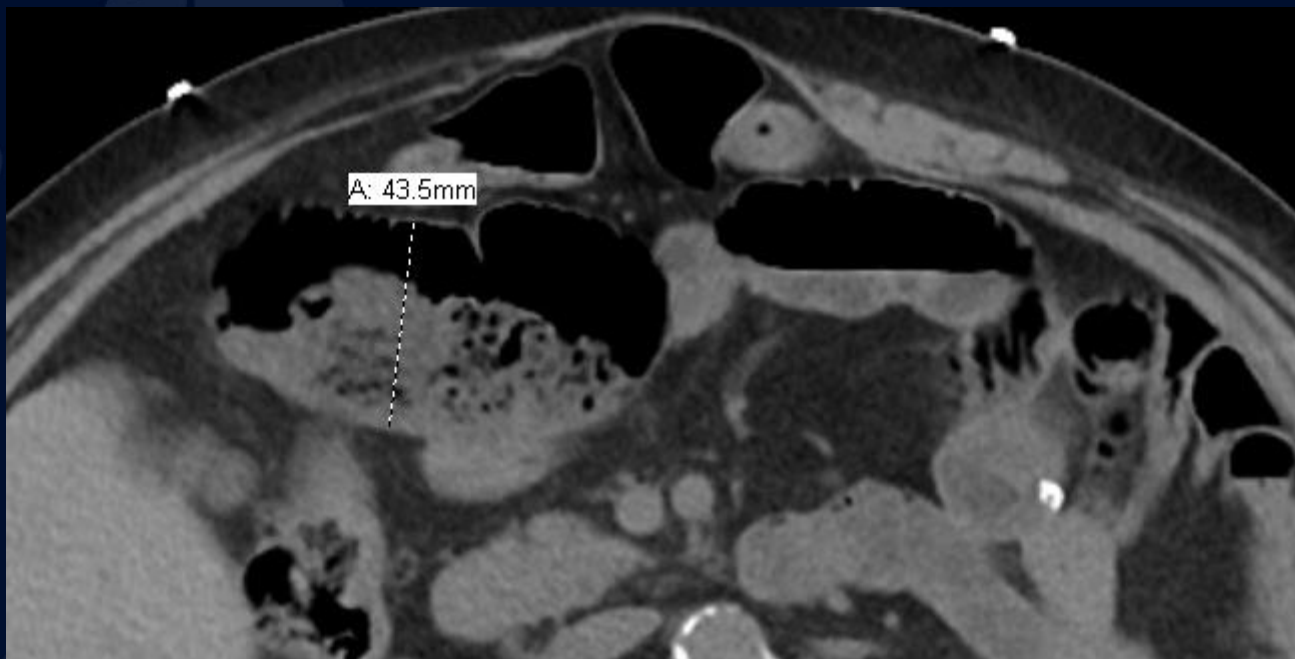
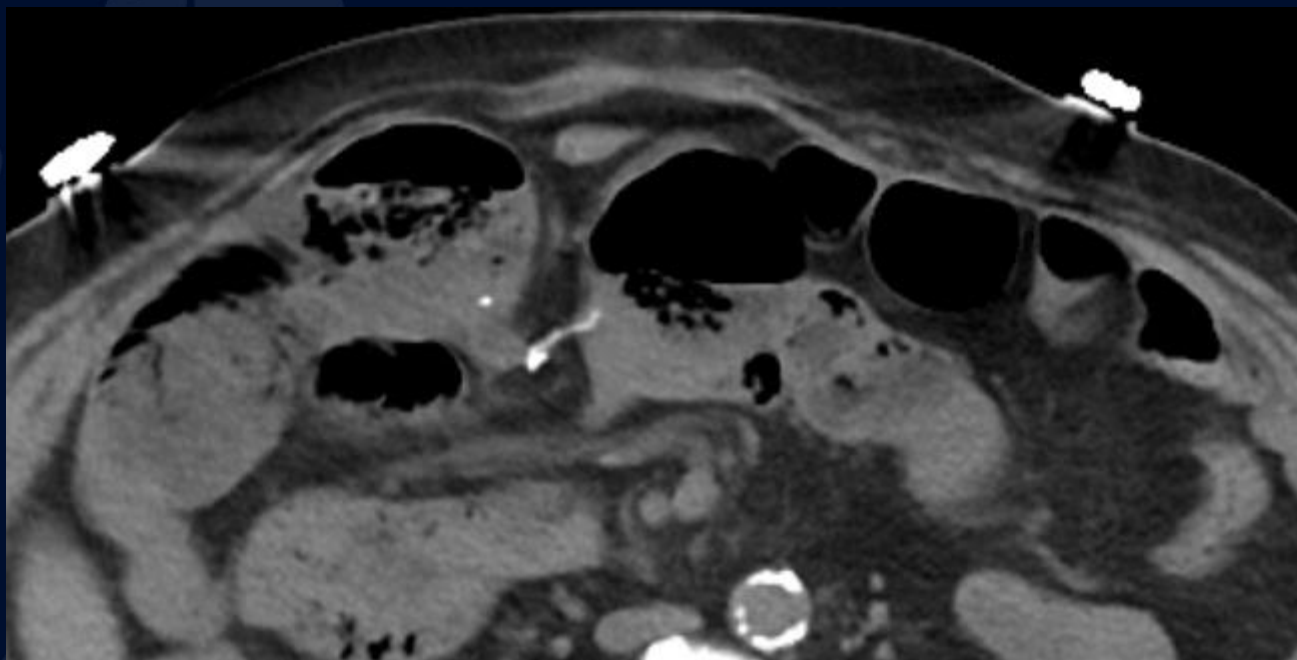
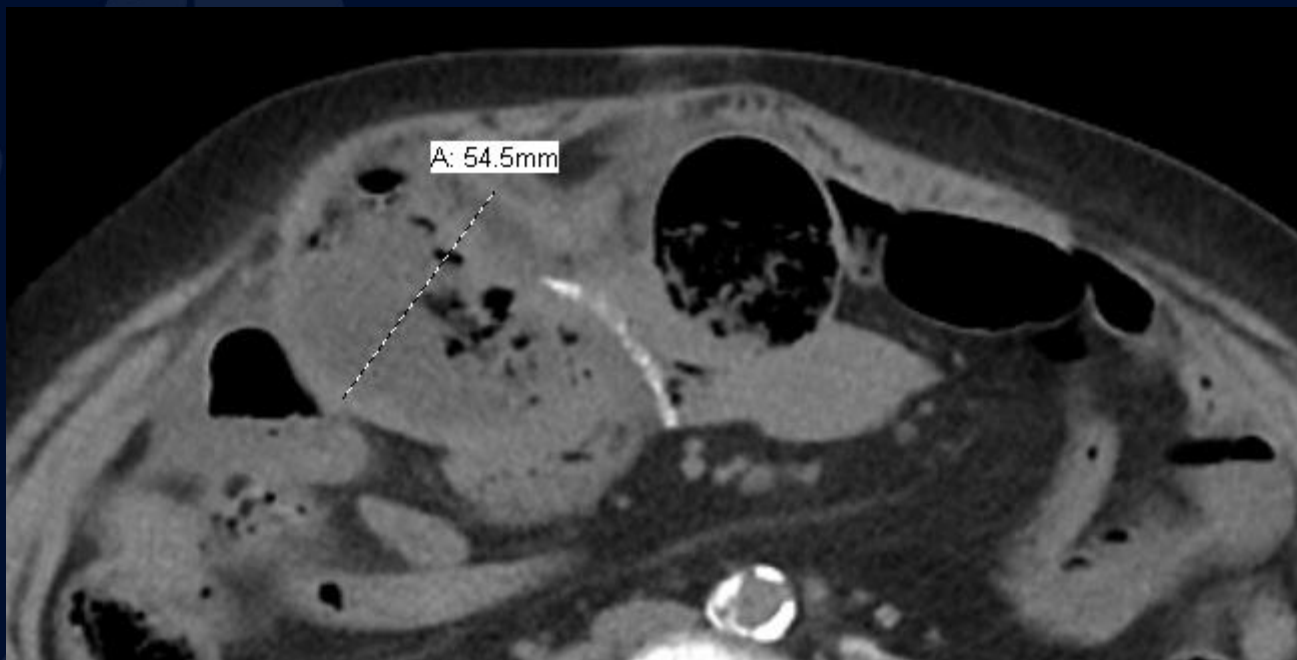


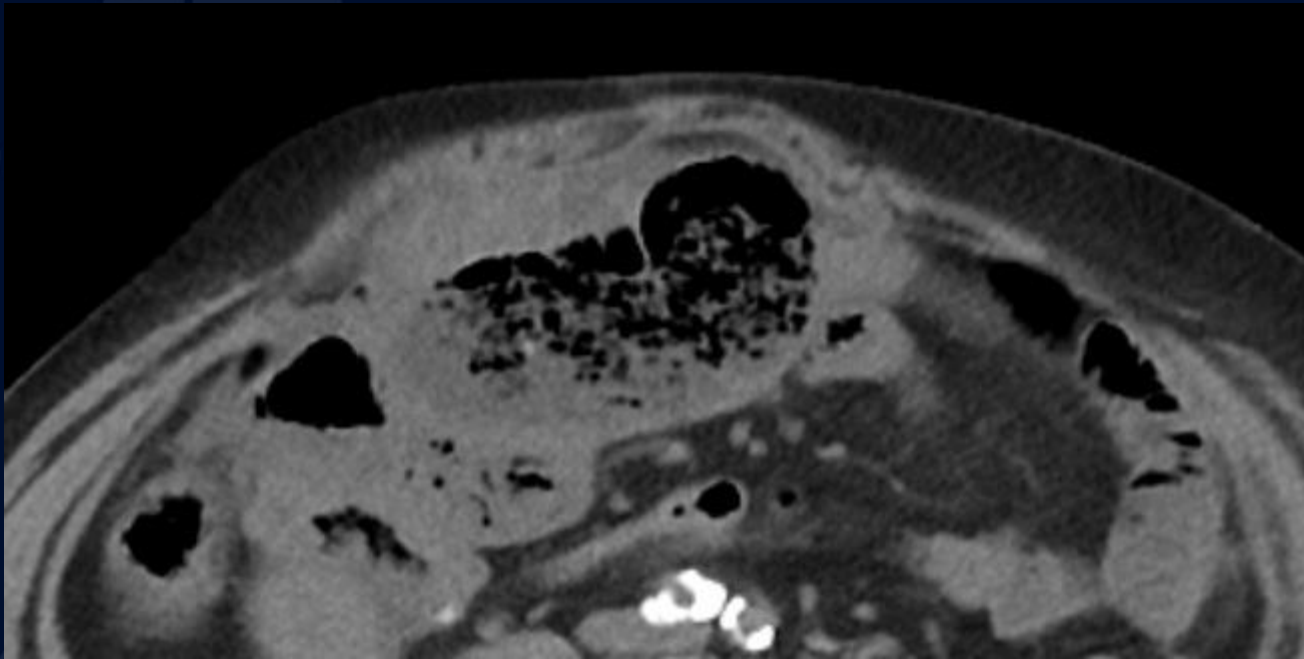
65 year-old female with history of remote gastric bypass surgery presented to ER with acute onset of epigastric pain, nausea, and vomiting.

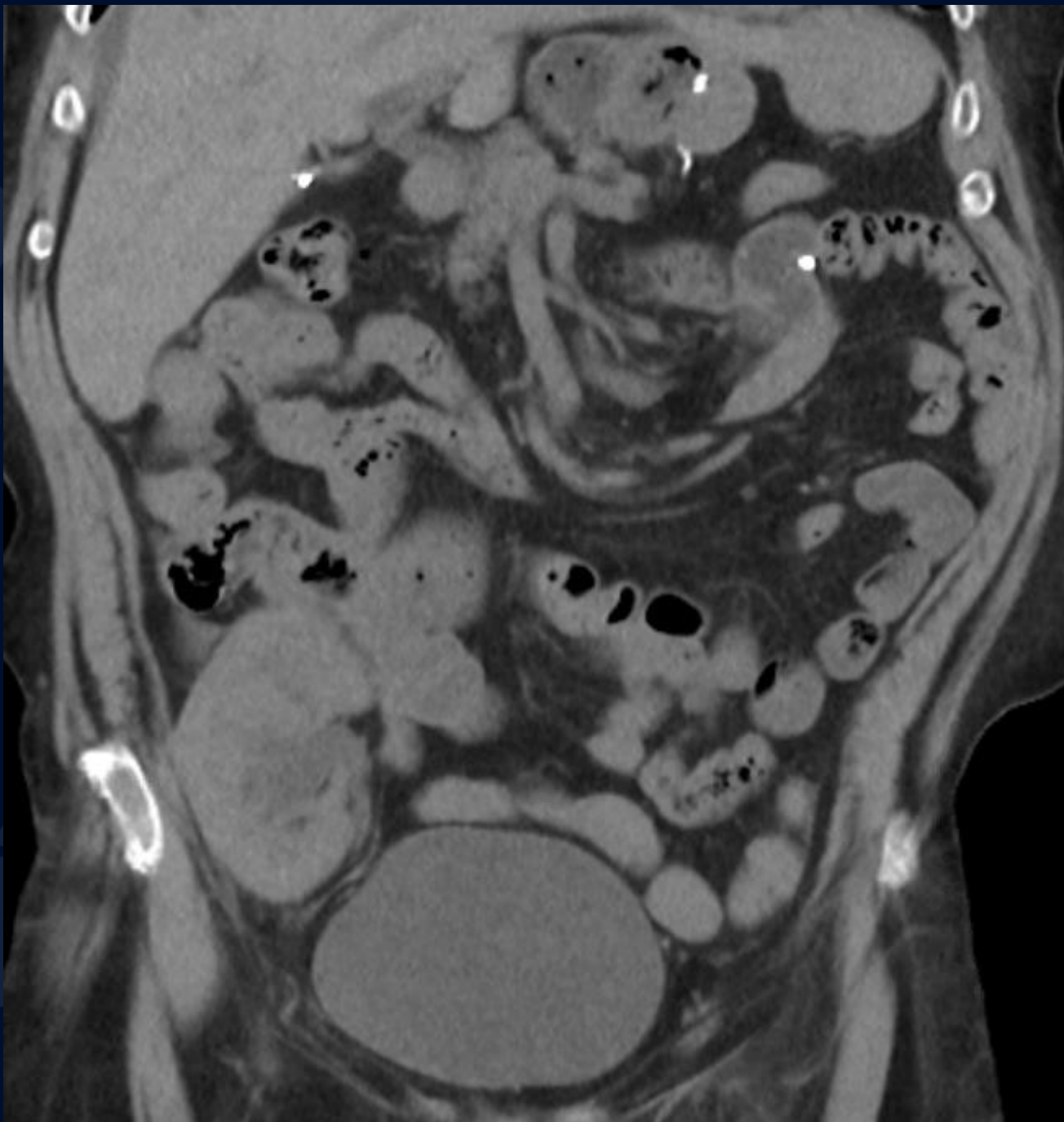
Ryan Joyce, MD

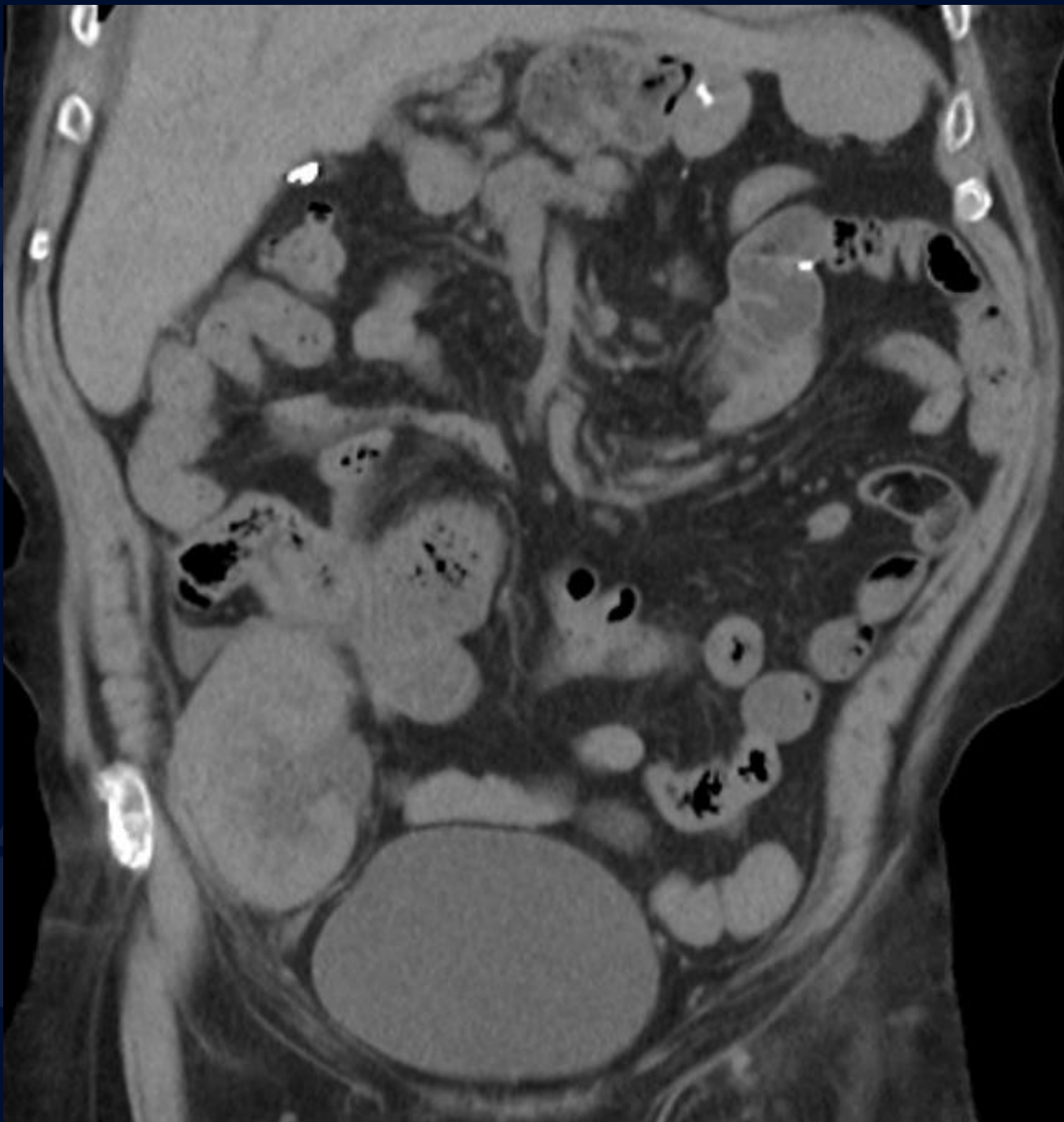


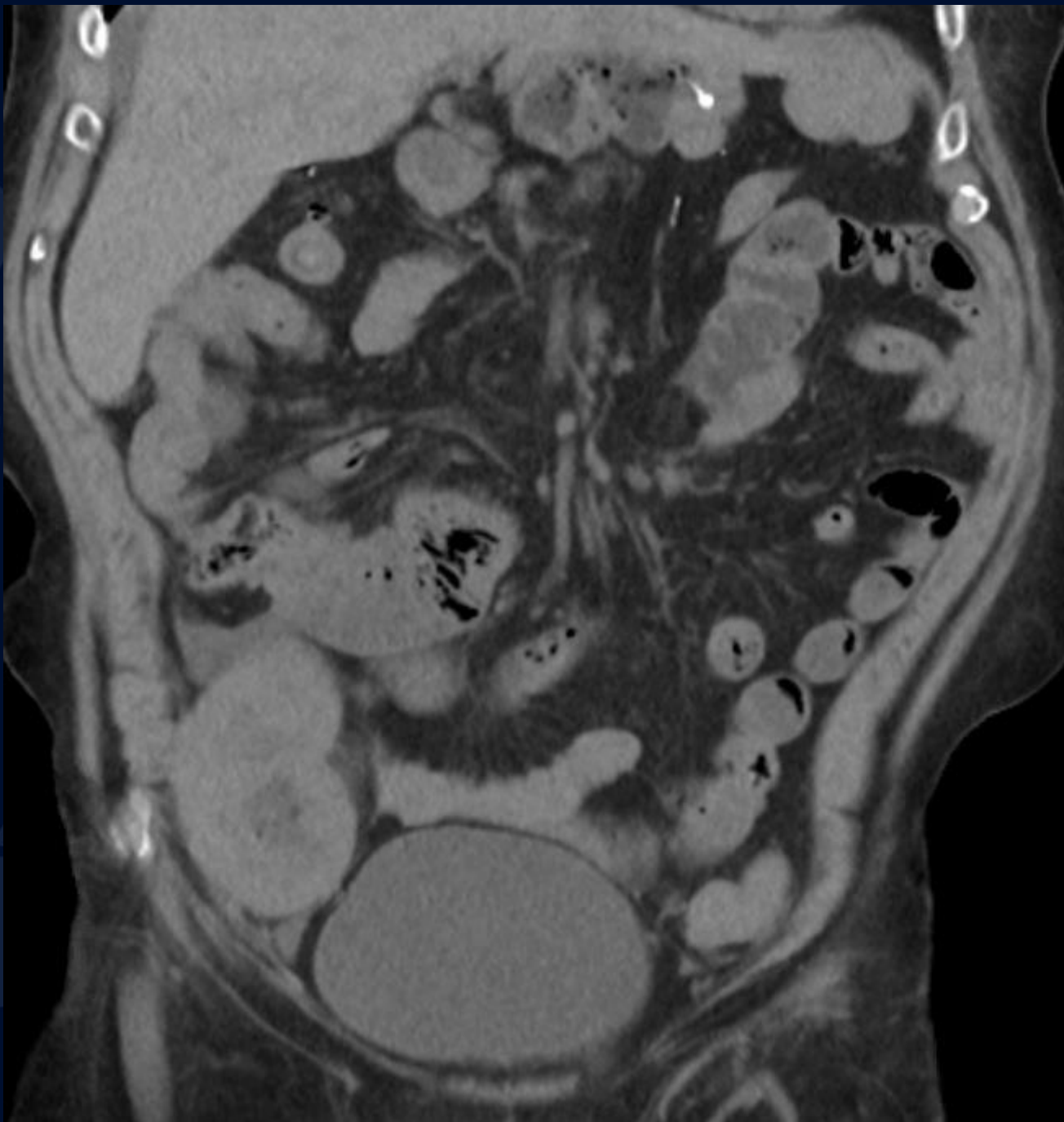


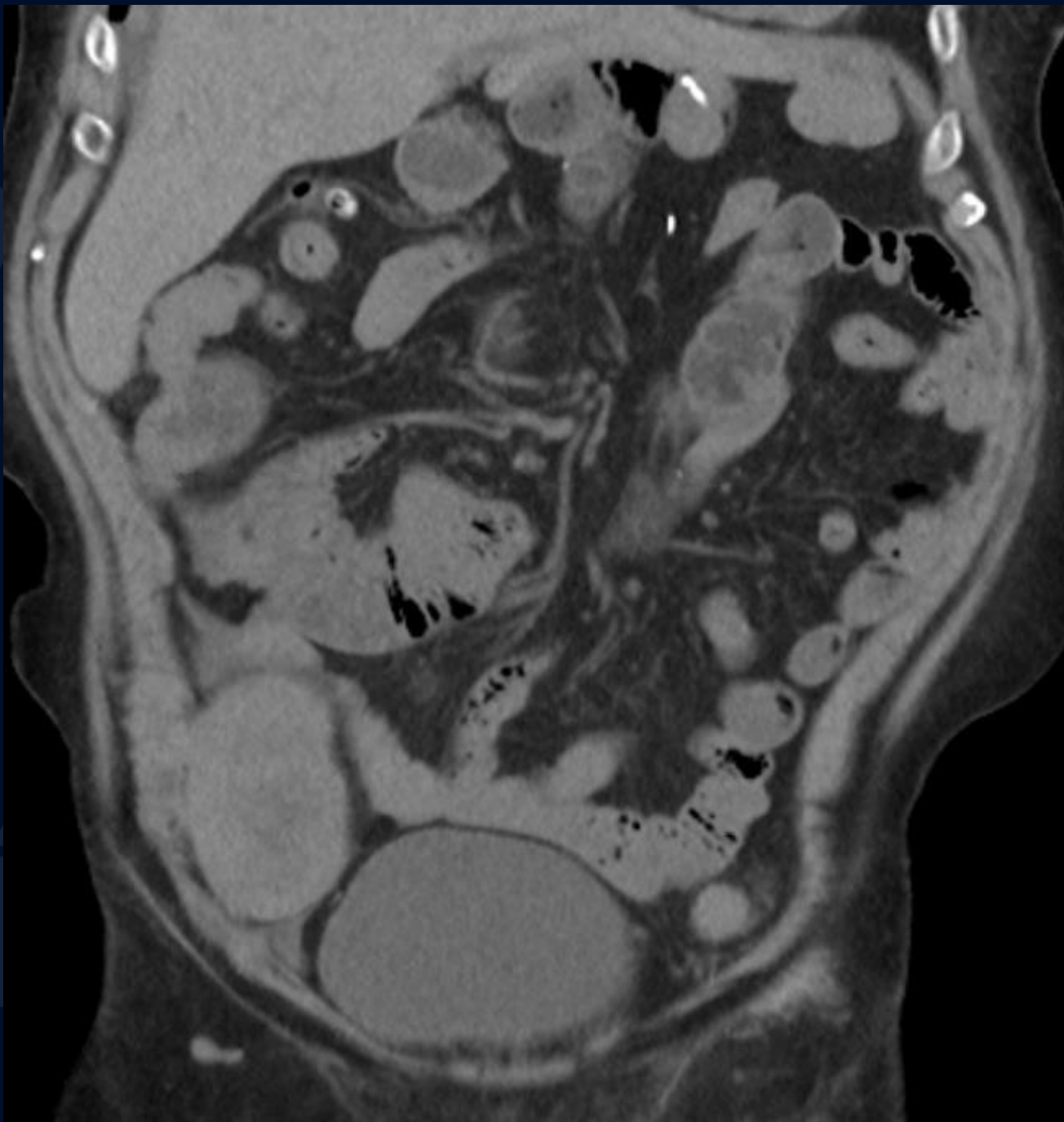


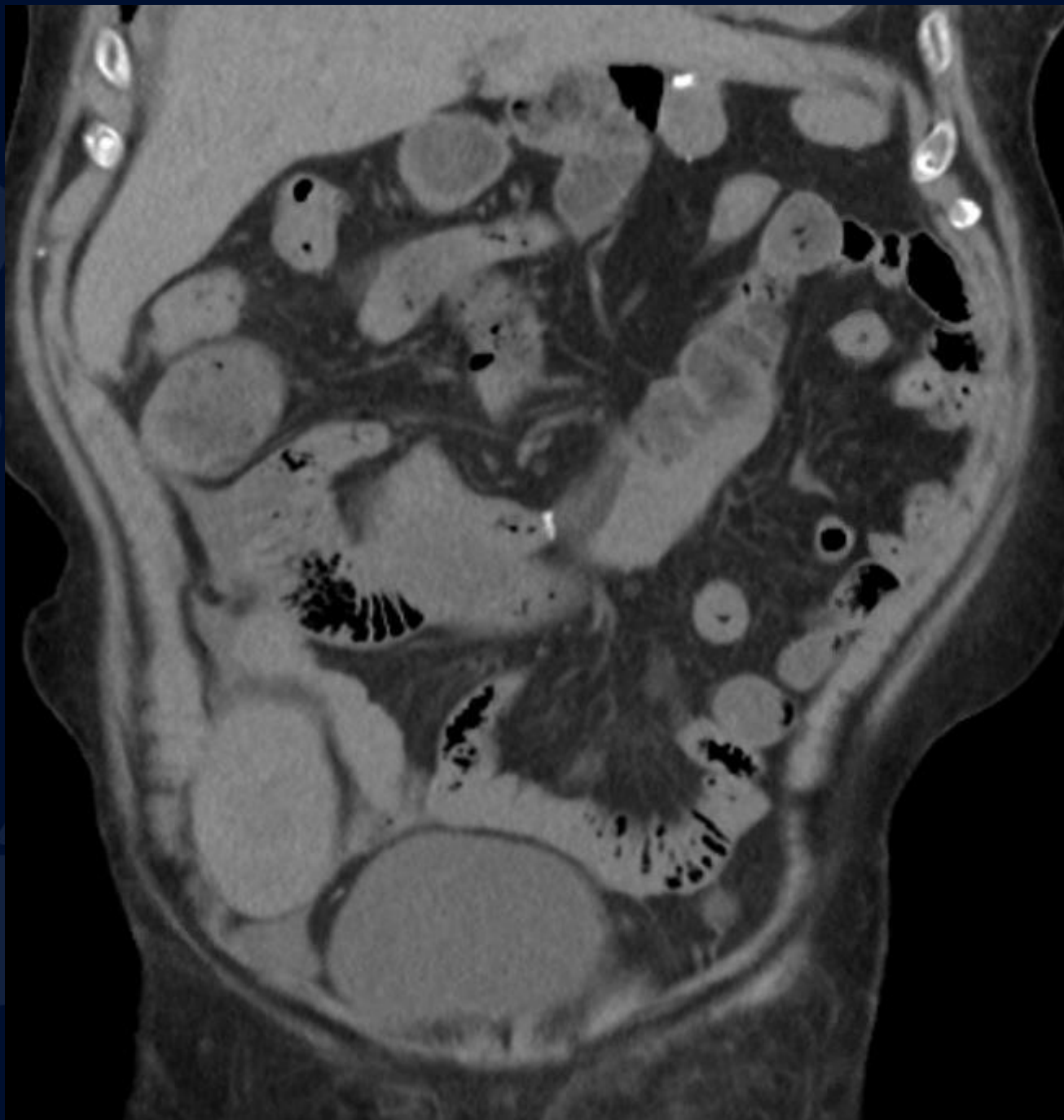


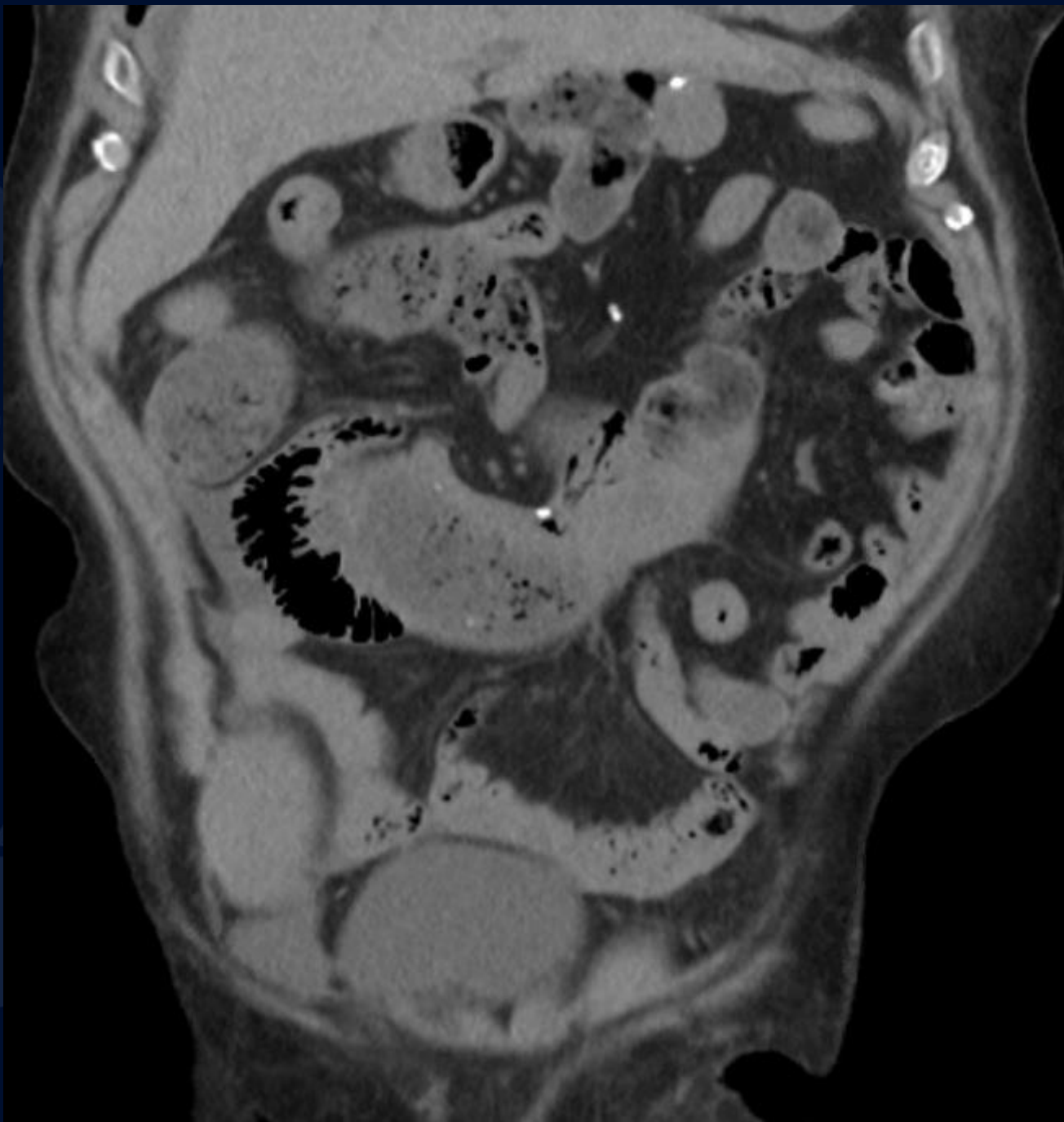


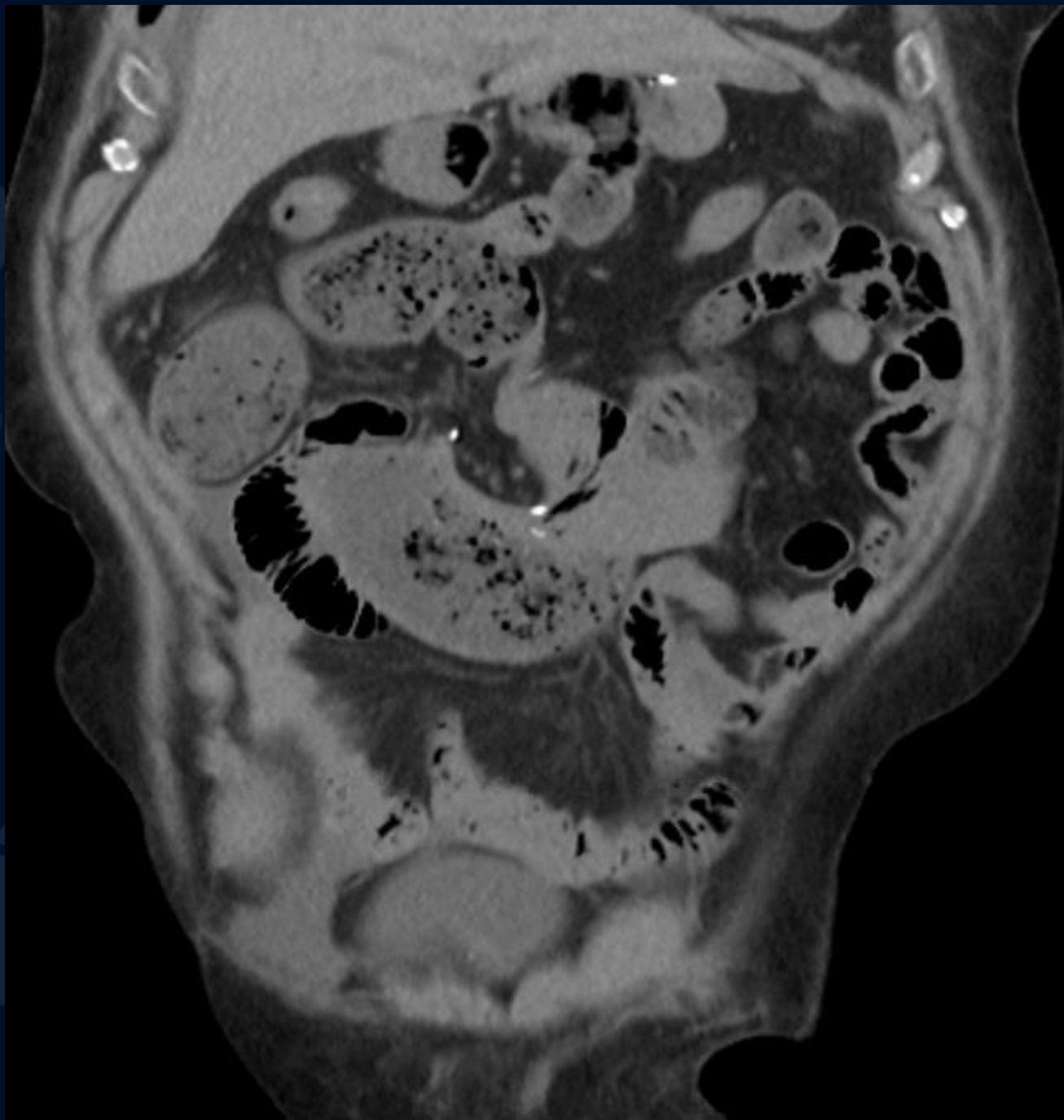


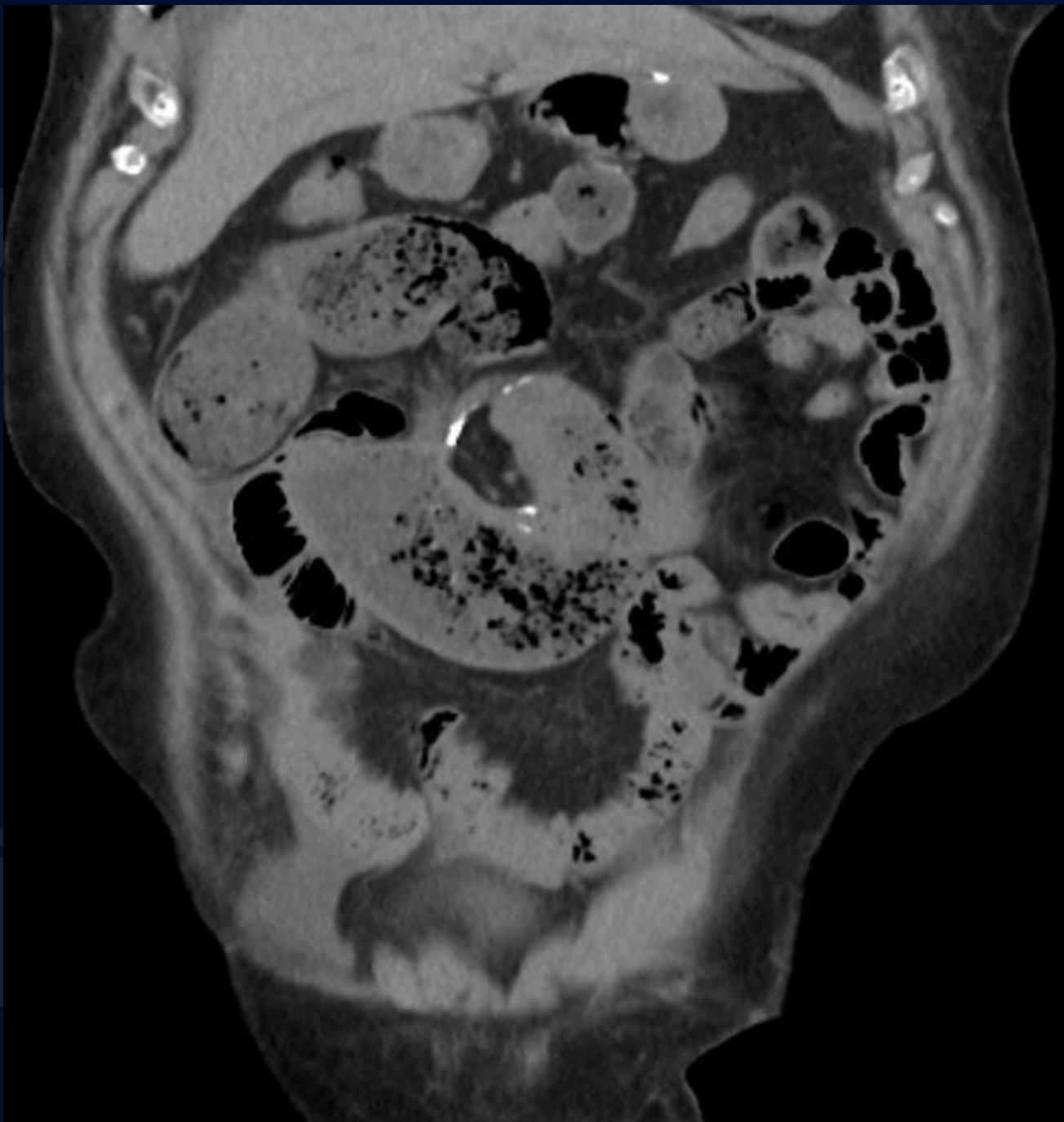


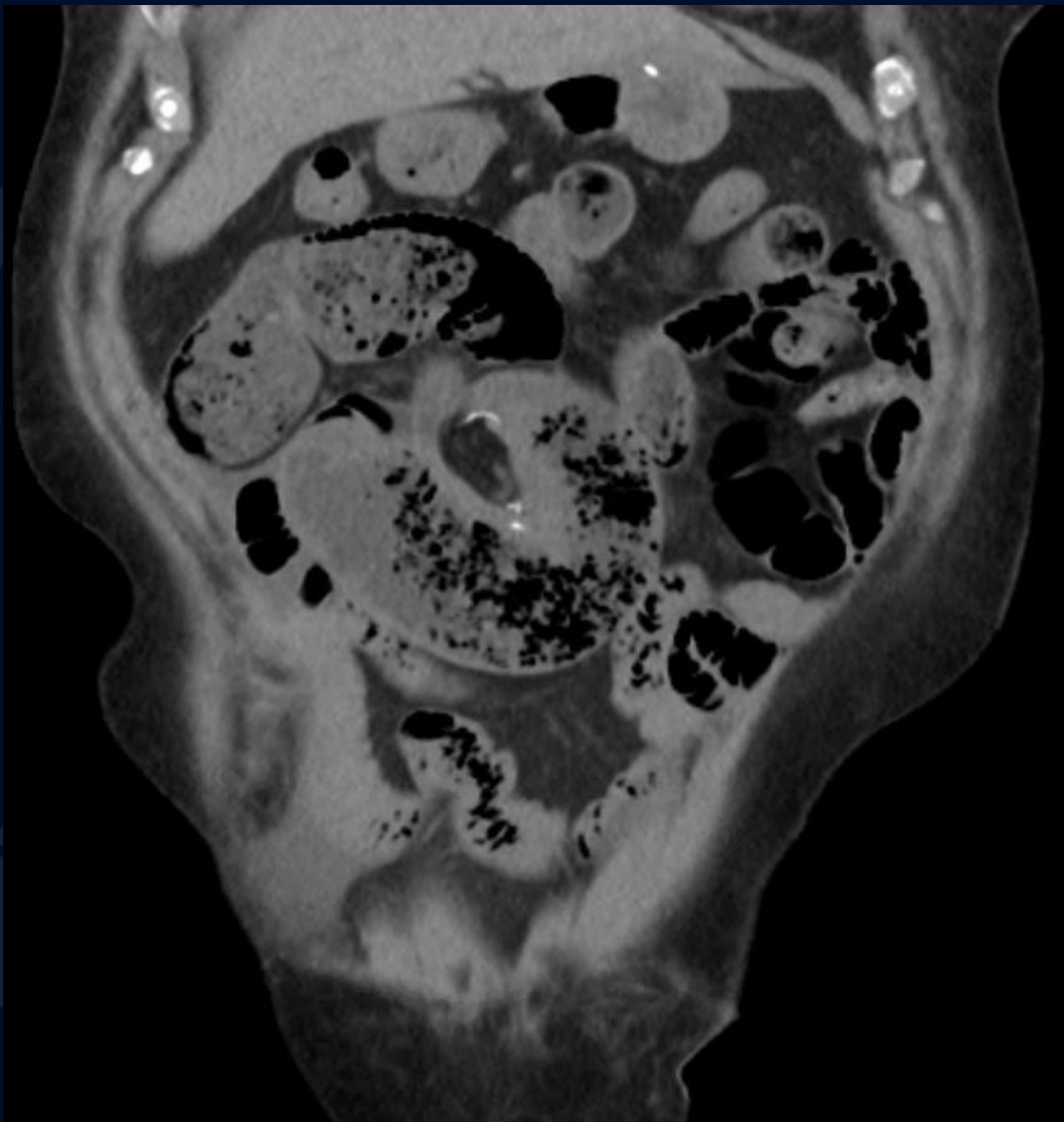


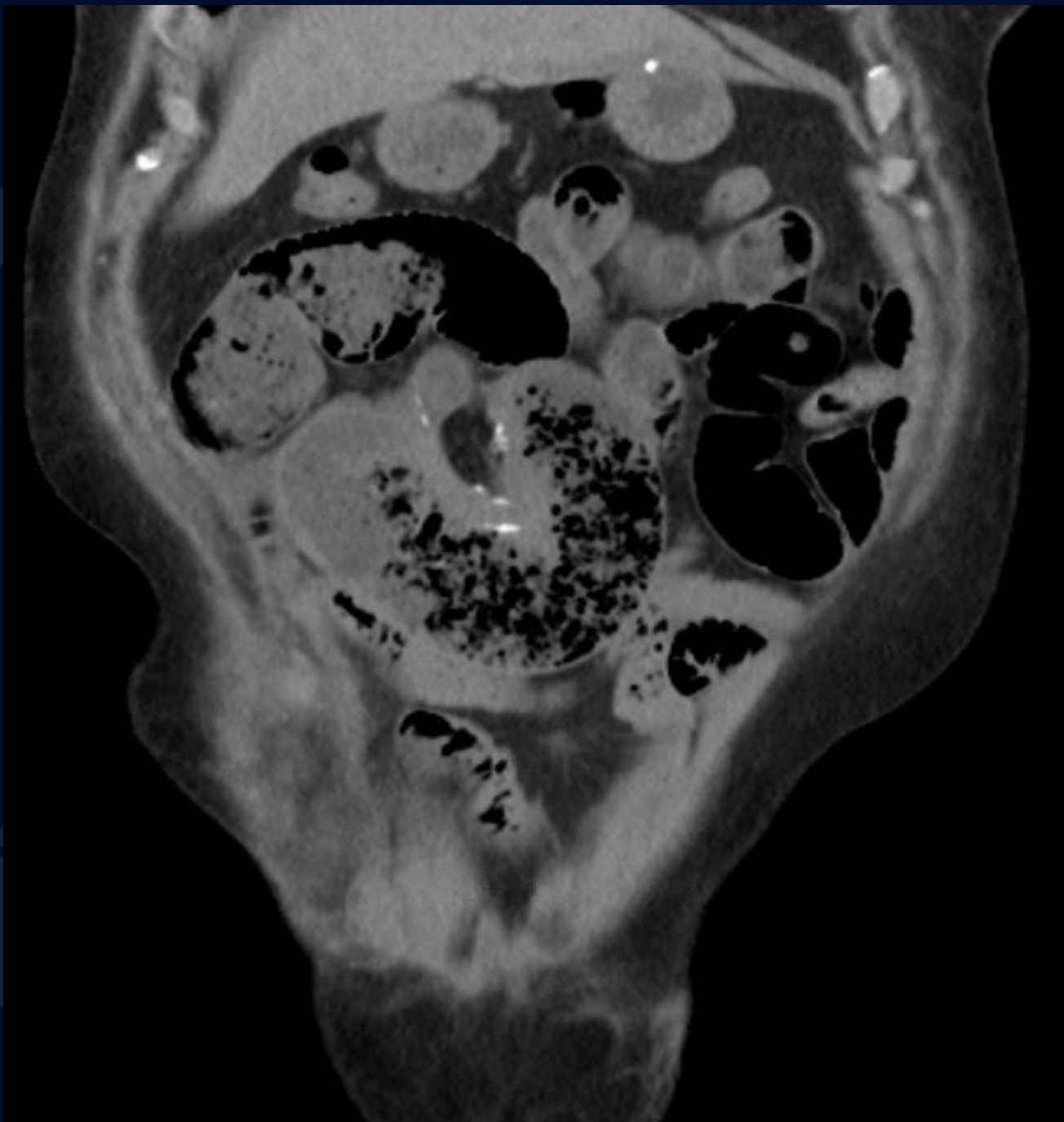








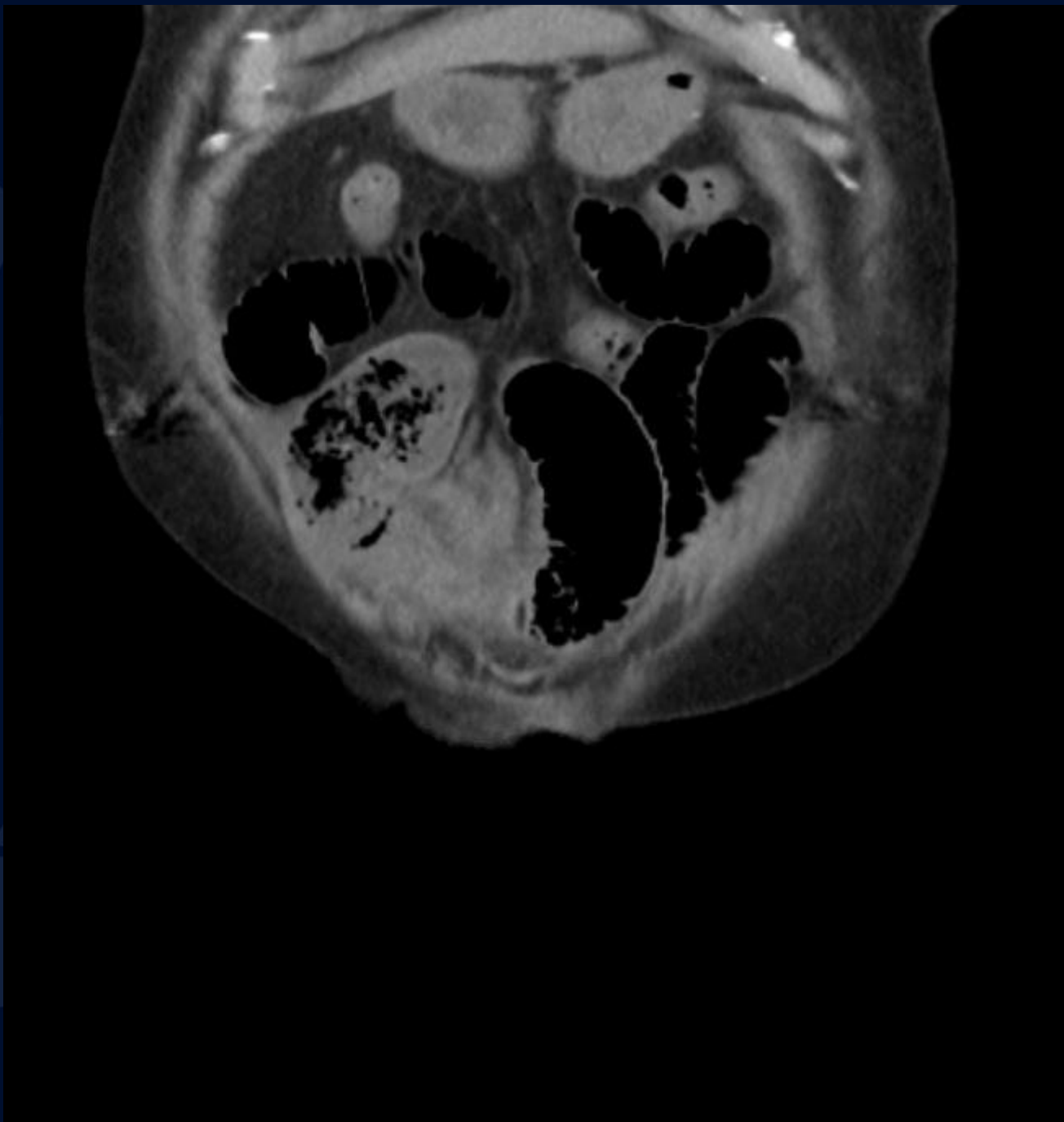


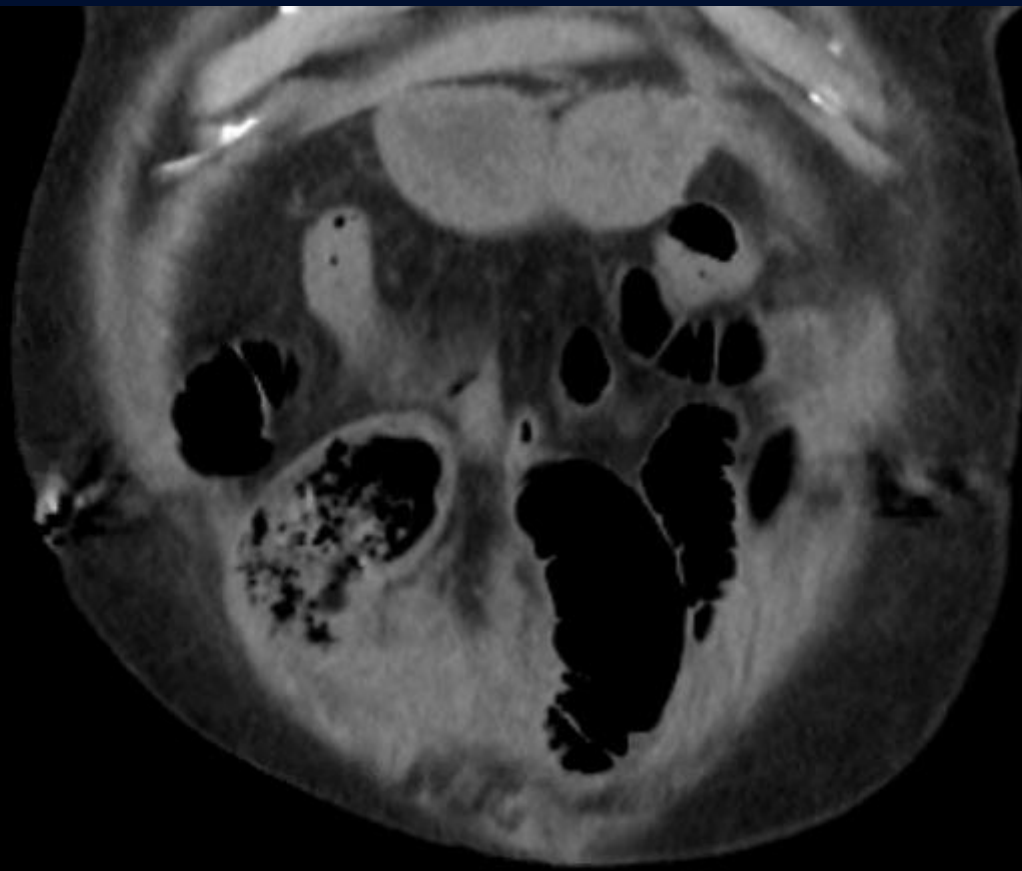


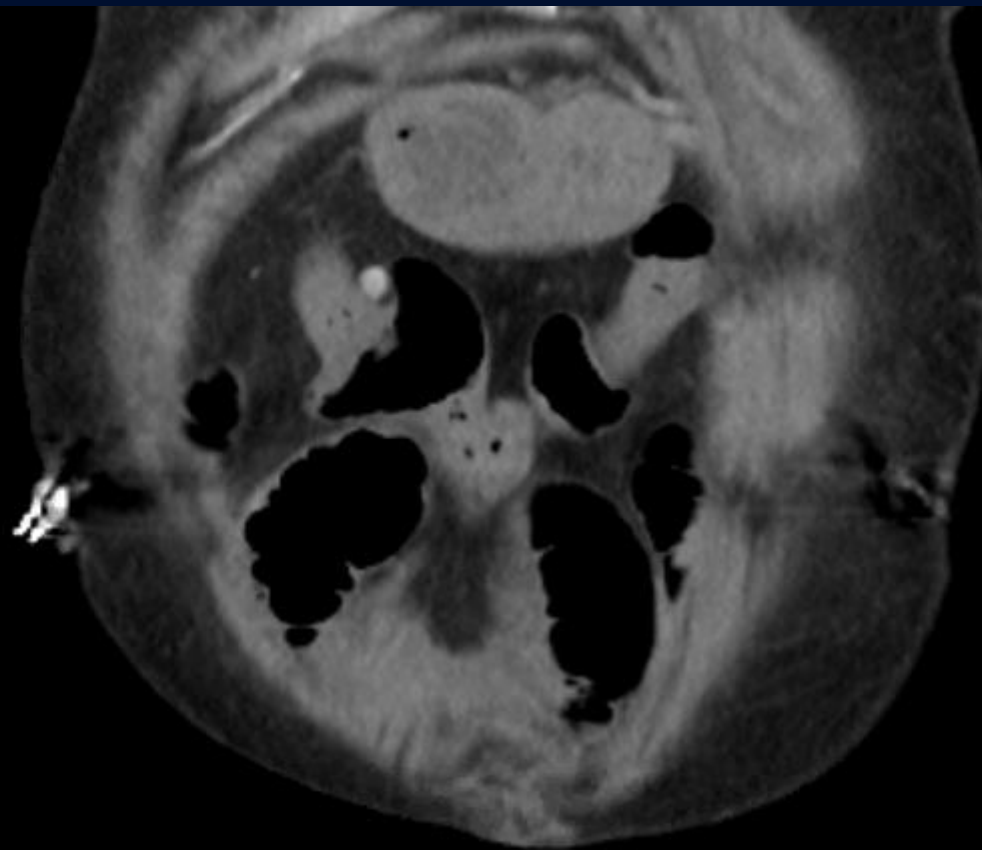




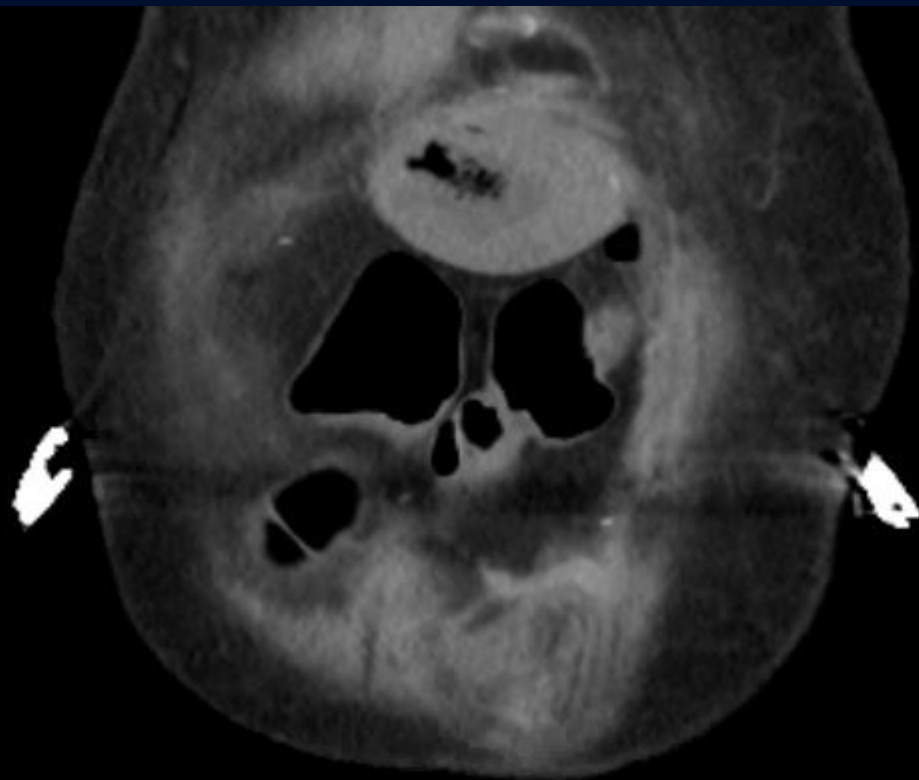


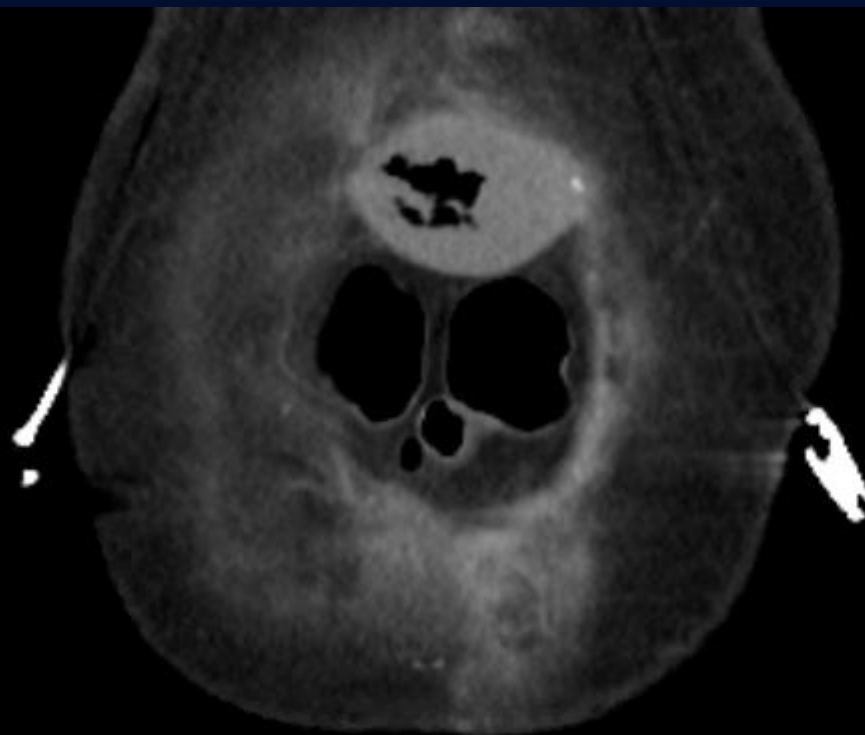








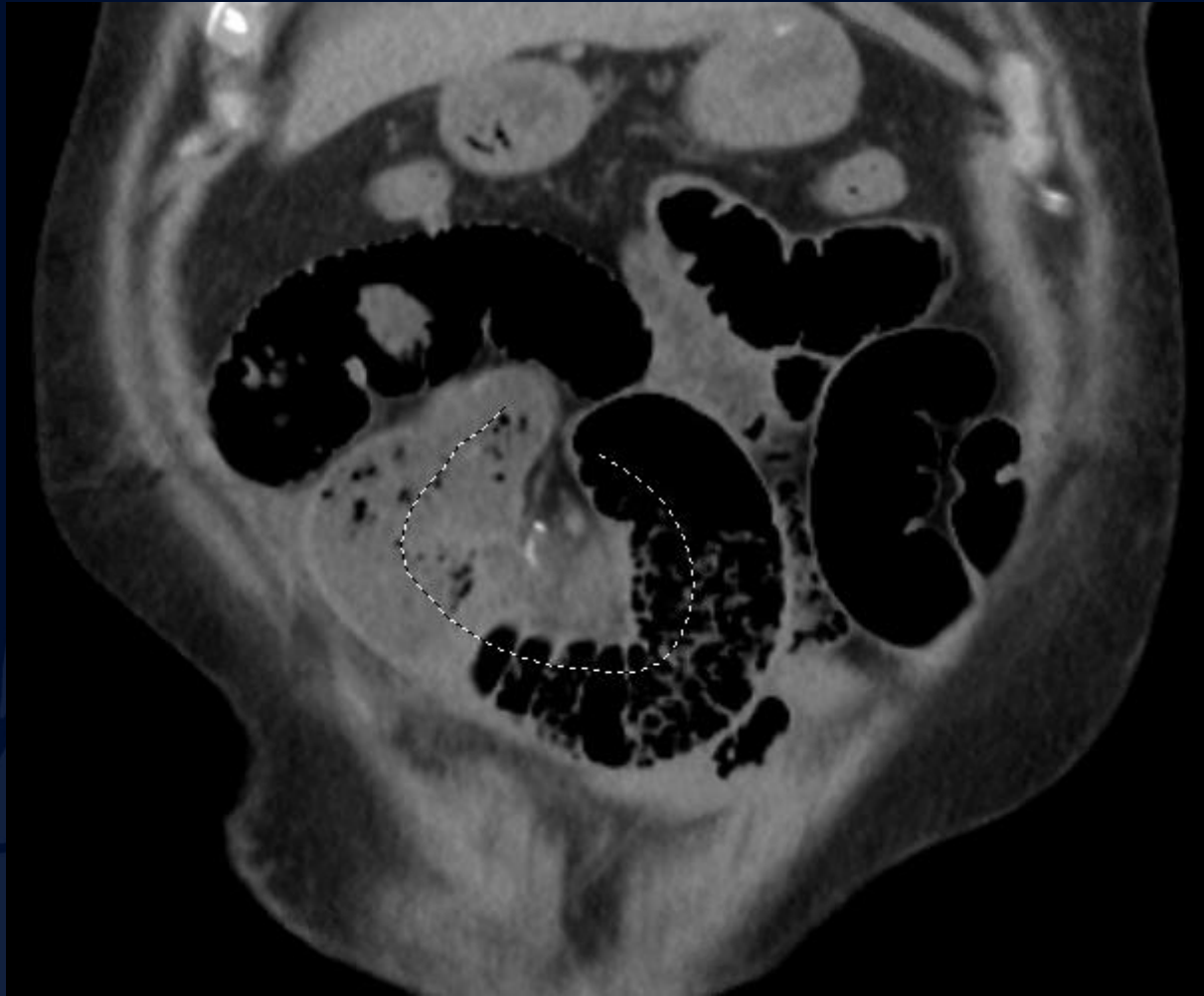




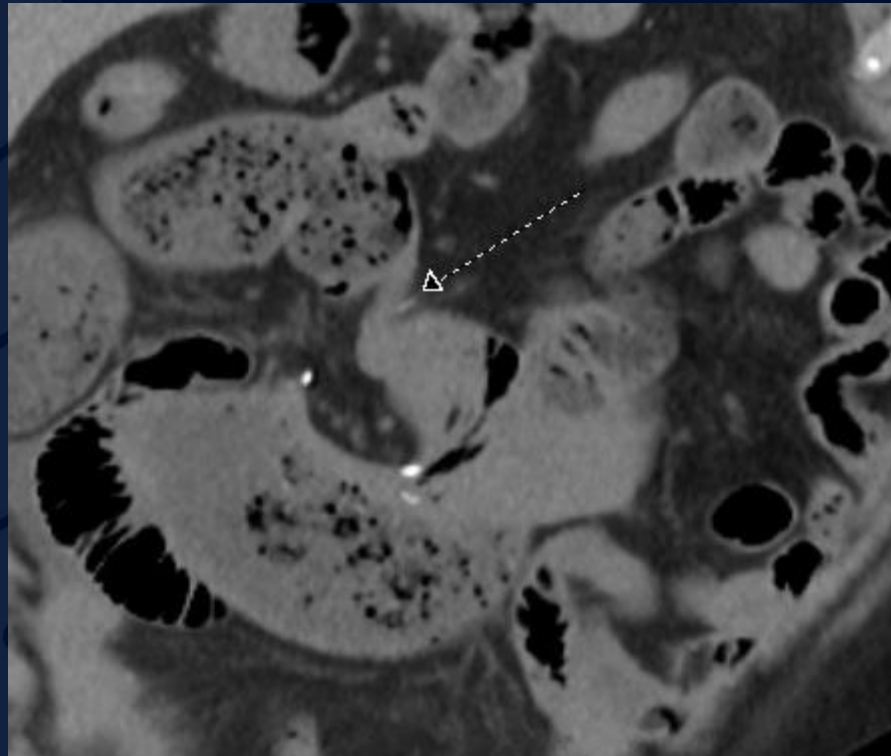
A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide.

?

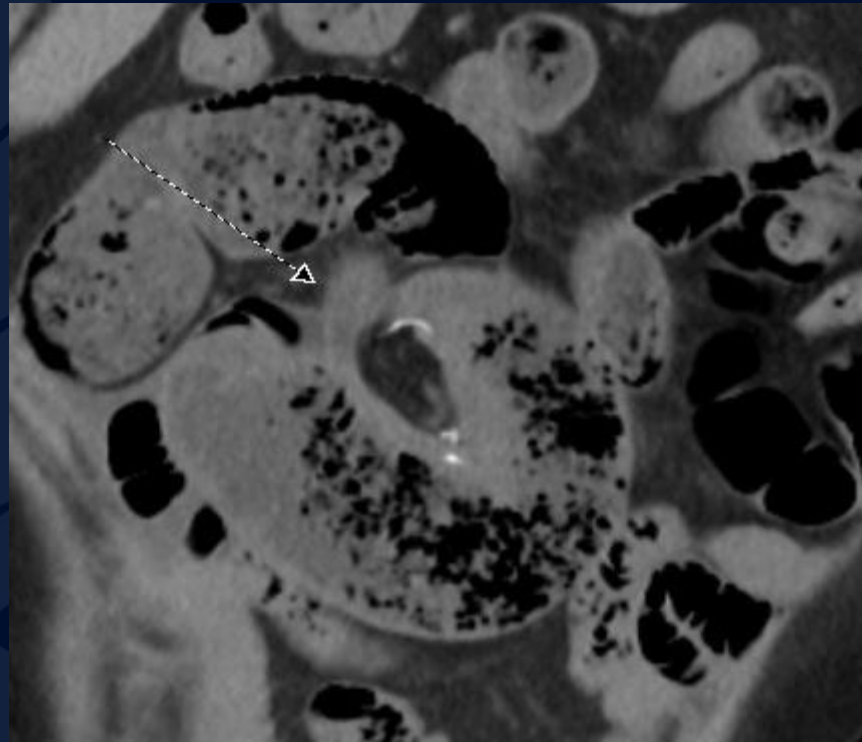
Closed-loop bowel obstruction



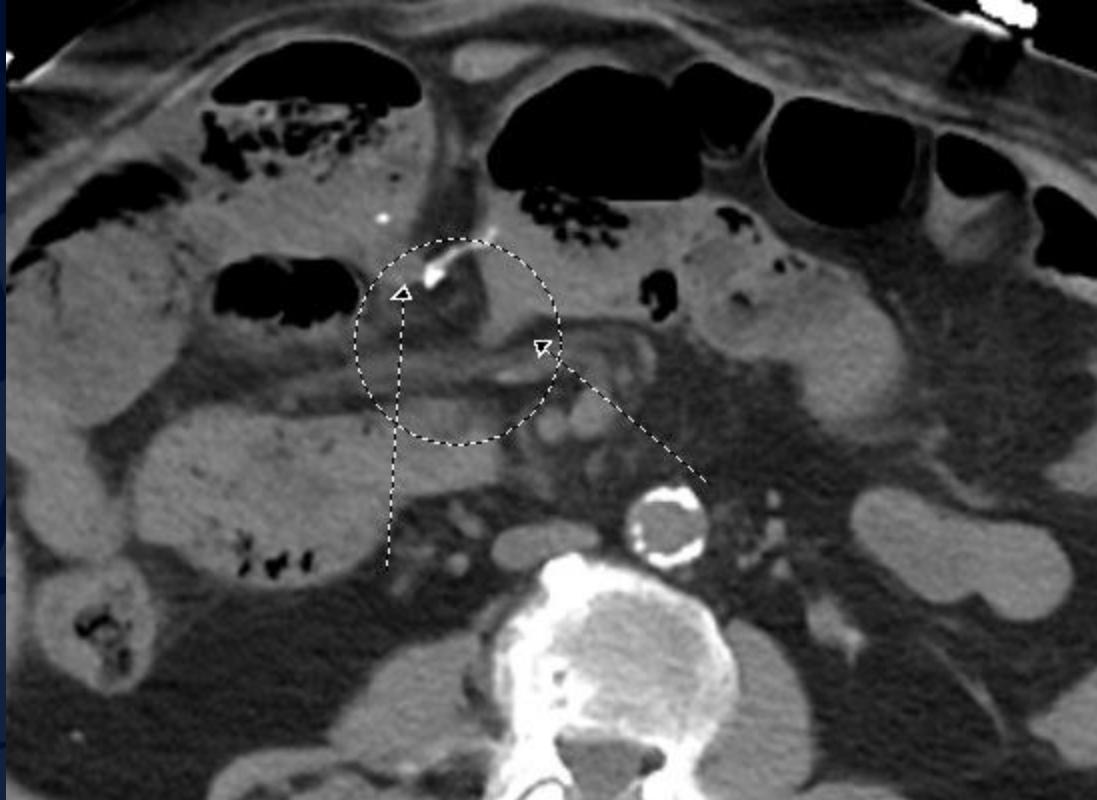
The “U” or “C-shaped loop of bowel,
representing the closed segment.



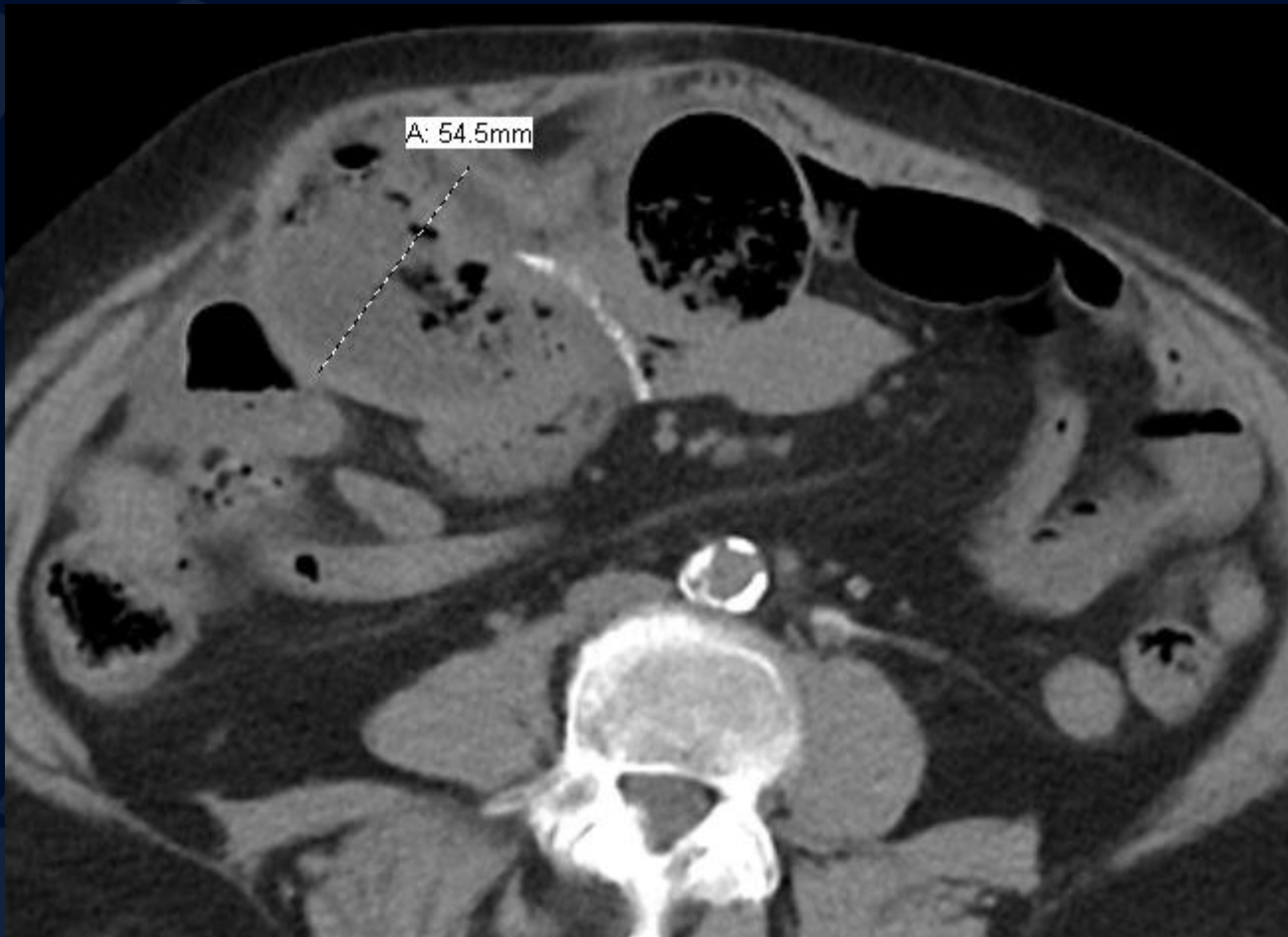
Transition point 1



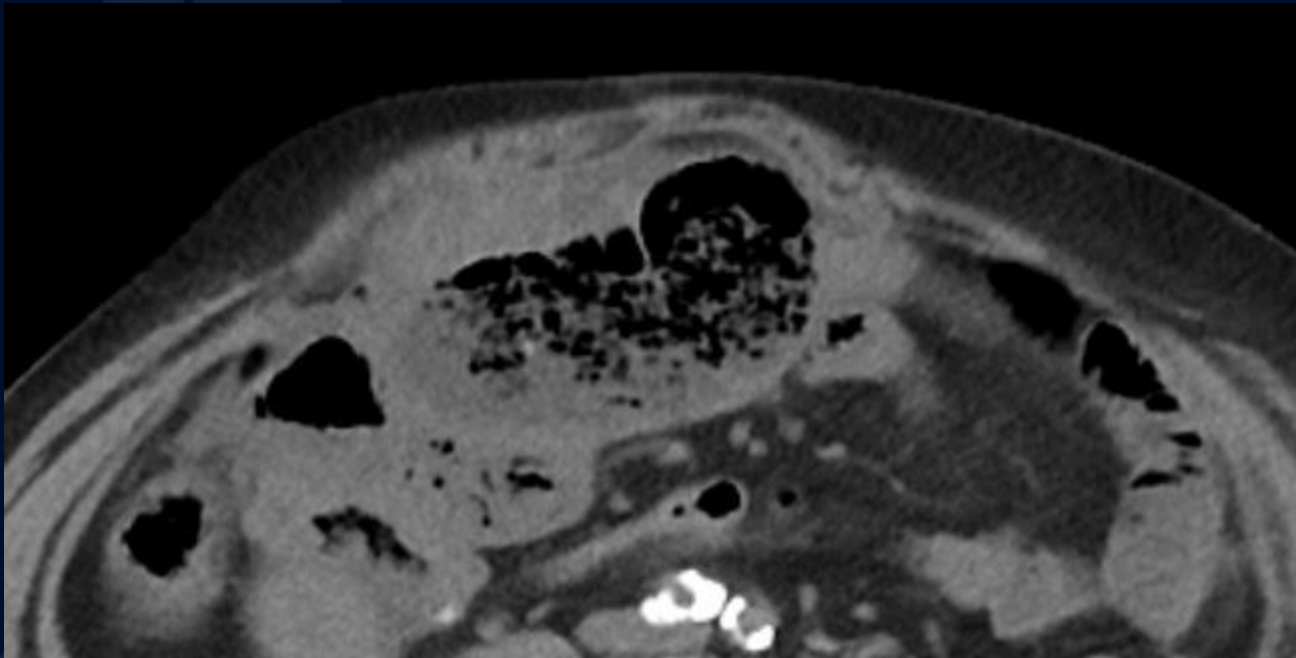
Transition point 2



The two transition points shown in close proximity at the “top” of the loop



Dilated bowel within the closed loop, wall thickening, somewhat hyper-attenuating



Markedly thickened bowel wall, somewhat hyper-attenuating with surrounding fluid at the apex of the closed-loop



One of the only short segments of small bowel proximal to the obstruction demonstrating increased caliber. Overall, there was relatively little small bowel dilatation proximal to the obstruction.

Closed-loop bowel obstruction

Bowel obstruction with 2 adjacent transition points involving both ends of a segment of bowel, involves mesentery.

- Affected segments are usually markedly distended by fluid, relative lack of gas.
- Relatively little dilatation of bowel proximal to the closed loop obstruction.
- Obstructed segment is typically C-shaped or U-shaped.
- Mesentery fans radially from a point at the gap in the “C” or “U”.
- Beak sign: fusiform tapering at point of obstruction

“Simple” obstruction is a single transition point at one point within the bowel, in contradistinction to a closed-loop obstruction.

Closed-loop bowel obstruction

Usually a surgical emergency.

- As pressure builds within the closed loop, blood supply is quickly compromised and patients may progress rapidly to bowel necrosis and perforation.
- Identification of a closed-loop obstruction is as important as identifying pneumatosis or ischemic bowel.
- Risk factors include prior abdominal surgery (adhesions), and particularly gastric bypass and other mesenteric manipulations. Often related to an internal hernia through a surgerized mesenteric defect.
- CT diagnosis of closed loop or ischemic SBO is crucial for directing prompt surgical intervention.

Closed-loop obstruction

Most imaging signs of bowel strangulation are nonspecific, and include:

- Wall thickening
- Increased attenuation of the affected bowel wall
- Halo or target sign
- Pneumatosis intestinalis
- Portal venous gas
- Localized mesenteric fluid and hemorrhage

Specific finding for strangulation in the setting of closed-loop obstruction:

- Lack of wall enhancement, asymmetric enhancement, or delayed enhancement

References

1. Silva AC, Pimenta M, Guimarães LS. Small bowel obstruction: what to look for. Radiographics. 2009;29:423–439.
2. Statdx.com