

40-year-old male presenting with
upper abdominal pain, nausea,
vomiting, and diarrhea

Christopher Edwards, M3

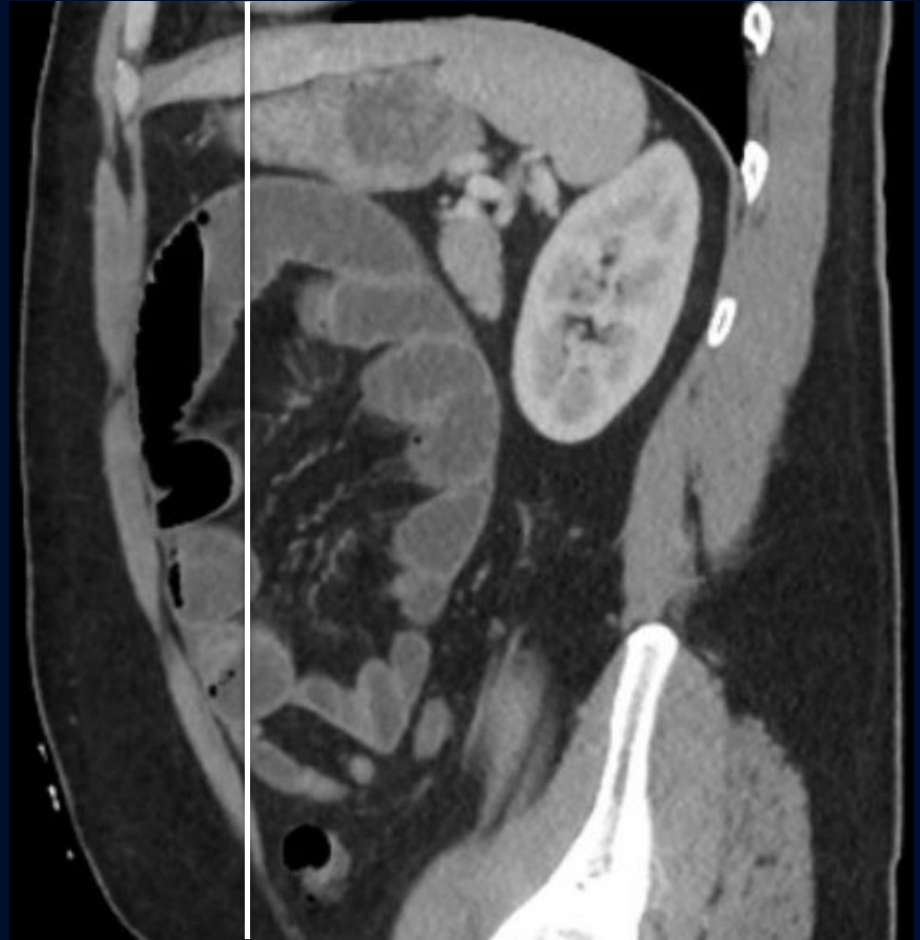
Brian Shames, MD

CT with IV contrast

Coronal

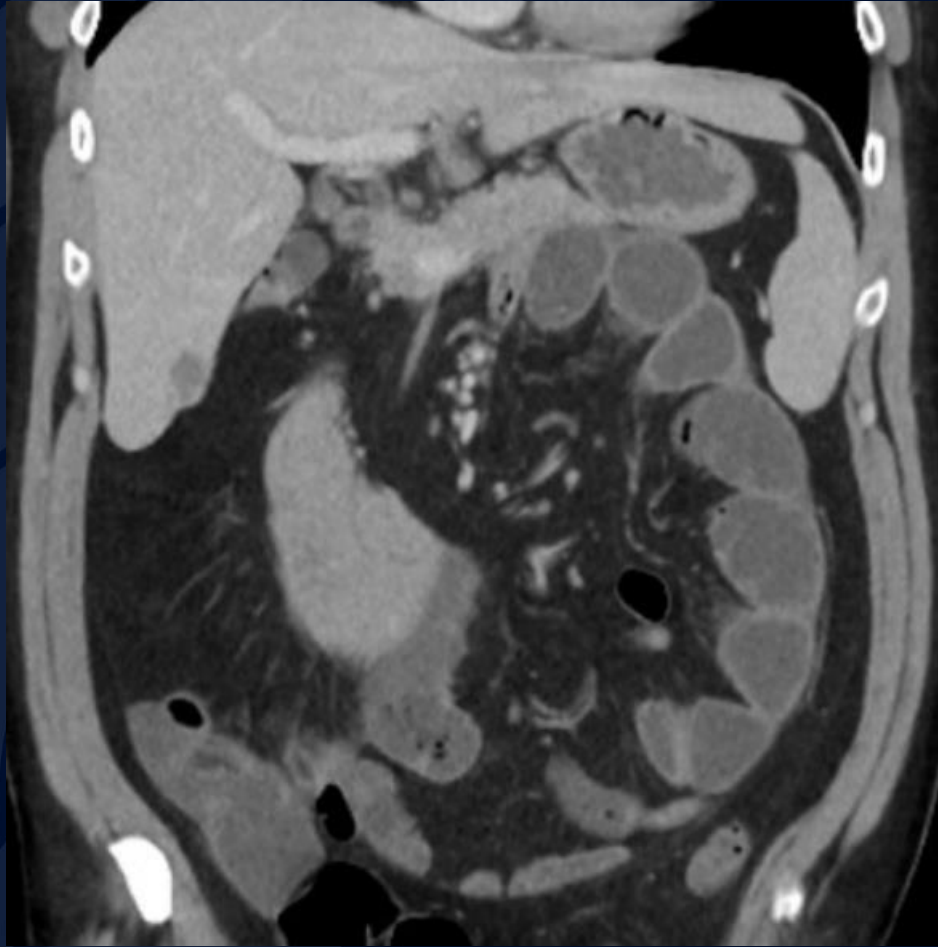


Sagittal



CT with IV contrast

Coronal

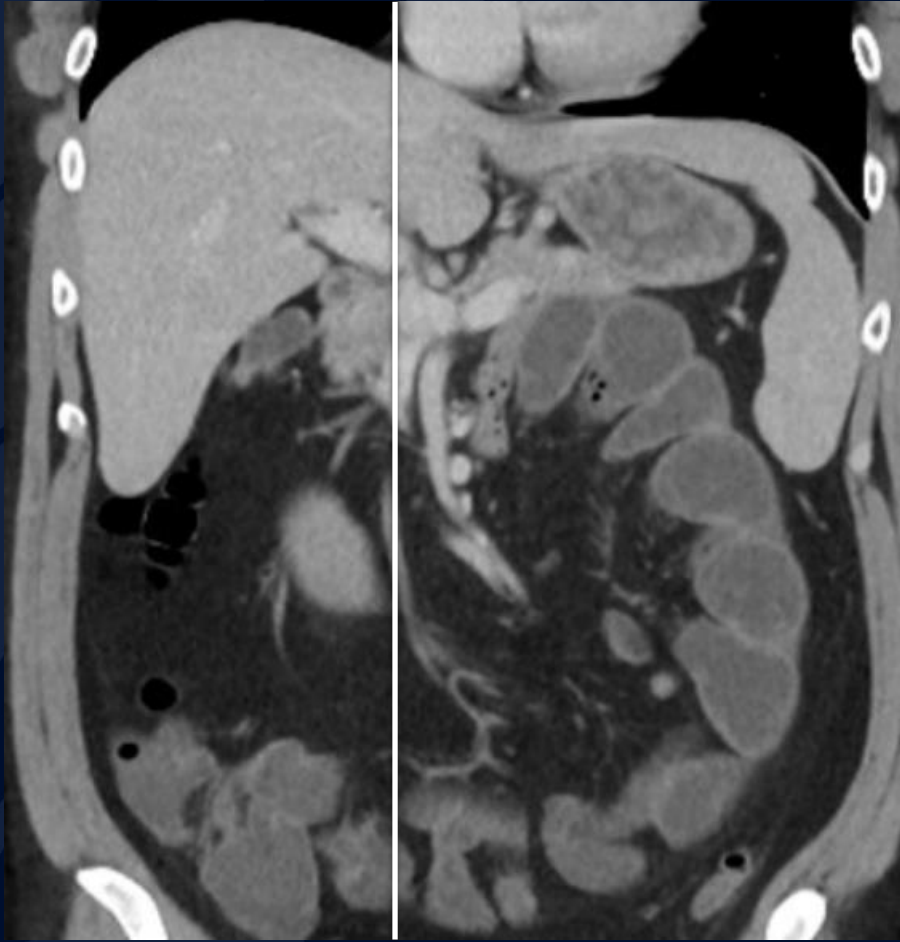


Sagittal



CT with IV contrast

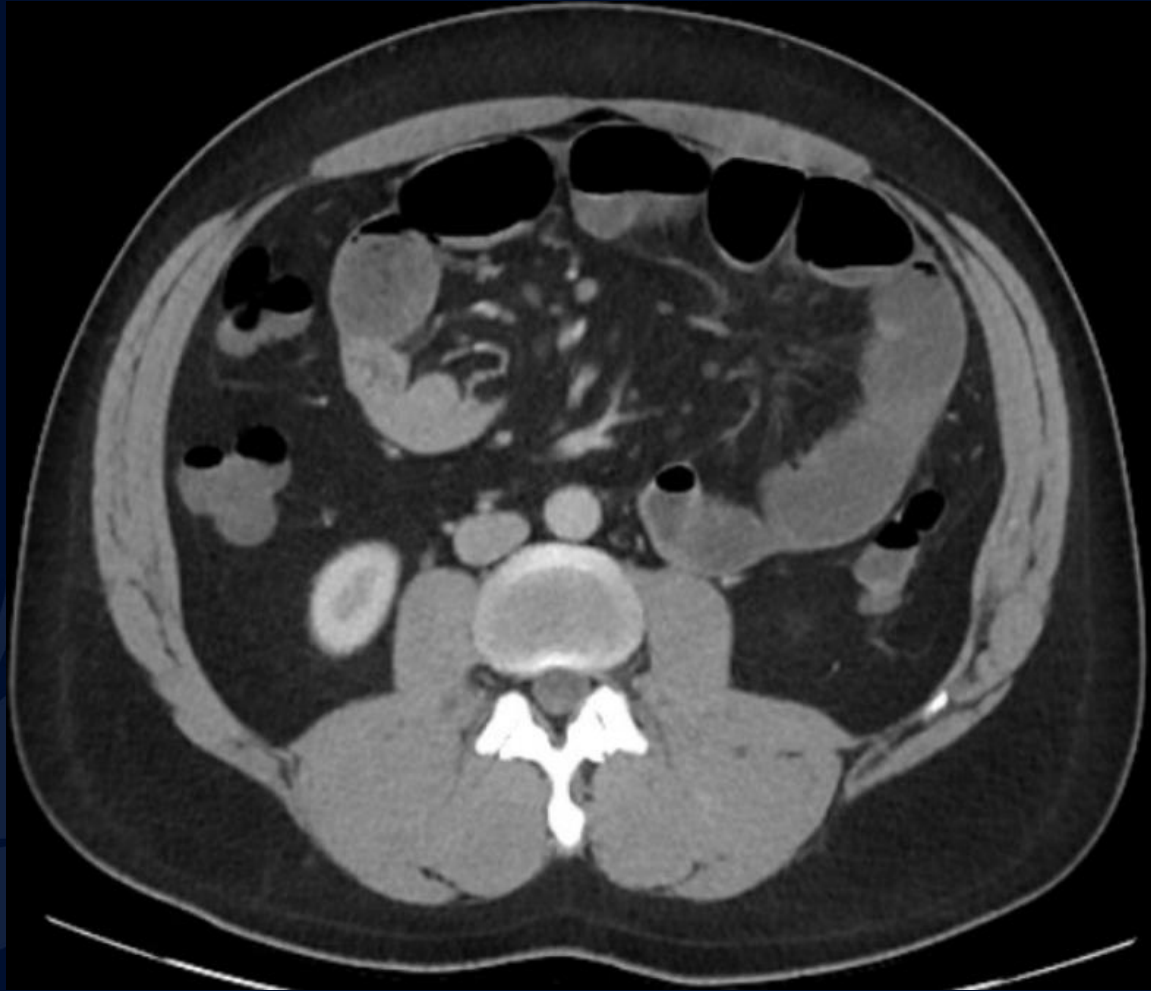
Coronal



Sagittal



CT with IV contrast



Fluoroscopic Upper Gastrointestinal Series



AP Radiograph

Post-Gastrografin (90 min)



A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching out, with a scalloped edge.

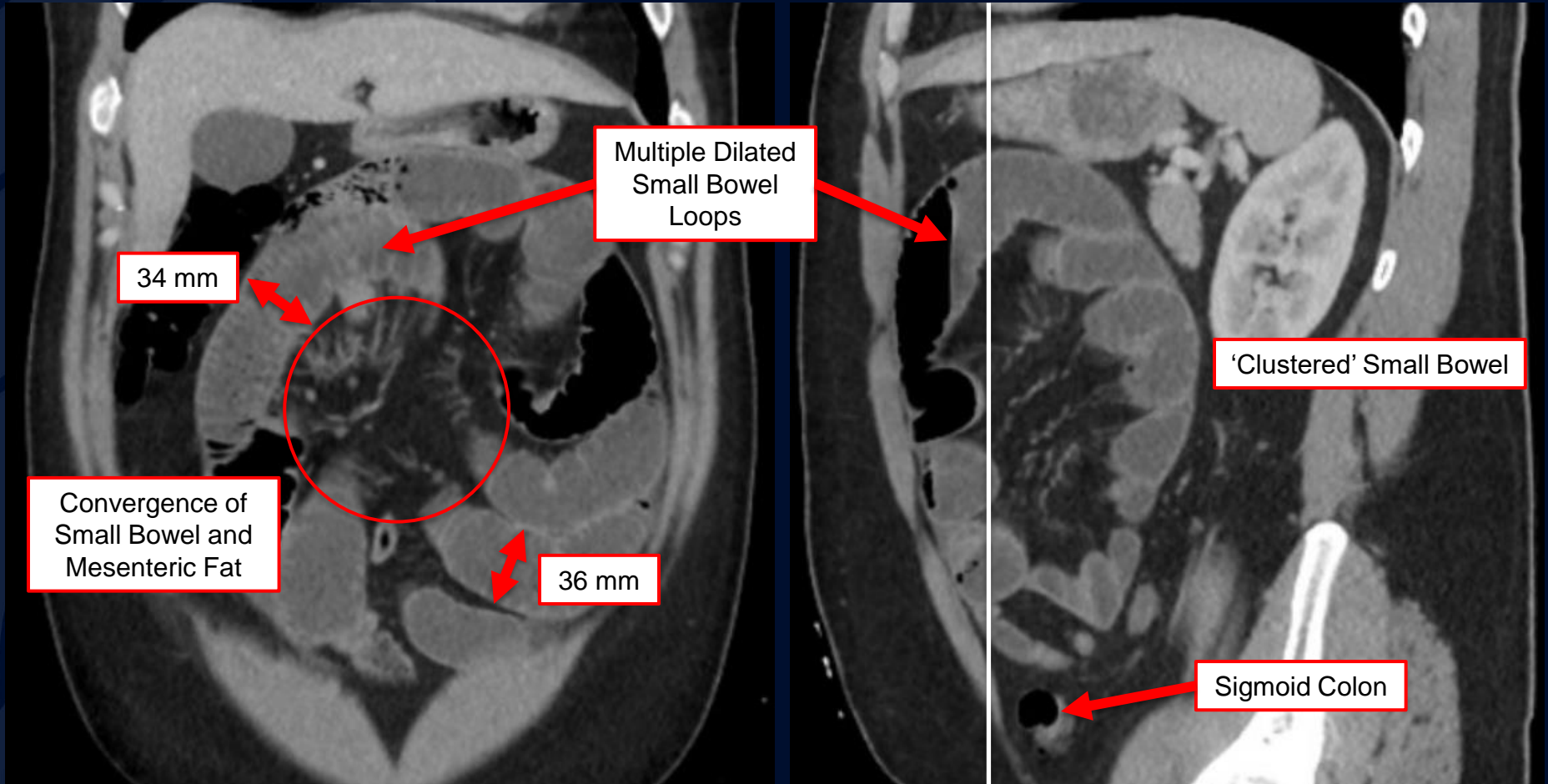
?

Left Paraduodenal Hernia

CT with IV contrast

Coronal

Sagittal

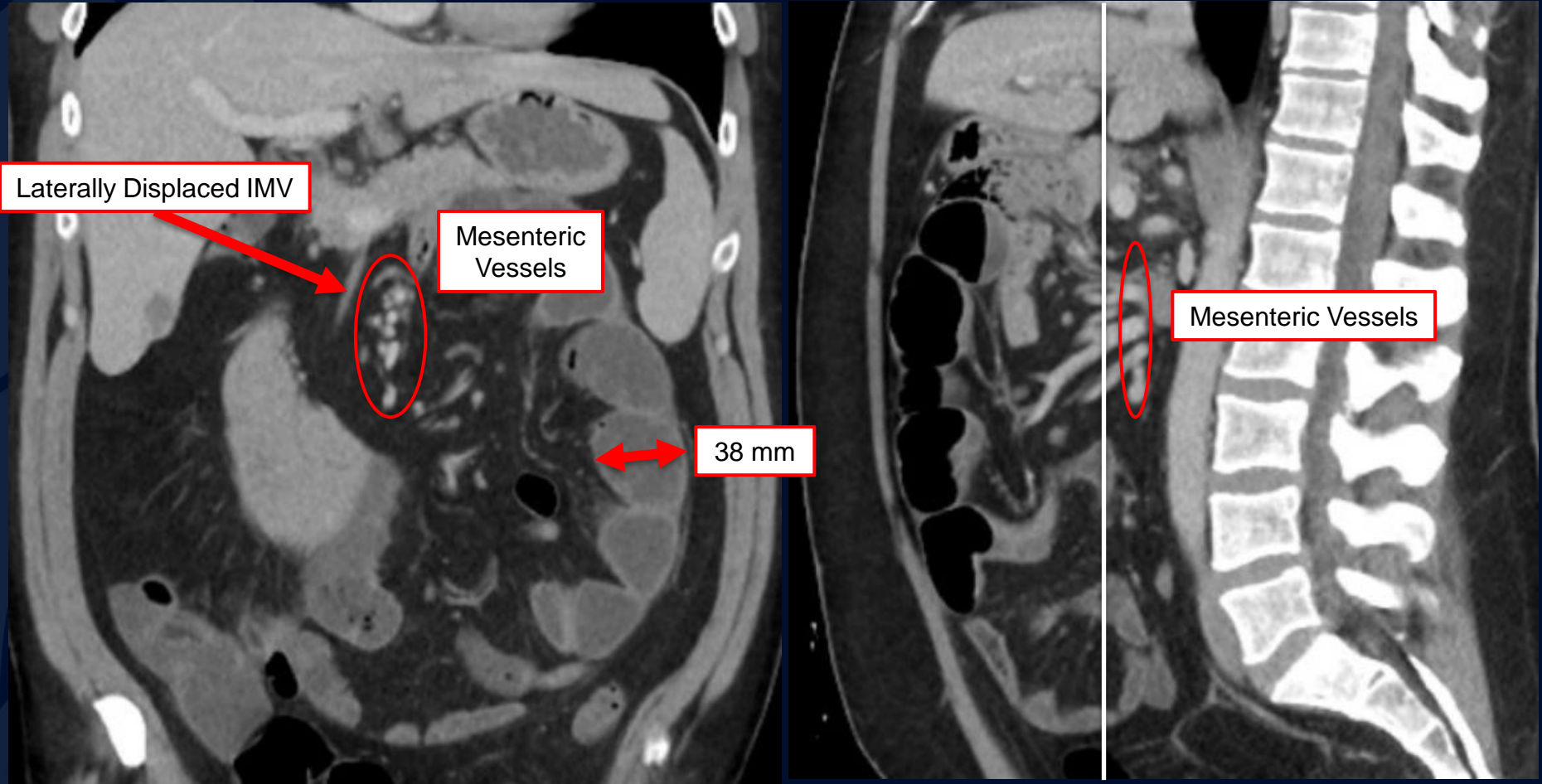


The radial array of multiple dilated small bowel loops arranged in a cluster suggests the presence of an internal hernia.

CT with IV contrast

Coronal

Sagittal

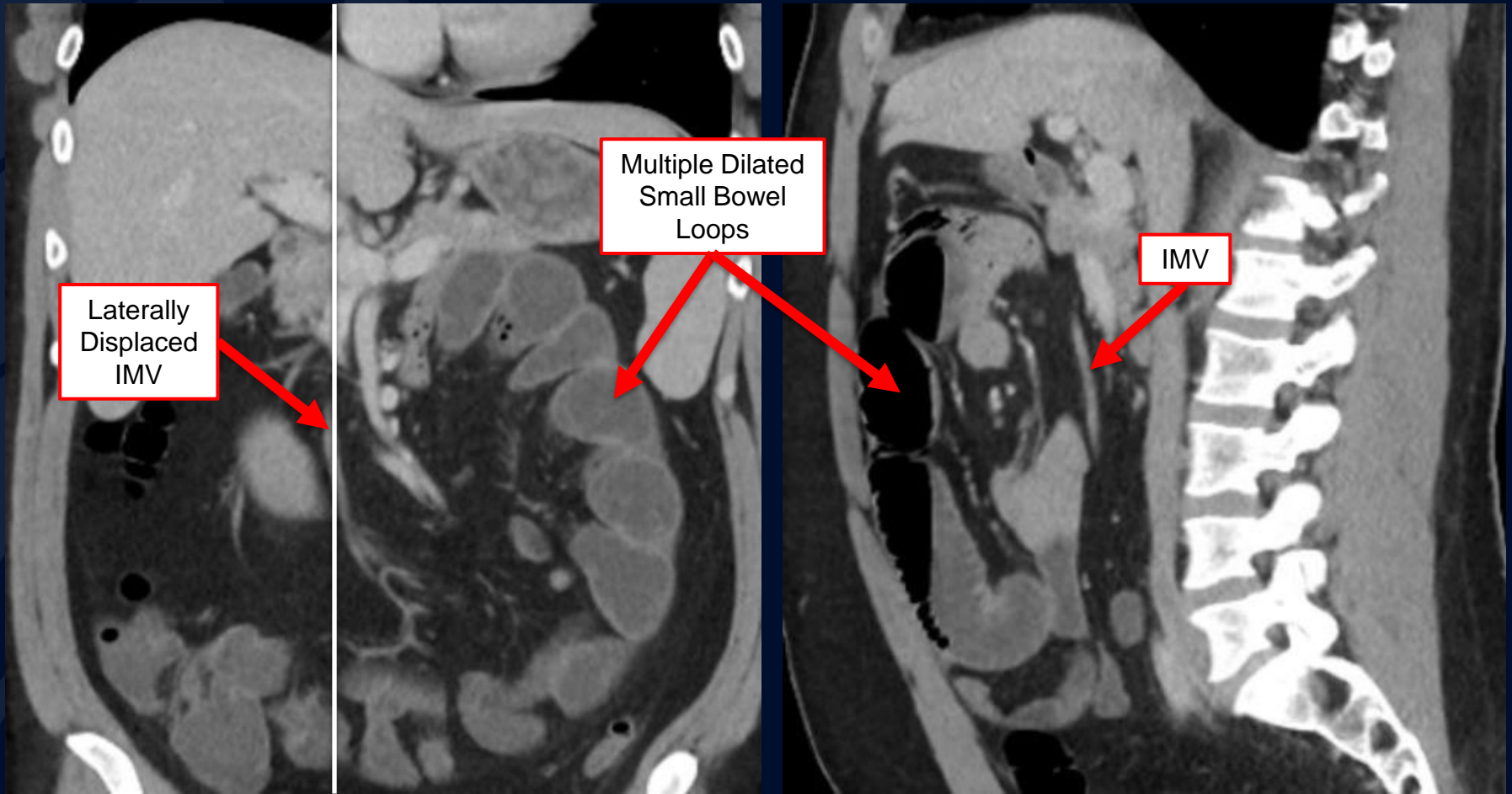


There are multiple dilated small bowel loops posterior to the Inferior Mesenteric Vein (IMV) which is a landmark for the Fossa of Landzert. Note the convergence of small bowel and mesenteric vessels and fat.

CT with IV contrast

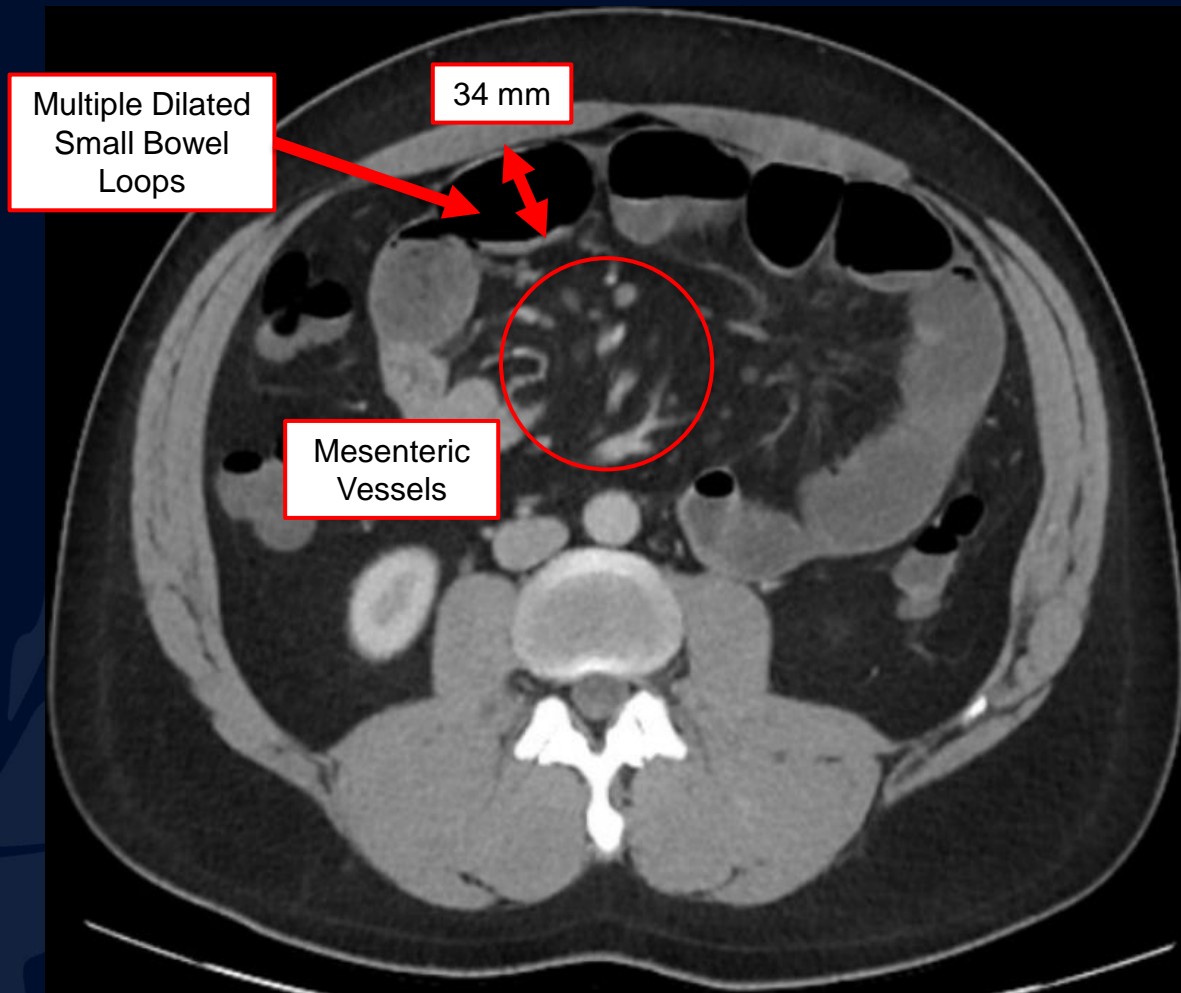
Coronal

Sagittal



The IMV courses to the anterior and right of the hernia origin. (Fossa of Landzert)

CT with IV contrast



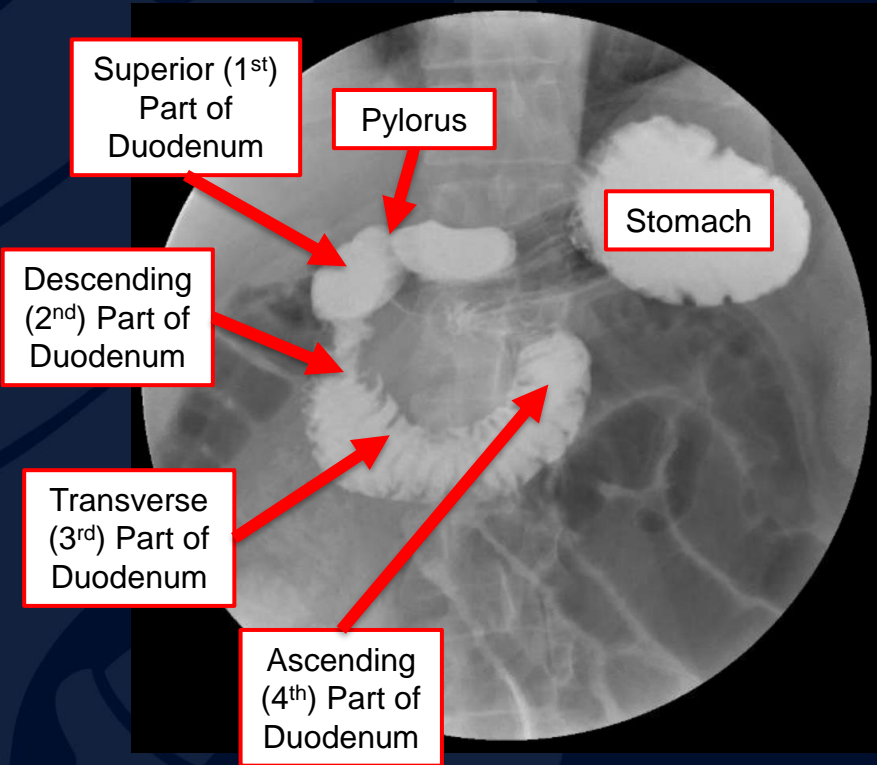
Multiple Dilated
Small Bowel
Loops

34 mm

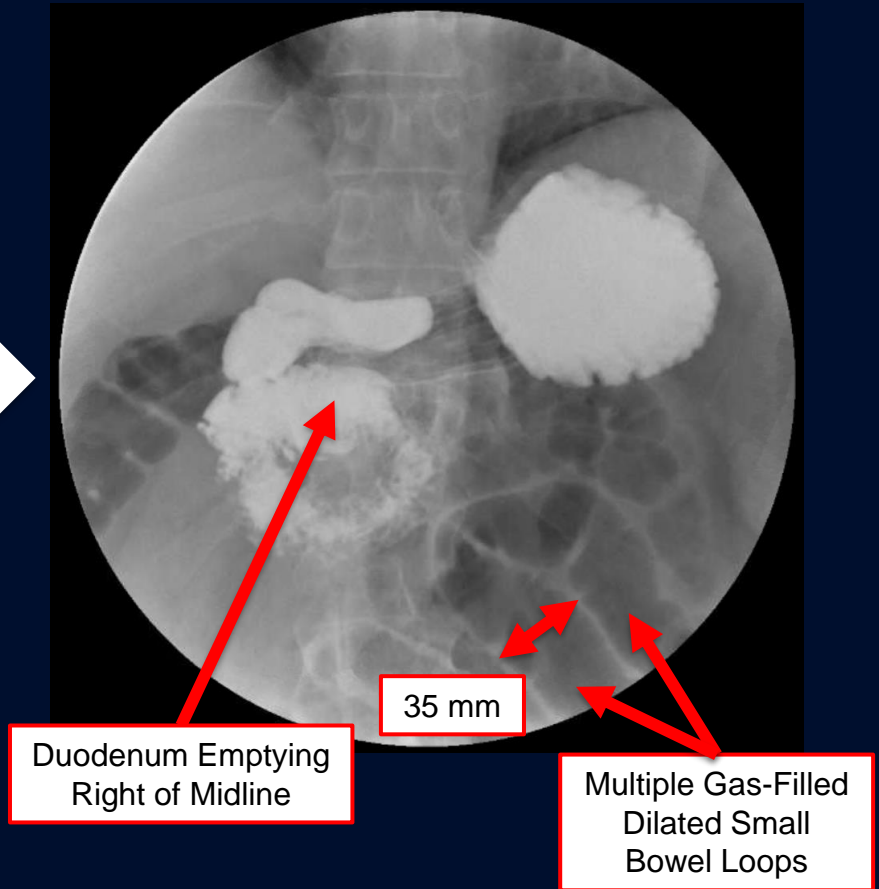
Mesenteric
Vessels

Note the convergence of small bowel and mesenteric vessels and fat.

Fluoroscopic Upper Gastrointestinal Series

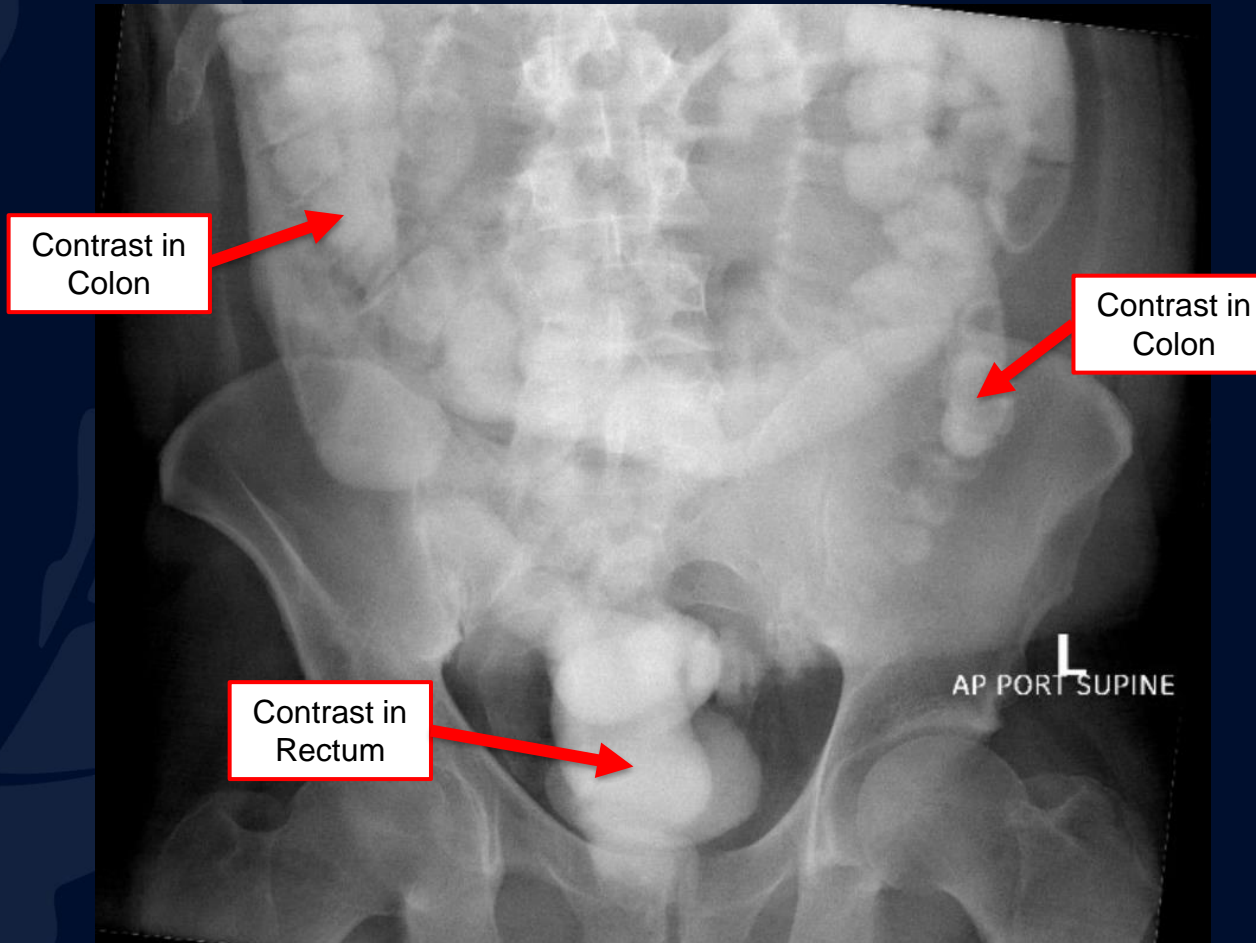


Evidence of normal bowel rotation based on the retroperitoneal course of the 2nd and 3rd segments of duodenum and the 3rd portion crossing midline.



AP Radiograph

Post-Gastrografin (90 min)



Contrast is seen throughout the entire colon extending to the rectum.

Left Paraduodenal Hernia

Epidemiology

- Incidence of internal hernias is reported between 0.2-0.9%
- Paraduodenal hernias are the most common subtype of internal hernia and account for approx. 53% of all cases
- Left paraduodenal hernias comprise approx. 75% of all paraduodenal hernias

Pathophysiology

- Occur when small bowel prolapses through fossa of Landzert (left paraduodenal fossa)
 - Congenital abnormality where small bowel mesentery and transverse mesocolon fail to fuse with the posterior parietal peritoneum
 - Present in ~2% of the population
- Small bowel loops herniate and remain trapped within the fossa of Landzert, extending into the transverse and descending mesocolon

Left Paraduodenal Hernia

Clinical Presentation

- Varies from asymptomatic to non-specific symptoms to severe symptoms of intestinal obstruction
- Often patients present with chronic postprandial pain dating to childhood
- Other presentations include vague epigastric pain, intermittent colicky periumbilical pain, and postprandial nausea and vomiting

Treatment

- Both laparoscopy and open surgical repair have been described in the literature with similar long-term outcomes

Left Paraduodenal Hernia

Differential Diagnosis

- Time to diagnosis is often delayed due to the rarity of this condition
 - 21-23 months on avg. is reported the literature
- Some diagnoses with similar presentations include gastritis, biliary colic, ileitis, diverticulitis, inflammatory bowel disease, irritable bowel syndrome, volvulus, and small bowel obstruction
- Right Paraduodenal Hernia
 - Small bowel loops herniate through the fossa of Waldeyer
 - Located caudal to third portion of the duodenum and posterior to the SMA or ileocolic artery

Imaging Findings

CT with IV contrast

- Multiple distended (>3 cm) small bowel loops
- Convergence of small bowel and mesenteric vessels and fat at site of herniation (Fossa of Landzert)
- Inferior Mesenteric Vein and Ascending Left Colic Artery form the anterior and medial border of the hernia and may be displaced laterally
- Engorgement and stretching of mesenteric vessels may be seen within hernia
- Mass effect may displace stomach wall, duodenojejunal junction, and transverse colon
- Possible evidence of small-bowel obstruction with dilated bowel loops and air-fluid levels

Imaging Findings

Fluoroscopic Upper Gastrointestinal Series

- Important to assess for malrotation
 - Key finding is an abnormal duodenojejunal junction (will not cross midline)
 - 2nd and 3rd portions of duodenum will not be retroperitoneal

Abdominal Radiographs 'Gastrografin Challenge'

- Important to assess for obstruction
 - In this case, contrast would not progress to the colon and rectum

References

Mathieu D, Luciani A; GERMAD Group. Internal abdominal herniations. *AJR Am J Roentgenol*. 2004;183(2):397-404.

Manojlović D, Čekić N, Palinkaš M. Left paraduodenal hernia - A diagnostic challenge: Case report. *Int J Surg Case Rep*. 2021 Aug;85:106138.

Cundy TP, Di Marco AN, Hamady M, Darzi A. Giant left paraduodenal hernia. *BMJ Case Rep*. 2014 May 2;2014:bcr2013202465.

Kelahan L, Menias CO, Chow L. A review of internal hernias related to congenital peritoneal fossae and apertures. *Abdom Radiol (NY)*. 2021;46(5):1825-1836.