91 year old male presents with acute abdominal pain, nausea and vomiting

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Closed Loop Small Bowel Obstruction
Dilated, C-shaped loop of small bowel

Dilated, congested mesenteric veins.
Apparent tethering of the mesentery to a common geographic location.

Inter-loop edema
Target or Halo sign suggesting ischemia: Bowel wall thickening with mural edema surrounding mucosal hyperemia.
Two transition points located close in space.
Closed Loop Small Bowel Obstruction

- An obstruction in which two points along the course of a bowel are obstructed at a single location thus forming a closed loop.

- Patients present clinically with signs of obstruction: abdominal pain, nausea/vomiting, abdominal distension.

- Most often due to adhesions, a twist of the mesentery, or internal herniation.

- Small bowel equivalent of colonic volvulus.

- High risk of strangulation and bowel infarction with a mortality rate of 10-35% = A SURGICAL EMERGENCY
Closed Loop Small Bowel Obstruction

- Findings on CT:
  - Dilated C-shaped or U-shaped loop of small bowel.
  - Beak sign – tapering of the dilated small bowel loop to decompressed small bowel = a transition point.
  - Two transition points close in space suggesting a single adhesive band or an internal hernia as the etiology.
  - Whirl sign – tightly twisted mesentery.
  - Dilated/congested mesenteric veins associated with the obstructed loop.
Closed Loop Small Bowel Obstruction

• Signs of strangulation/ischemia:
  • Bowel wall thickening/edema.
  • Halo or target appearance of the bowel wall, with a ring of hypo-enhancement surrounding an inner ring of hyper-enhancement on axial cuts, representing hyperemia and hyperemia of the mucosa surrounded by mural edema.
  • Pneumatosis intestinalis – air locules within the bowel wall.
  • Inter-loop edema.
References:

1. Radiopedia


