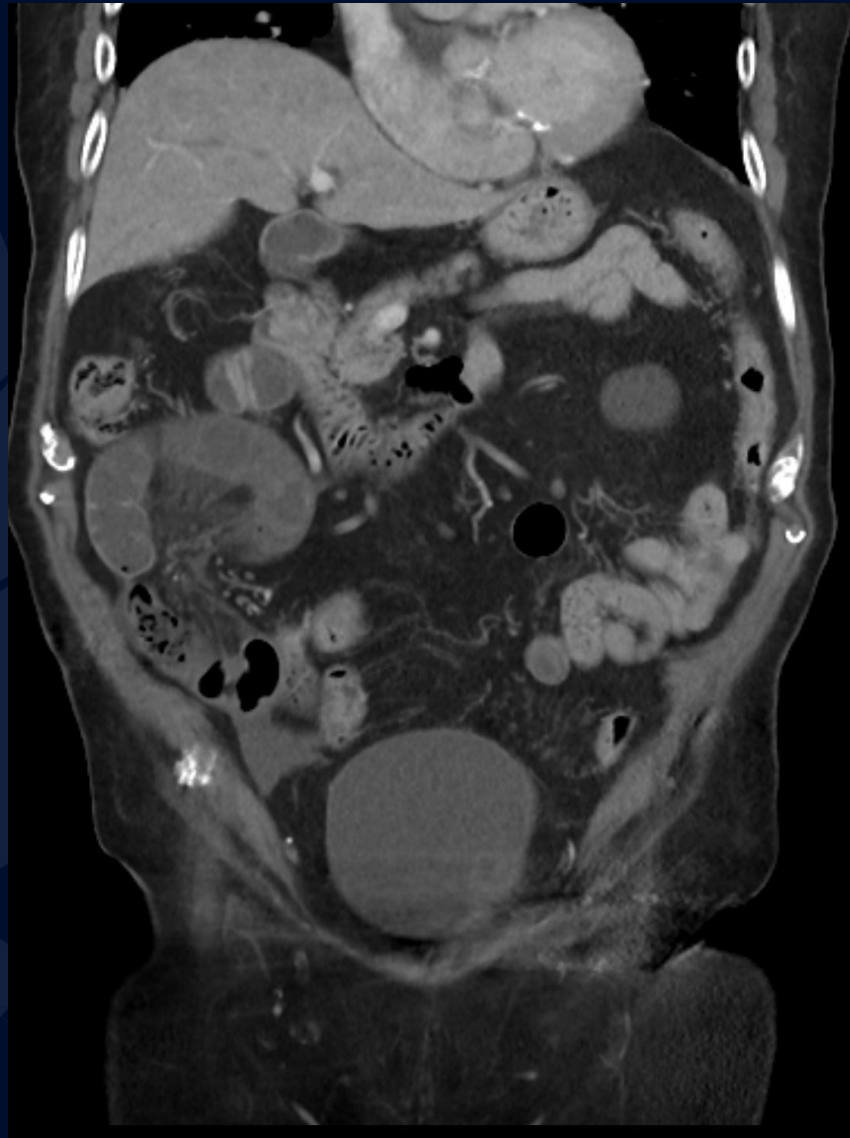


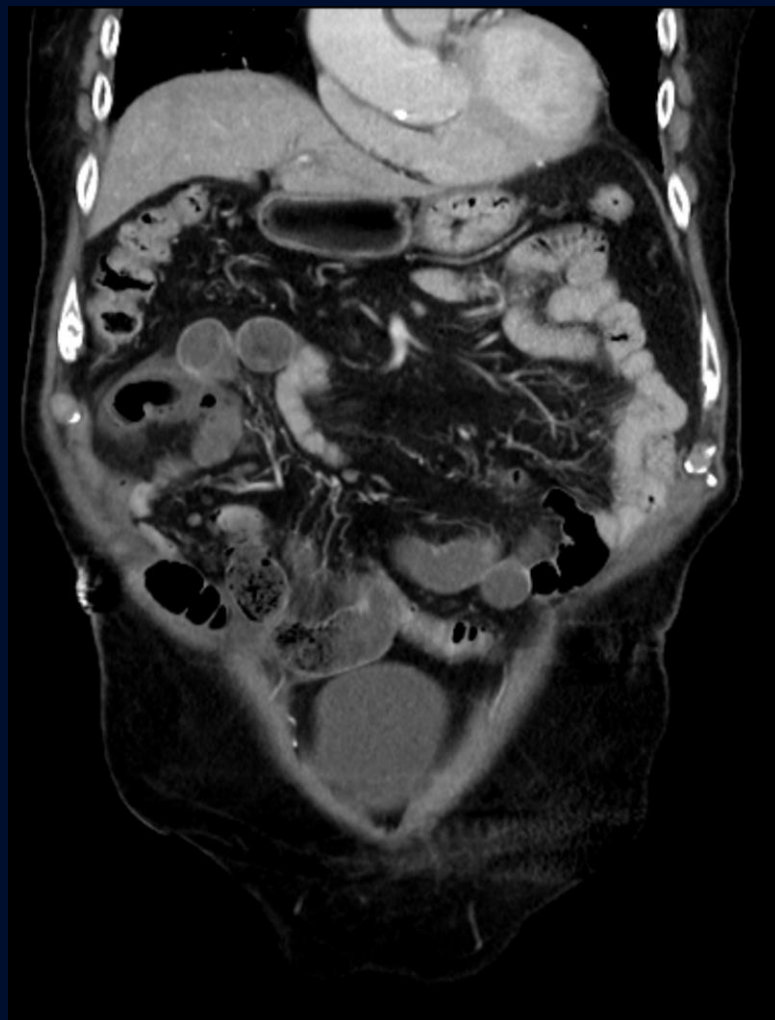
91 year old male presents with acute abdominal pain, nausea and vomiting

Elena G. Violari MD









A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

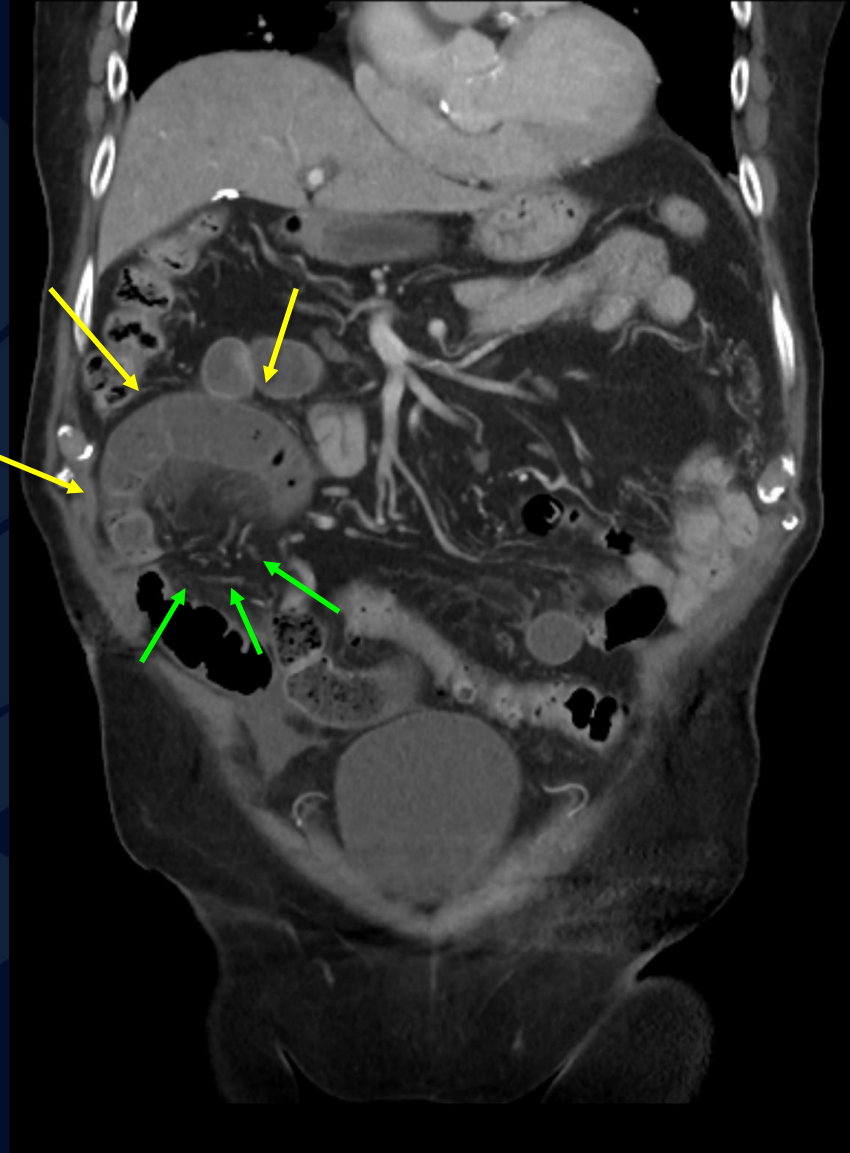
?

# Closed Loop Small Bowel Obstruction

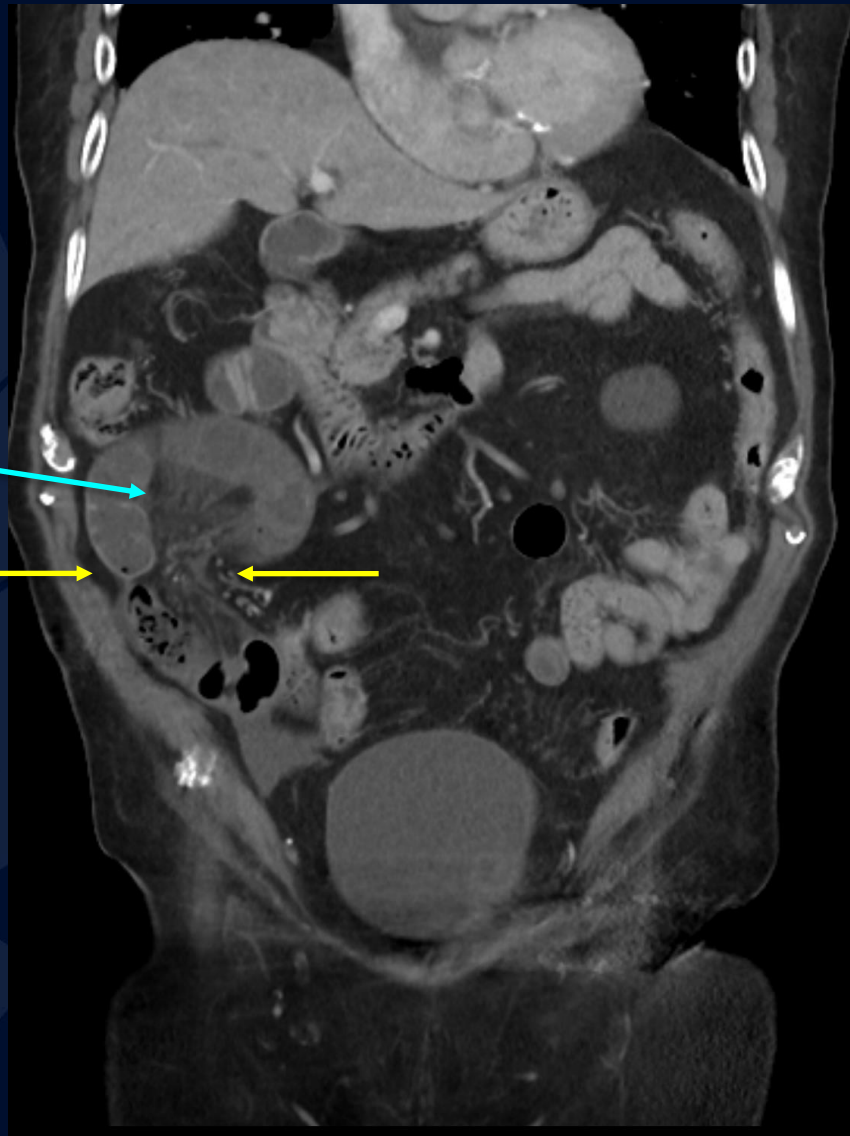


Dilated, C-shaped loop of small bowel

Dilated, congested mesenteric veins.





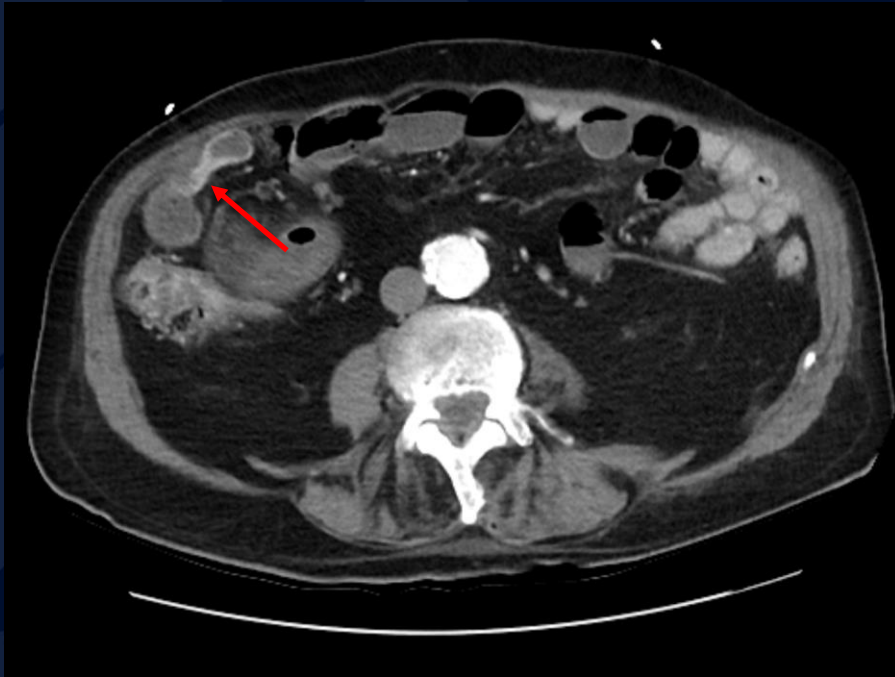


Inter-loop edema

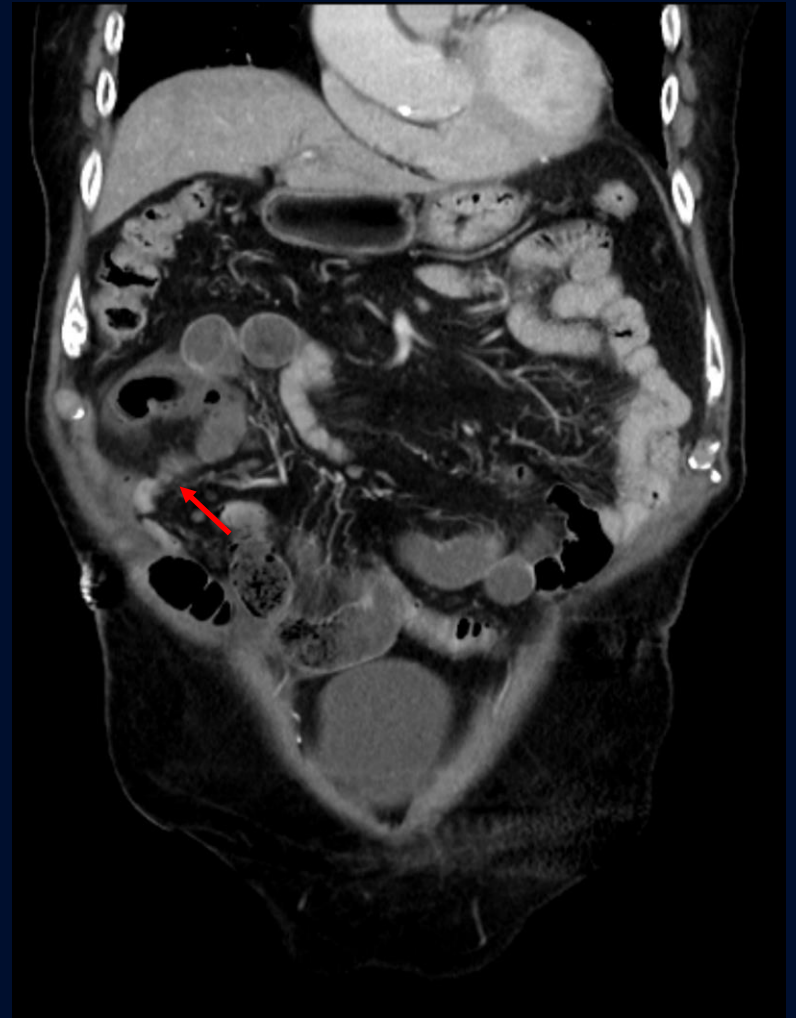
Apparent tethering of the mesentery to a common geographic location.

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:

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4. Elsayes KM, Menias CO, Smullen TL, Platt JF. Closed loop small bowel obstruction: diagnostic patterns by multidetector computed tomography. *Journal of Computer Assisted Tomography*. 2007; 31(5): 697-701.
5. Boudiaf M, Soyer P, Terem C, et al. CT evaluation of small bowel obstruction. *Radiographics*. 2001; 21(3):613-624.