-surgical adhesions, congenital midgut malrotation and fibrinous bands across the mesentery². Diagnosis is made via CT scan, which will show a ‘whirlpool sign’ with twisting of the small bowel and vessels around its mesentery¹. Whirlpool sign on CT scan indicates an odds ratio of 25.3 with regards to operative intervention². Swift diagnosis and intervention is vital to prevent frank ischaemia.

Author Contributions

Adam O’Connor – initiated idea of writing the case, wrote first draft manuscript and made editing

Rabia Ghani – involved with patient care, edited drafts of manuscript, edited images

Shariq Sabri – senior surgeon overseeing manuscript, made comments on drafts, also involved with patients care in theatre

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Figure Legends Figure 1 – CT scan revealing oedematous ileum with ‘whirlpool sign’ of small bowel mesentery twisting on its arterial axis Figure 2 – Gangrenous ileum as seen at laparotomy intra-operatively *Conflict of Interests* All 3 authors report no conflicts of interest.



