



GI bleeding

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Disclosures

- Nothing to disclose

GI bleeding

- Upper: Before the ligament of Treitz
 - Hematemesis, melena
- Lower: After the ligament of Treitz
 - Hematochezia
- Outside the GI tract
 - Surgery?
 - Previous trauma
 - Pancreatitis
- Hemodynamically unstable (non-trauma) patient
 - Bleeding in organs is excluded

GI bleeding - reasons

- Many reasons.....
- Ask for the clinical history
 - Important for narrowing your search
- Is the patient hemodynamically stable?
 - Should the patient be followed by the surgeon to the scanner?
 - Is the patient safe in the scanner?

GI bleeding – CT

- How many phases?
 - Pre-contrast
 - Arterial
 - Venous
- What about virtual non-contrast?
- How much contrast agent?
 - 100 ml 350 mg I/ml (weight adjusted)
 - Flow 4 ml/s
 - Bolus triggering
- When can we see the bleeding?
 - 0.3-0.5 ml/min

GI bleeding – CT

- Pre-contrast
 - Is there a hematoma/signs of blood?
 - Is there any disturbing oral contrast agent, staplers etc?
- Arterial (5-10s after surestart in the aorta)
 - Is the bleeding arterial?
 - Is there a pseudoaneurism?
- Venous (60-65 s later)
 - Is the bleeding venous?
 - Has the arterial bleeding increased?
 - Is there a pseudoaneurism?

GI bleeding – why CT?

- Detection and characterisation
- Diagnosis of other abdominal pathology
- Speed and availability
- Ability to target invasive angiography or surgery

Sensitivity of 85% and specificity of 92% for identifying the bleeding source.
Garcia-Blazquez 2013

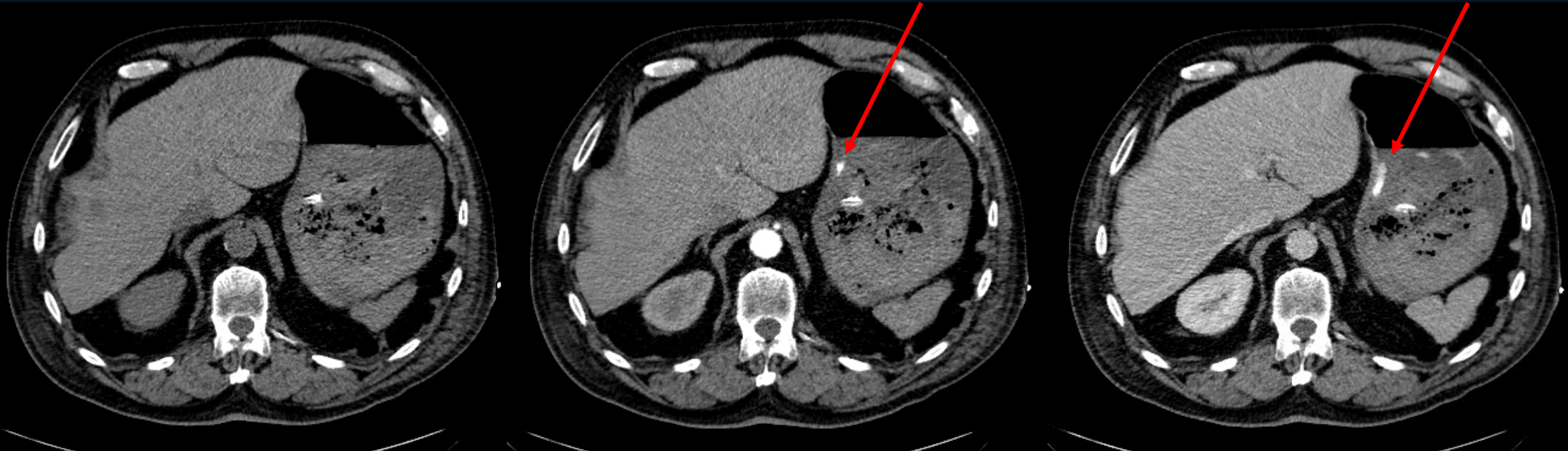
GI bleeding - treatment

- Interventional radiology
- Surgery

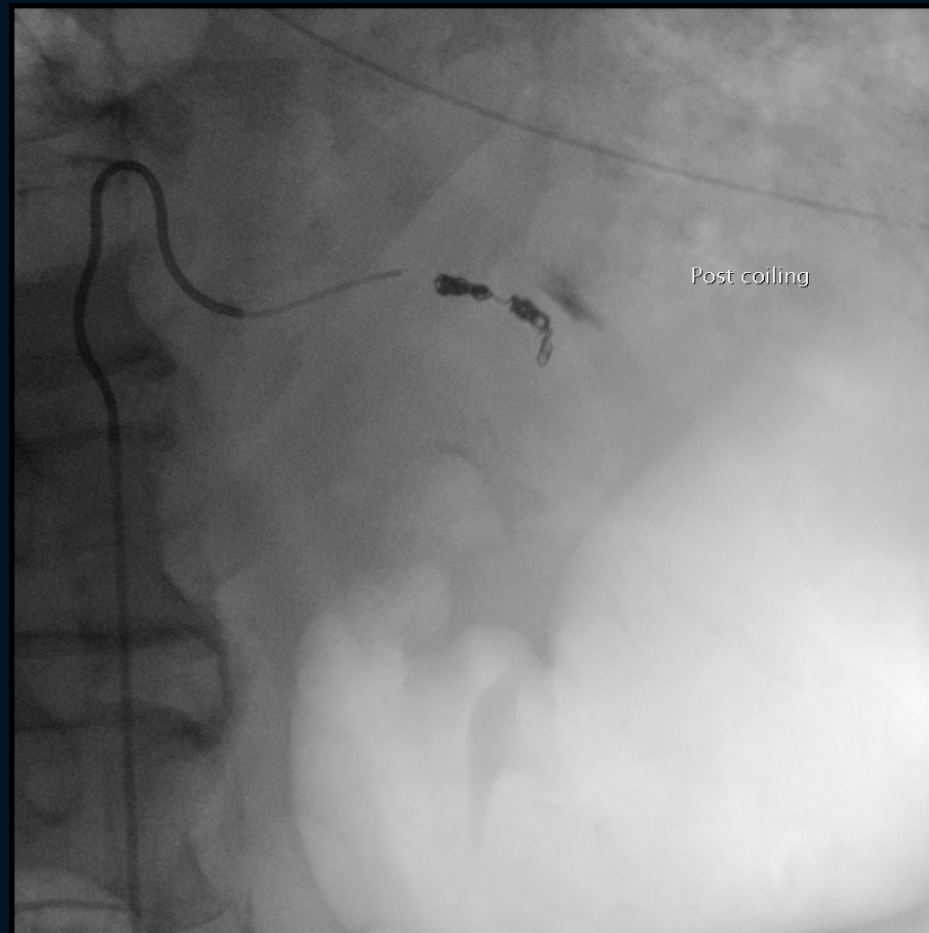
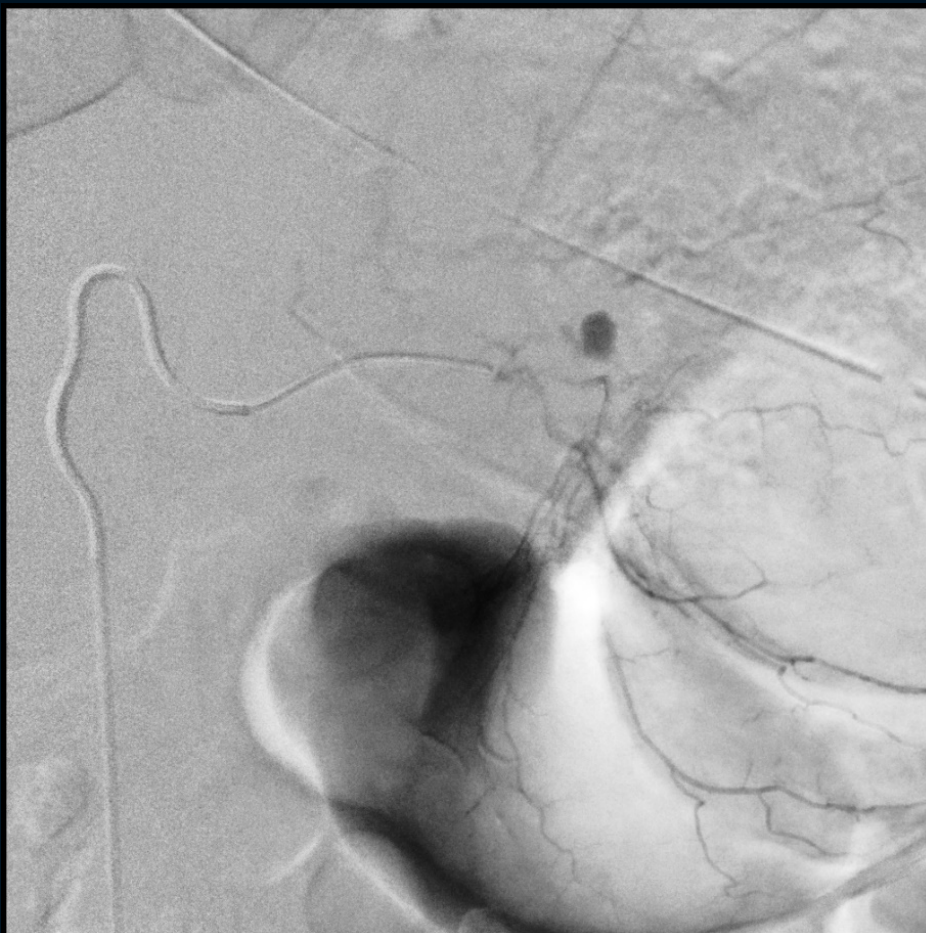


Case 1

- 72 yo male. Bleeding in the gastric fundal area about 400 ml/hour. Unsuccessful gastroscopy x2

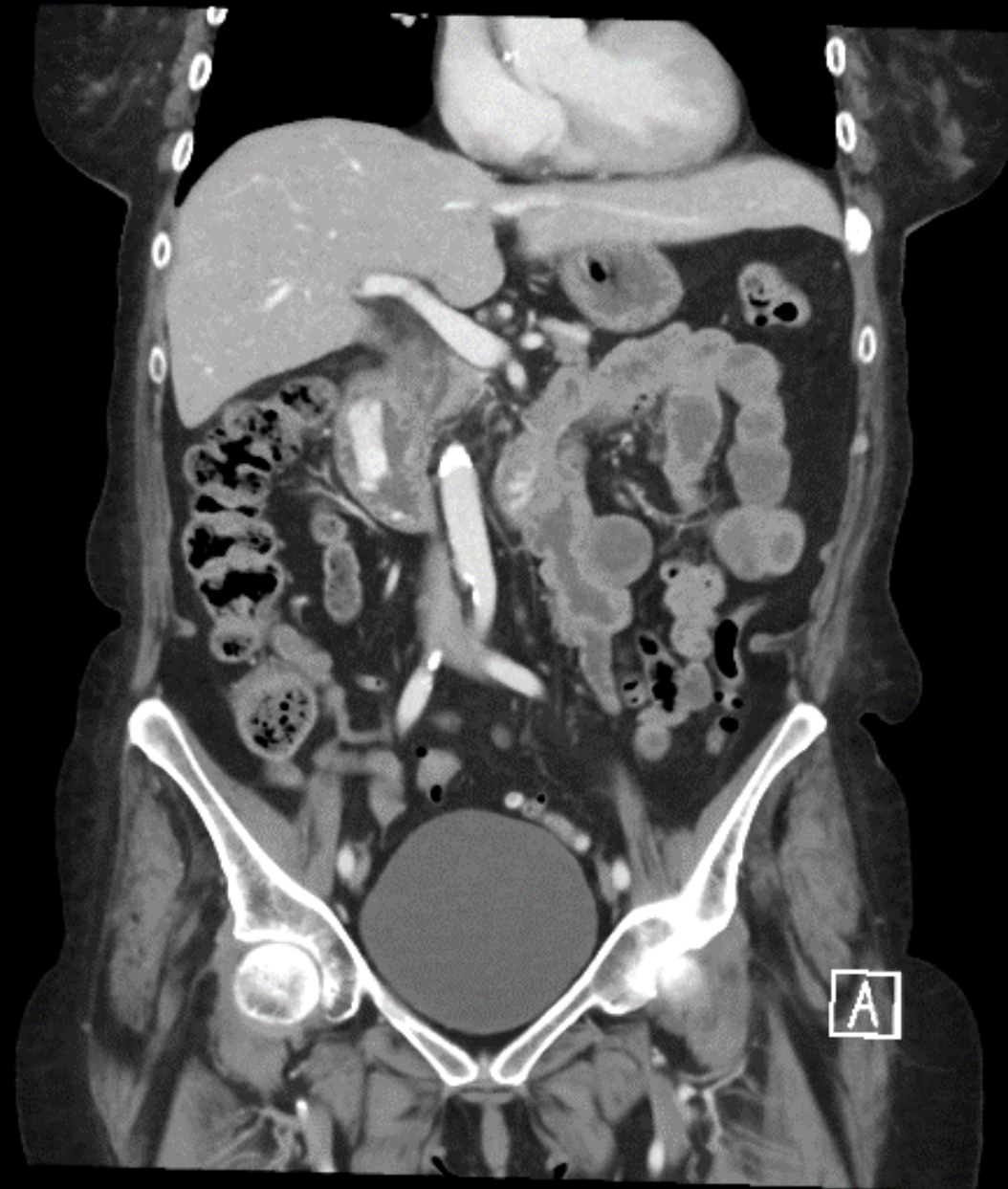


Case 1 - treatment



Case 2

- Epigastric pain for 4 days, nausea and Hgb ↓



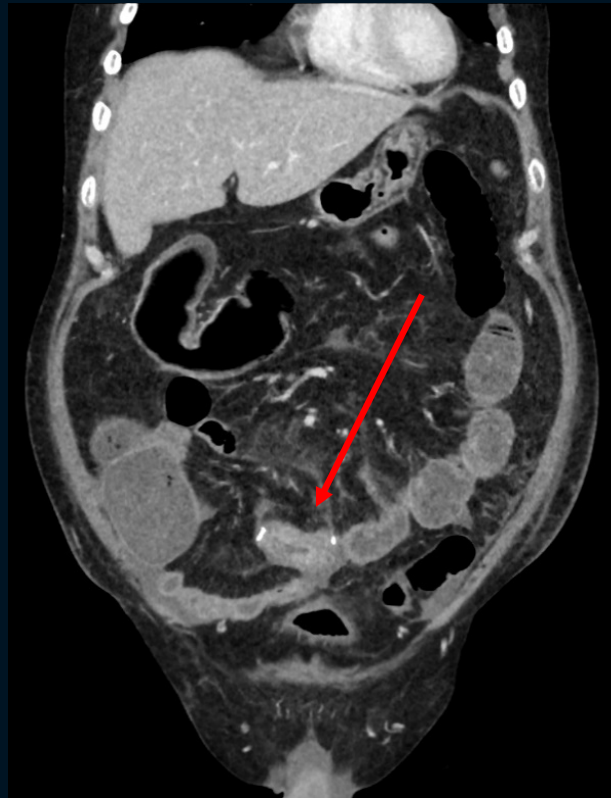
Case 3

- 51-yo male. POD 3 after closure of an ileostomy. Hematochesia, Hgb↓, signs of bowel obstruction. Bleeding at the anastomosis?



Case 3

- Treatment: surgery with small bowel resection and side to side anastomosis



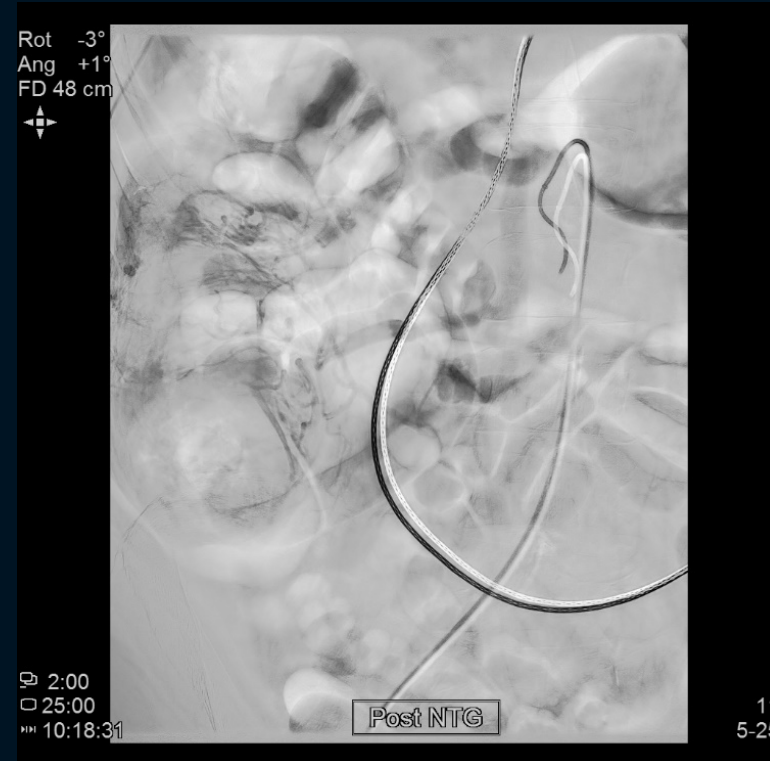
Case 4

- 65-yo male. Heart failure and Heartmate implant. Dysregulated antithrombotic medication (INR 4.9). 2 days with hematochesia

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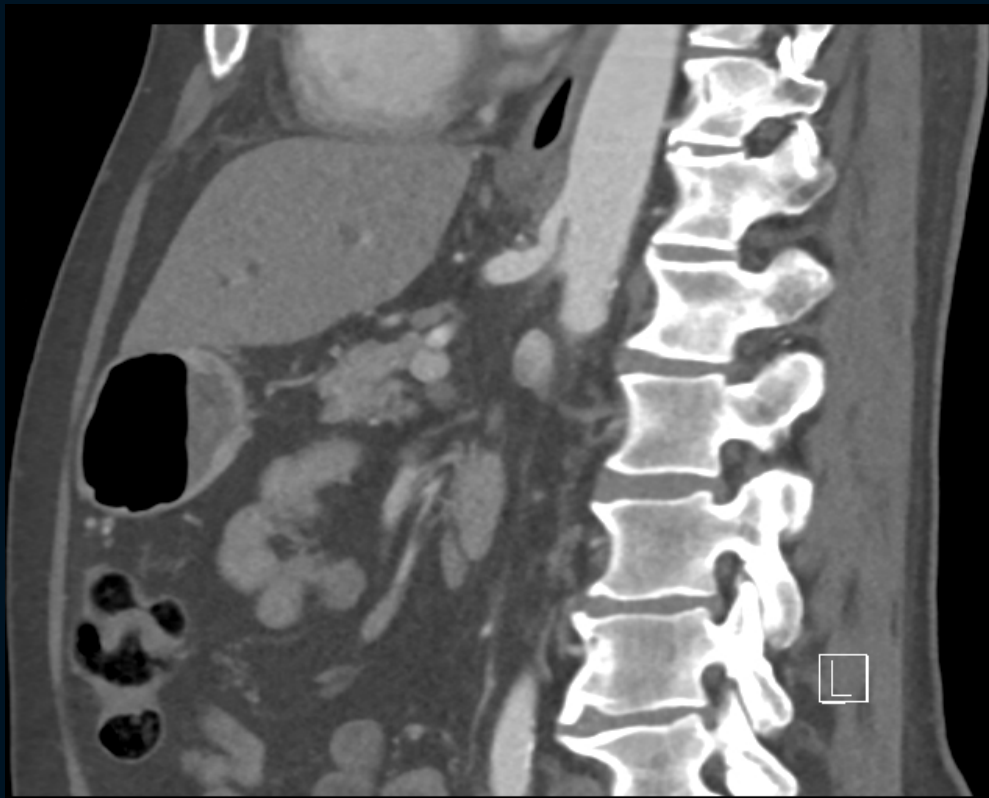
Case 4

Treatment: Embolisation with histoacryl/lipiodol. Previous CT without bleeding but with signs of angiodysplasia in colon (fast filling of SMV branch)



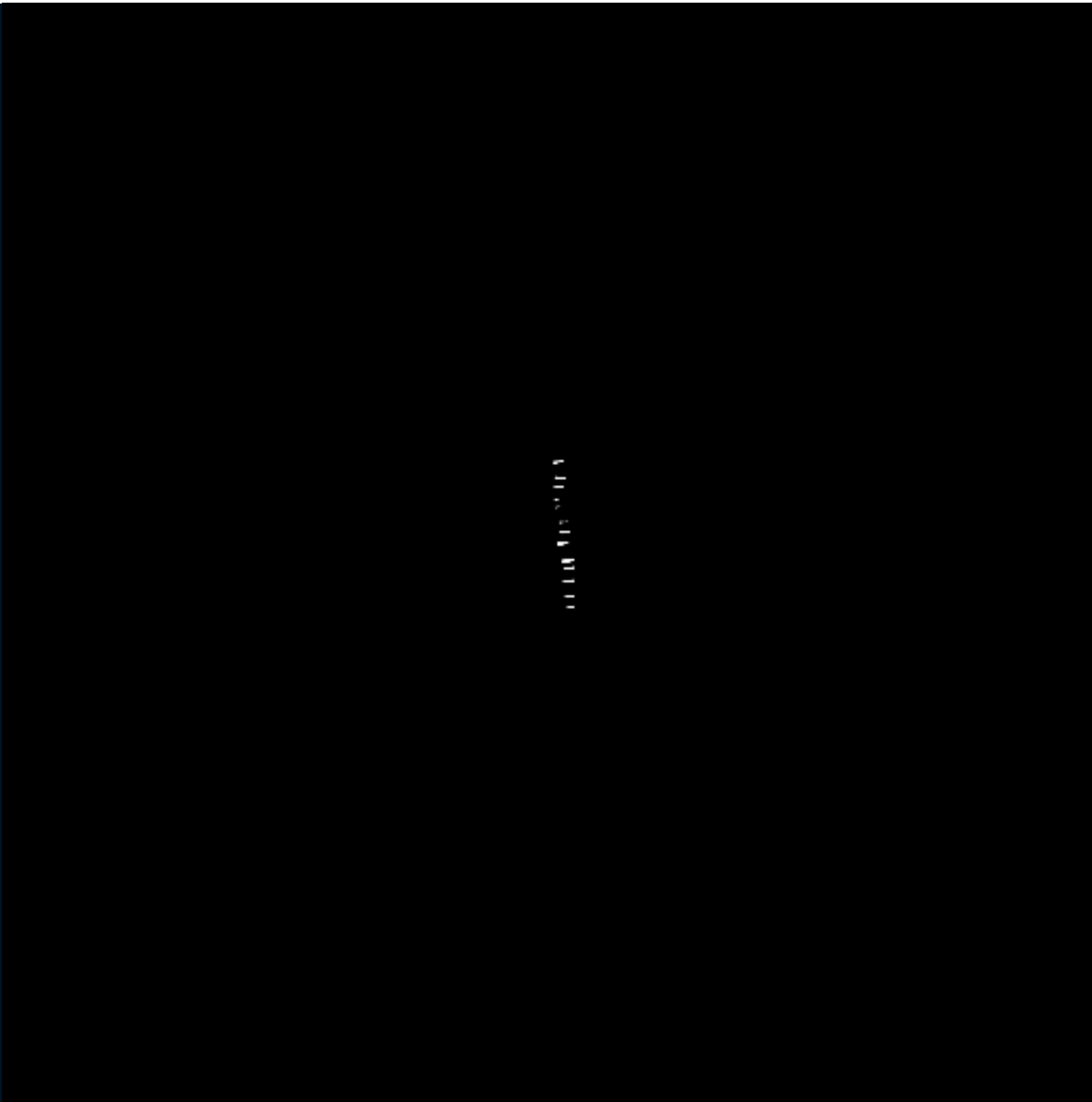
Pseudoaneurisms

- Incidental finding of GDA aneurisms in a pt with MALS (pt with pancreatic cancer)



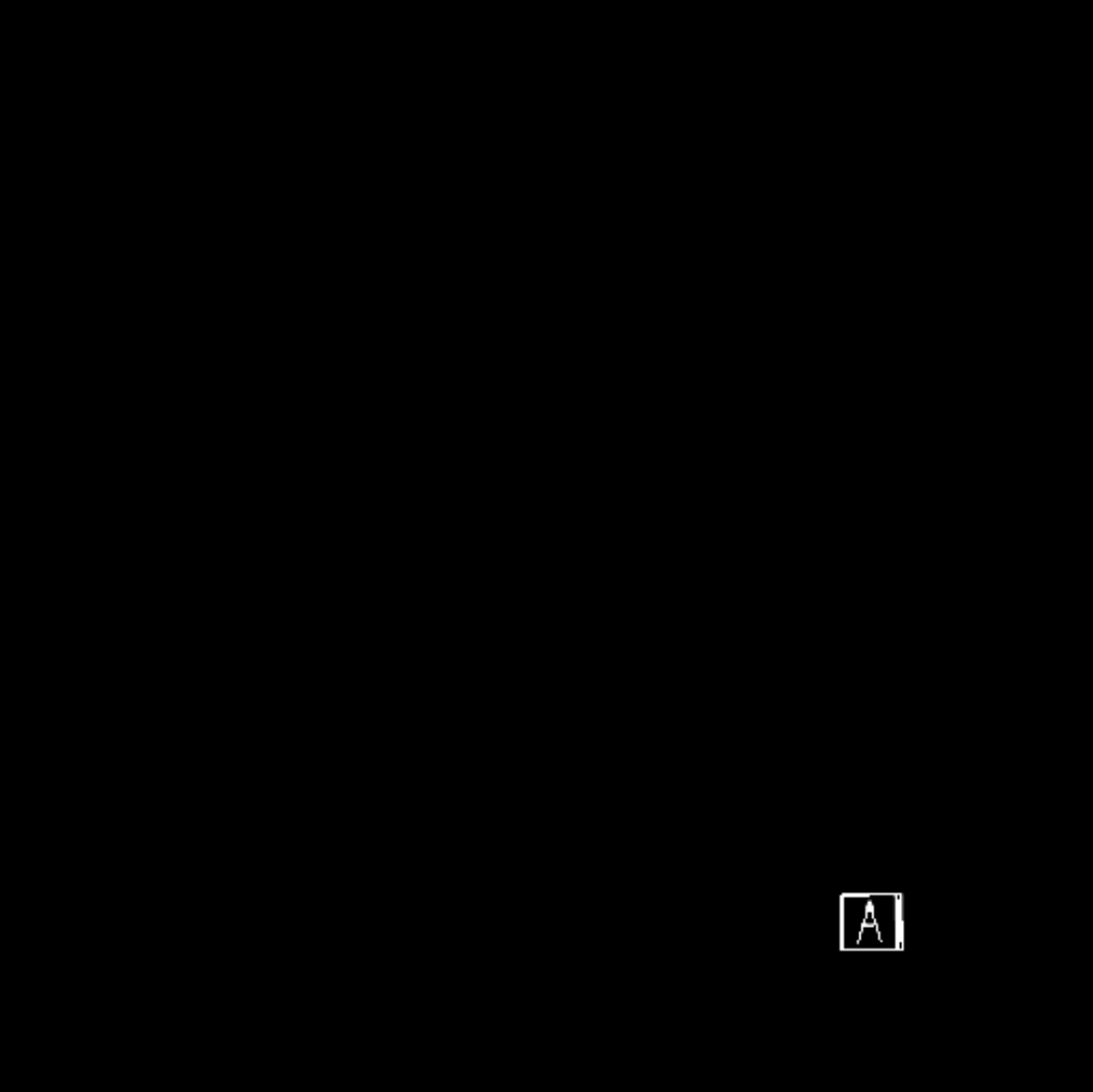
Case 5

- 74-yo male. Whipple procedure 10 days prior. Sudden abdominal pain

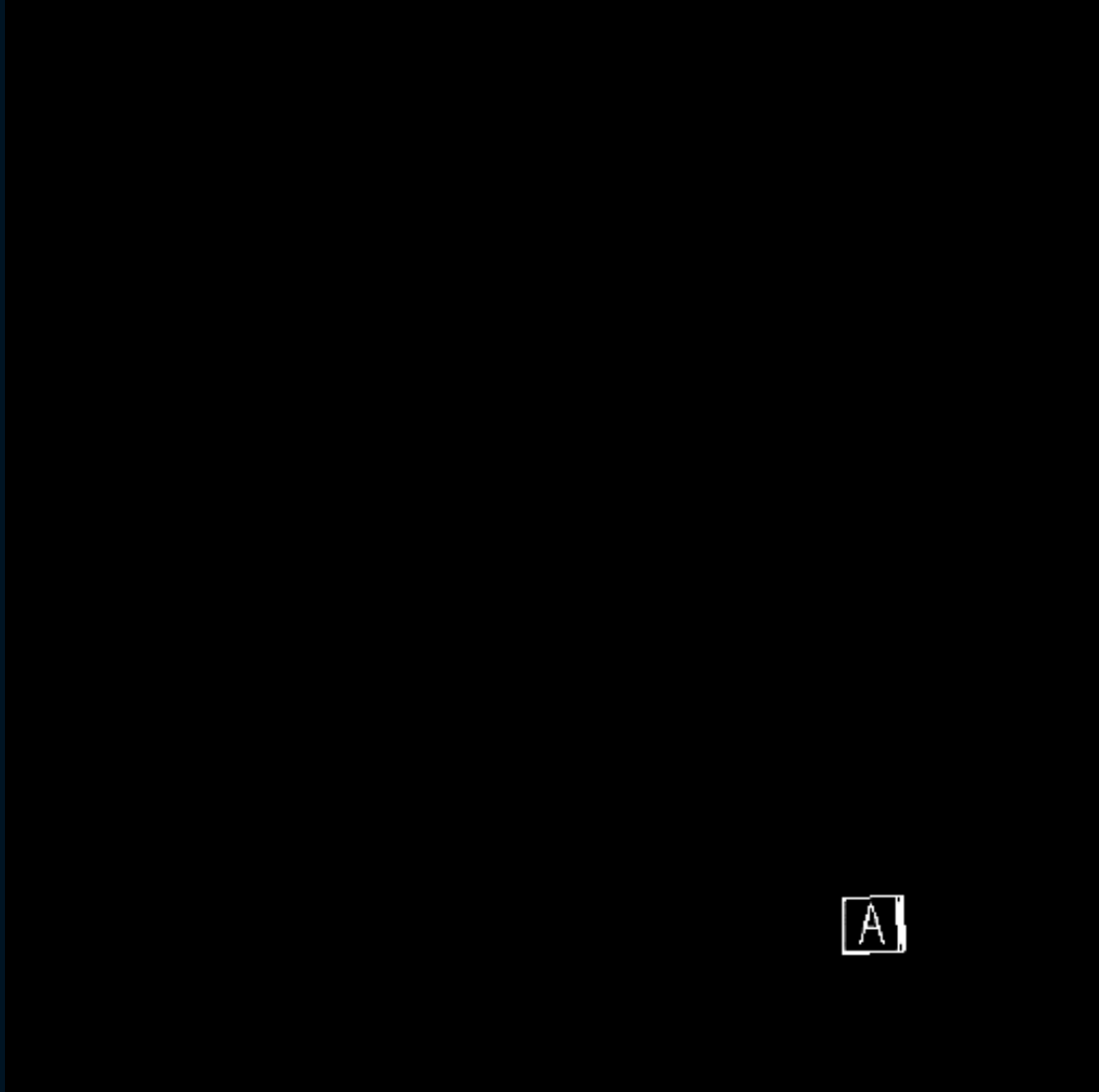


Case 6

- 45-yo male with hemorrhagic pancreatitis due to gallstones



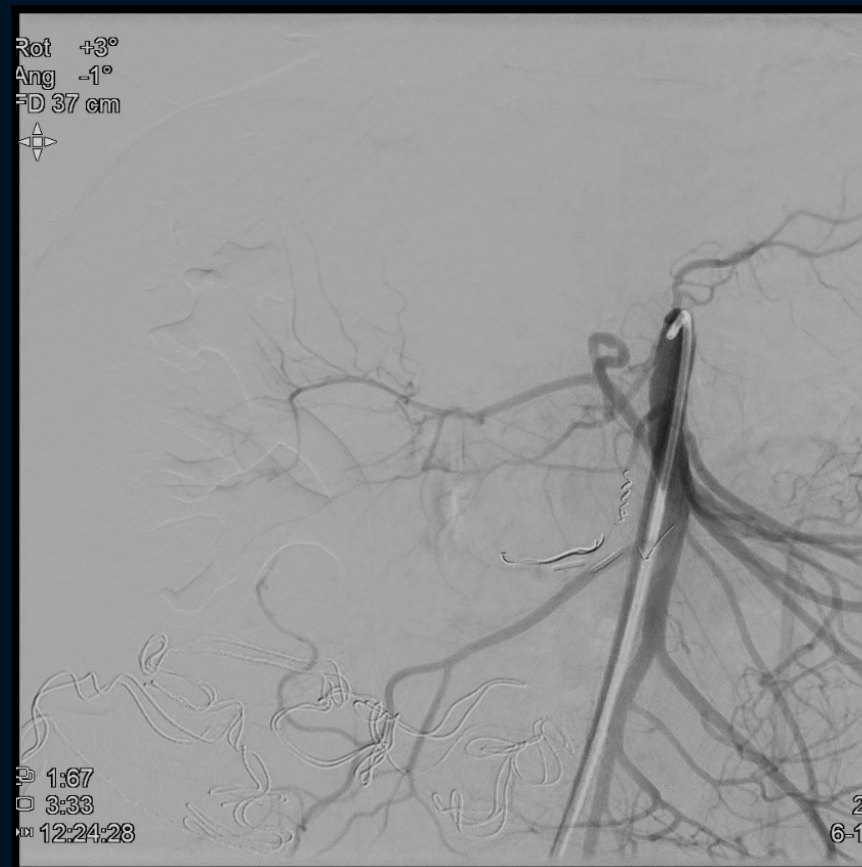
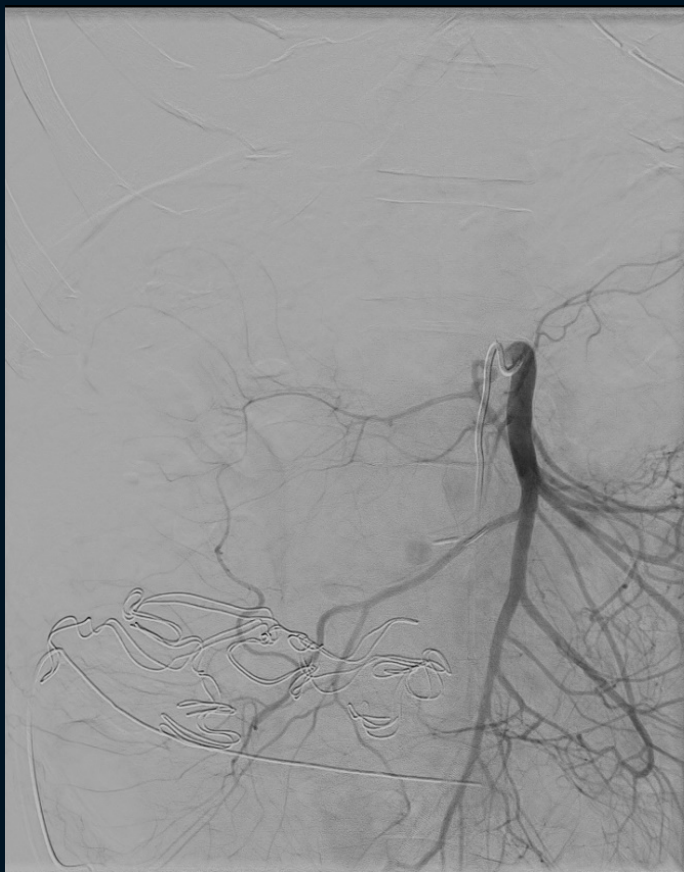
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Case 6

- Embolisation



Take home messages

- Suspicion of GI bleeding → CT in 3 phases if the patient is stable
 - Non-contrast
 - Arterial
 - Venous
- Remember clinical history
 - Upper vs. lower GI bleeding
 - Pseudoaneurisms
- If there is doubt about bleeding in the history: add non-contrast phase
- More reading: *Guglielmo FF et al. Radiographics 2021*

