AMSER Case of the Month: July 2025

49-year-old female with pelvic fluid collections anterior and posterior to uterus

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Patient Presentation

- Chief Complaint
  - Patient initially presented to an outside hospital ED with severe abdominal pain, fevers, and leukocytosis
- History of Present Illness
  - Patient underwent diagnostic laparoscopy due to concern for acute abdomen with ruptured endometrioma and peritonitis
    - Laparoscopy revealed “chocolate-like brown material”
    - Underwent irrigation of abdominal contents
  - CTAP at the time revealed bilateral adnexal lesions
- Past medical history
  - Obesity
  - Type II Diabetes
  - Hypothyroidism
  - Hypertension

Patient Presentation

- Vitals
  - Temp: 98 F
  - O2: 92-96% on 2LNC
  - BP: 122/54
  - HR: 85
- Pertinent labs
  - WBC: 14.50
  - ANC: 11.27 K/CUMM
  - HgB: 9.4 (baseline)
  - Serum HCG: < 2.42 (negative)

Patient Presentation

- Hospital admission
  - The patient was admitted after transfer from the outside hospital for further gynecological workup and a higher level of care
    - Patient continued to endorse worsening abdominal pain after hospital admission
  - CTAP at outside hospital revealed bilateral adnexal lesions
  - Transvaginal ultrasound revealed multi-cystic ovarian lesions that the radiologist believed would be better evaluated with pelvic MRI
    - Suspicious for multifocal infection vs. malignancy

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 7: **Adult patient assigned female at birth. Adnexal mass, highly suspicious for malignancy on pelvic US, no acute symptoms. Premenopausal or postmenopausal. Next imaging study for characterization.**

Procedure	Appropriateness Category	Relative Radiation Level
MRI pelvis without and with IV contrast	Usually Appropriate	O
MRI pelvis without IV contrast	May Be Appropriate	O
CT pelvis without and with IV contrast	May Be Appropriate (Disagreement)	☢☢☢☢
CT pelvis with IV contrast	Usually Not Appropriate	☢☢☢
CT pelvis without IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢

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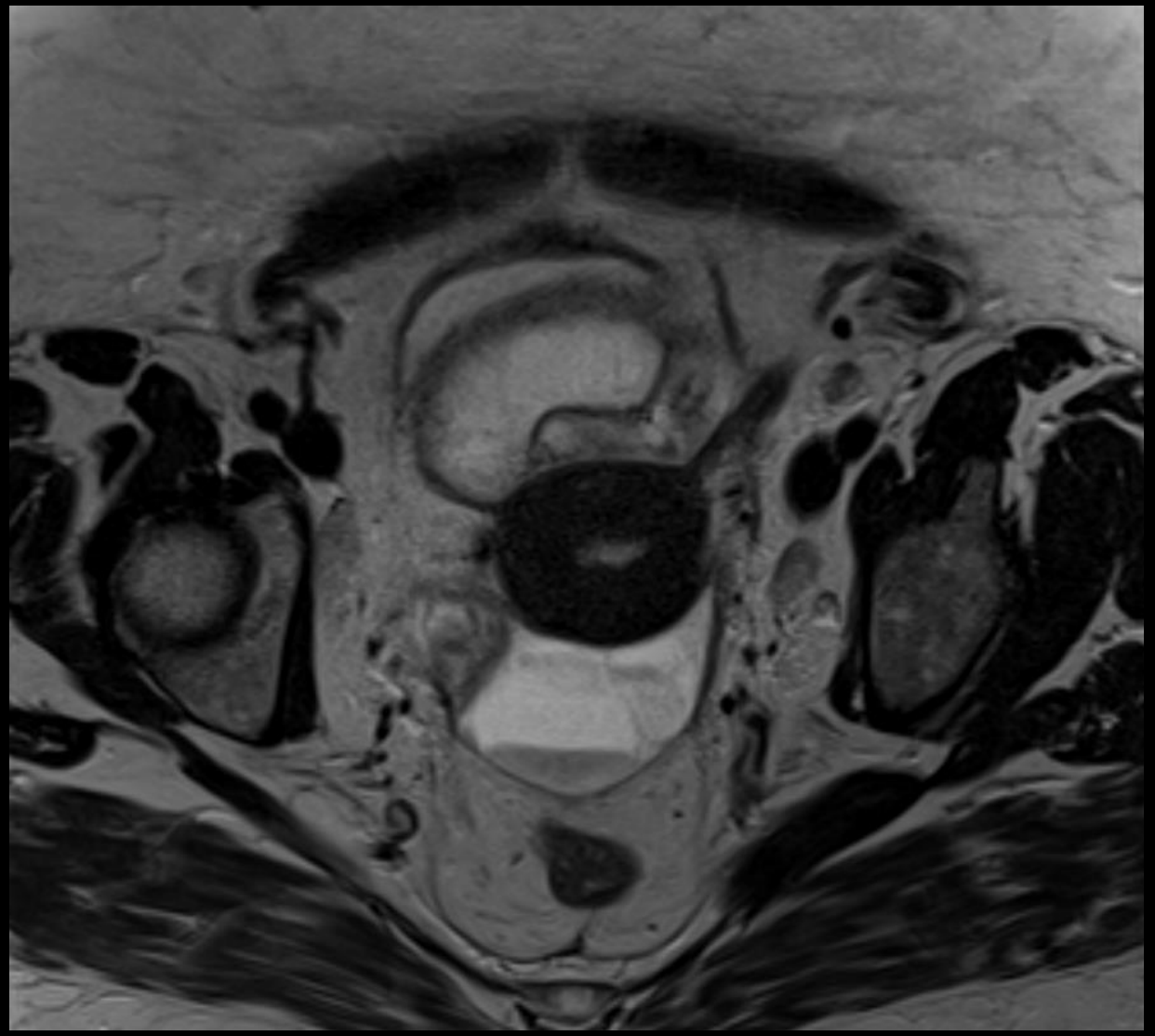
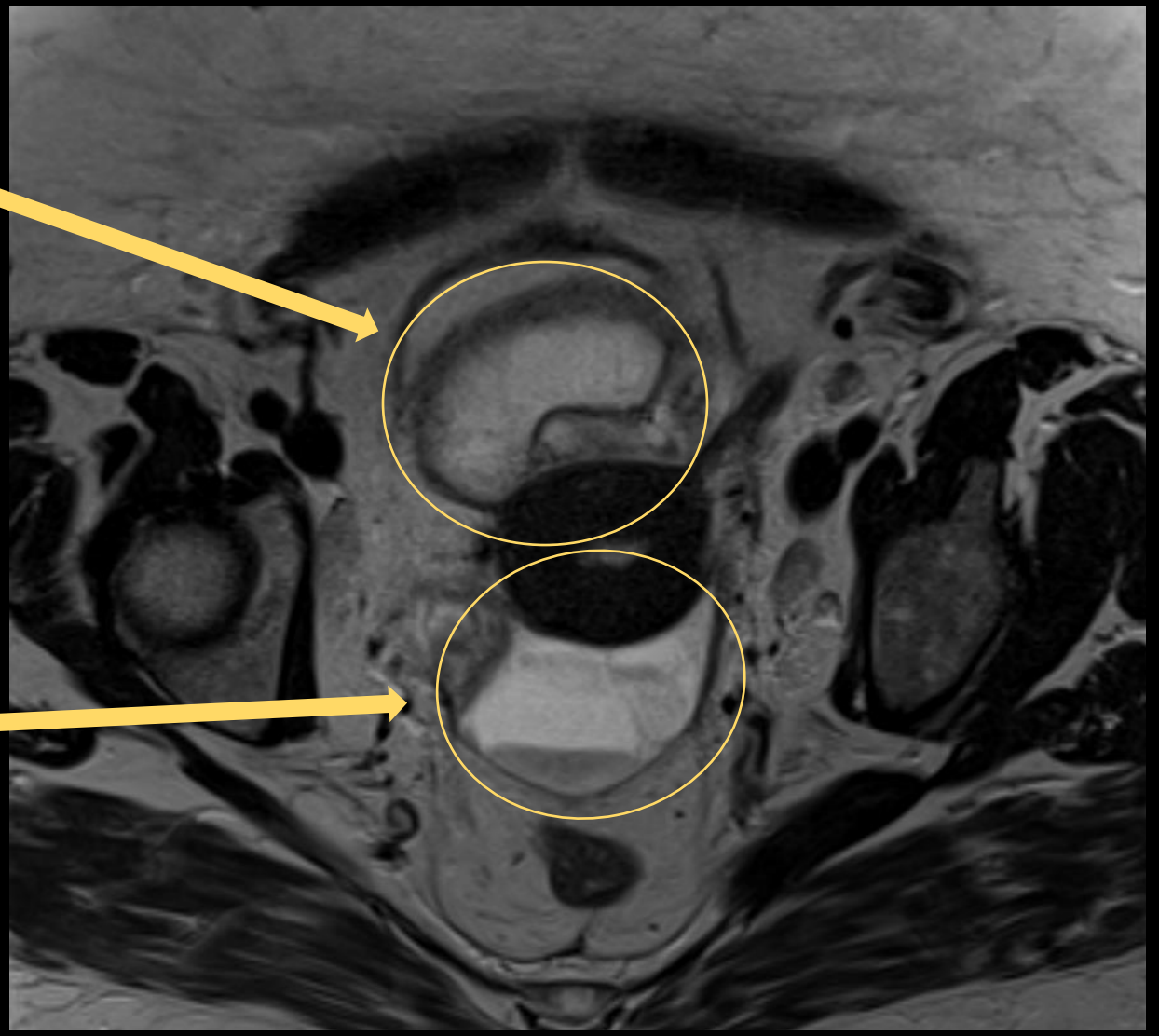
Findings: MRI pelvis w contrast (unlabeled)



Findings: MRI pelvis w contrast (labeled)

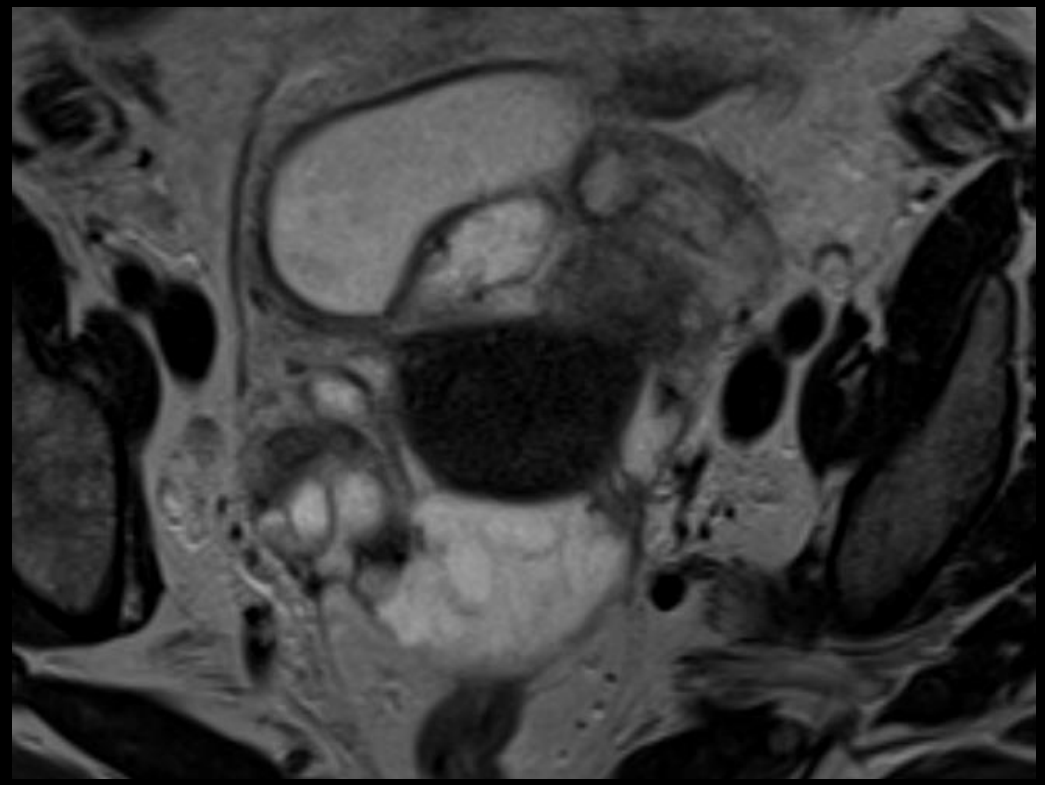
Anterior pelvic fluid collection

Rectouterine space collection with layering T1 hyperintense material

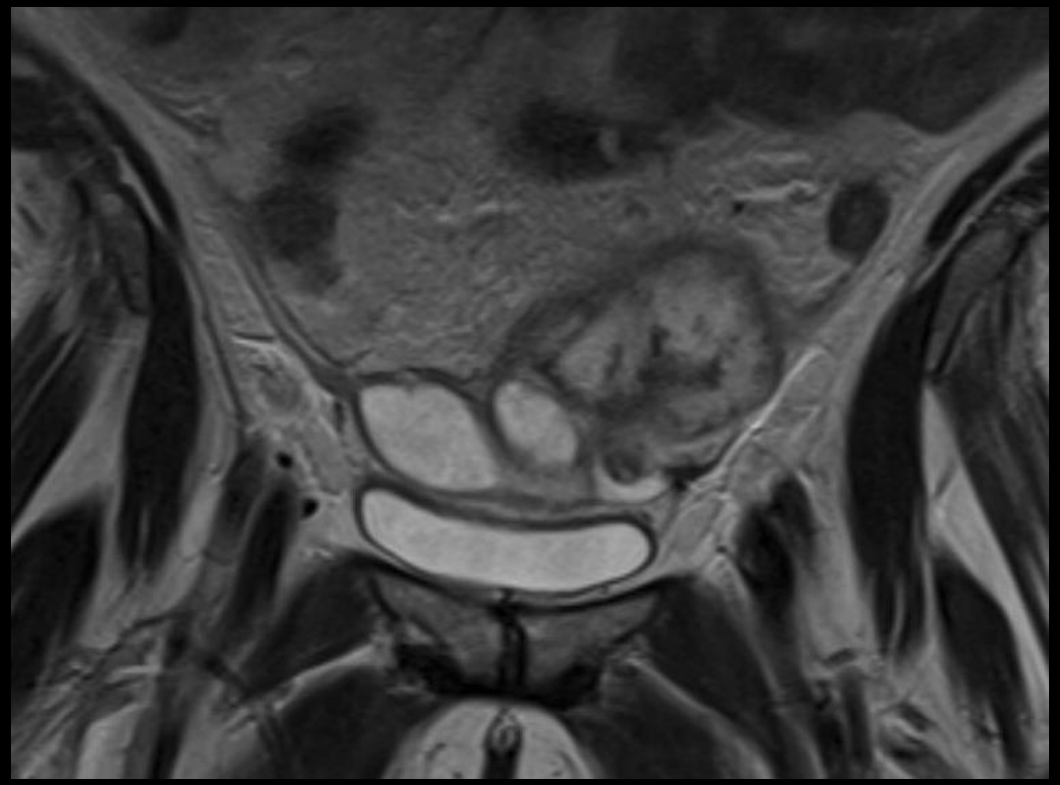


Findings: MRI pelvis w contrast (unlabeled)

Axial

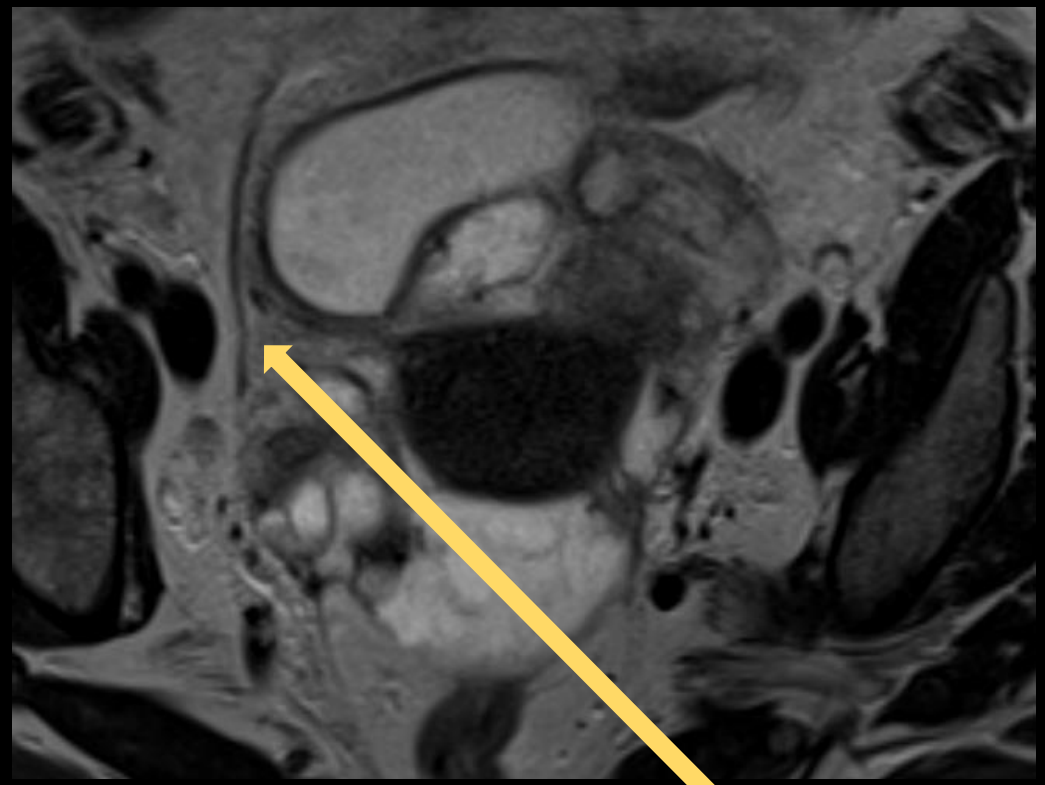


Coronal

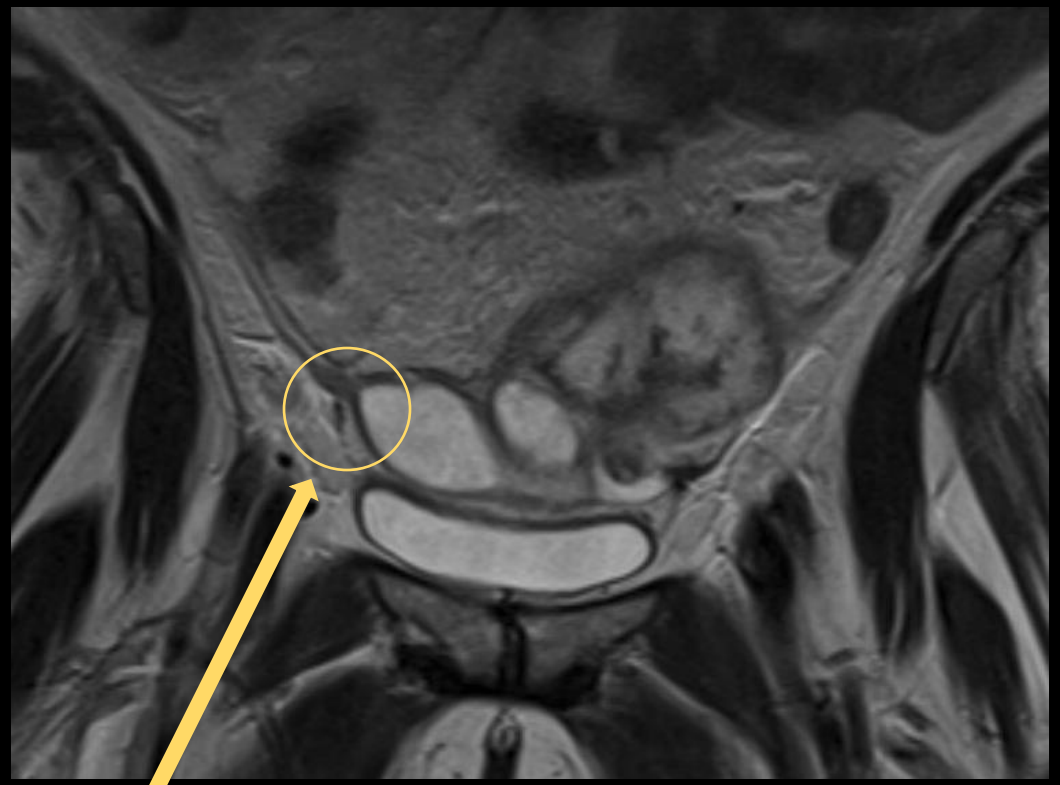


Findings: MRI pelvis w contrast (labeled)

Axial

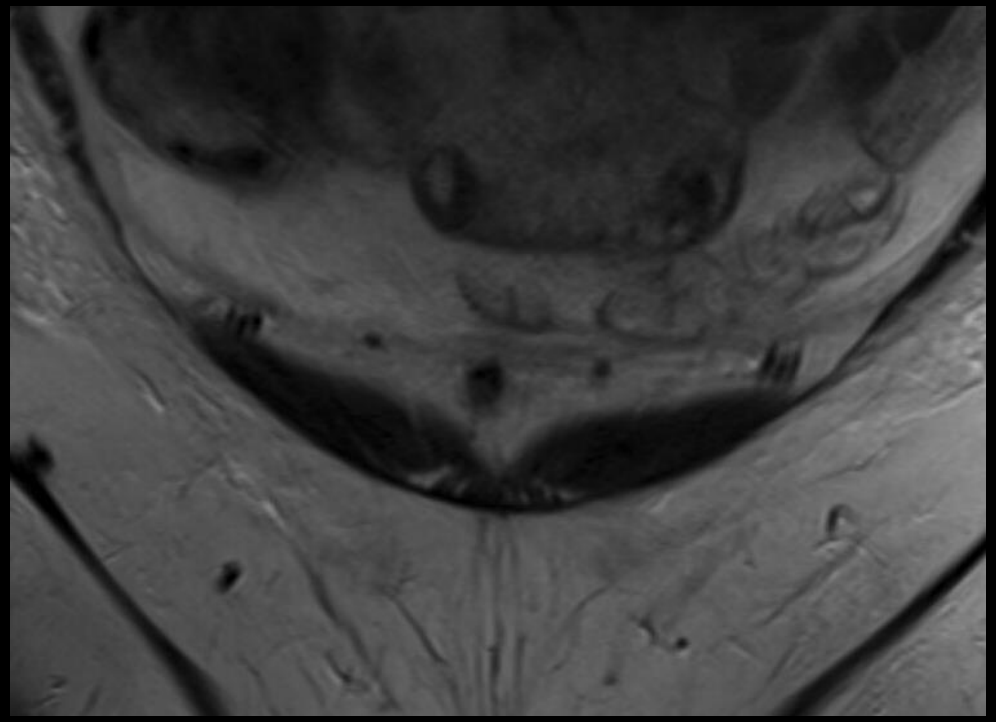


Coronal



persistent umbilical vein

Image: MRI pelvis (unlabeled)



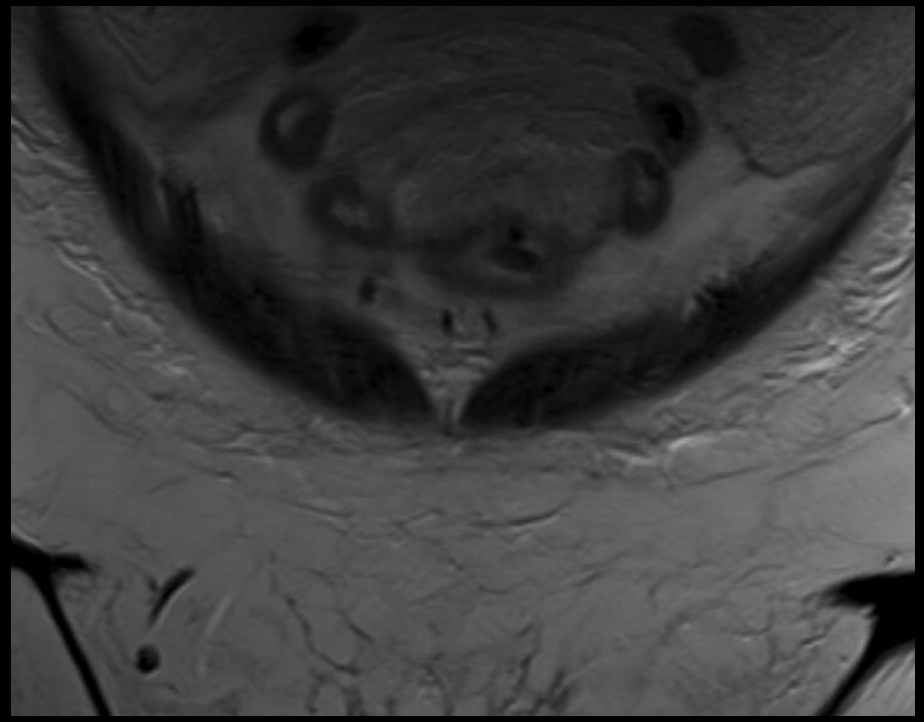


Image: MRI pelvis (labeled)

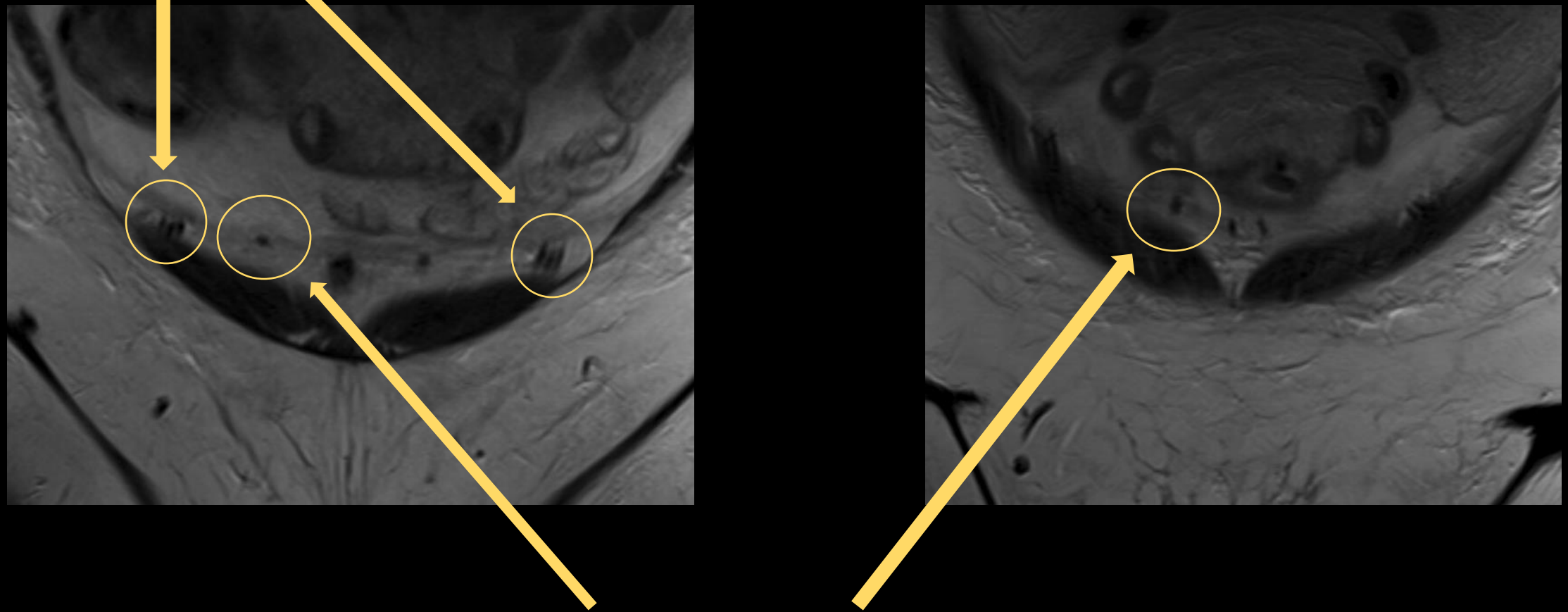


Image: CT 8/20 sagittal (unlabeled)

Sagittal

Axial

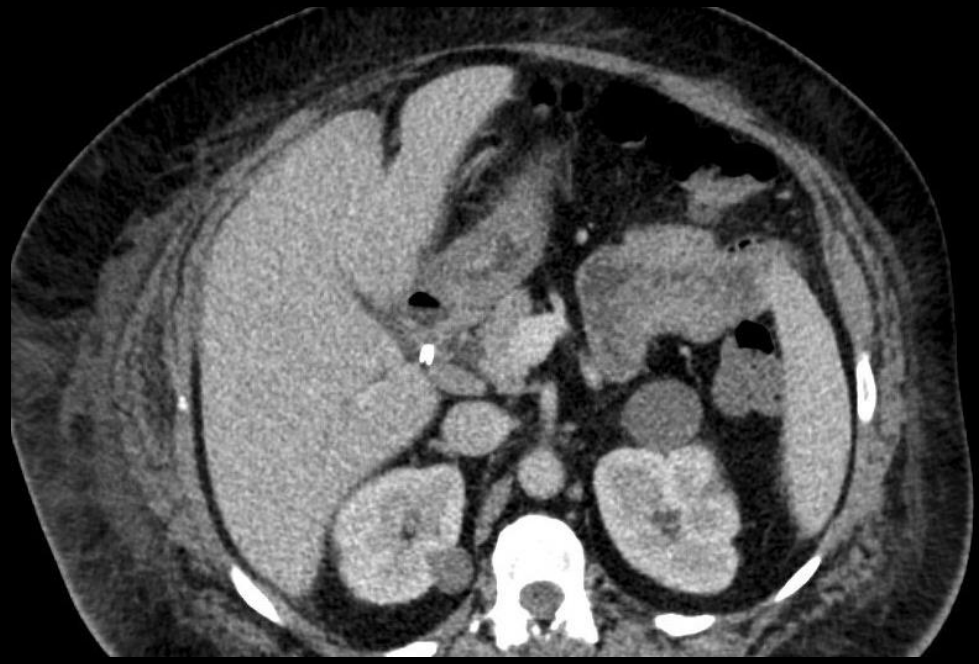
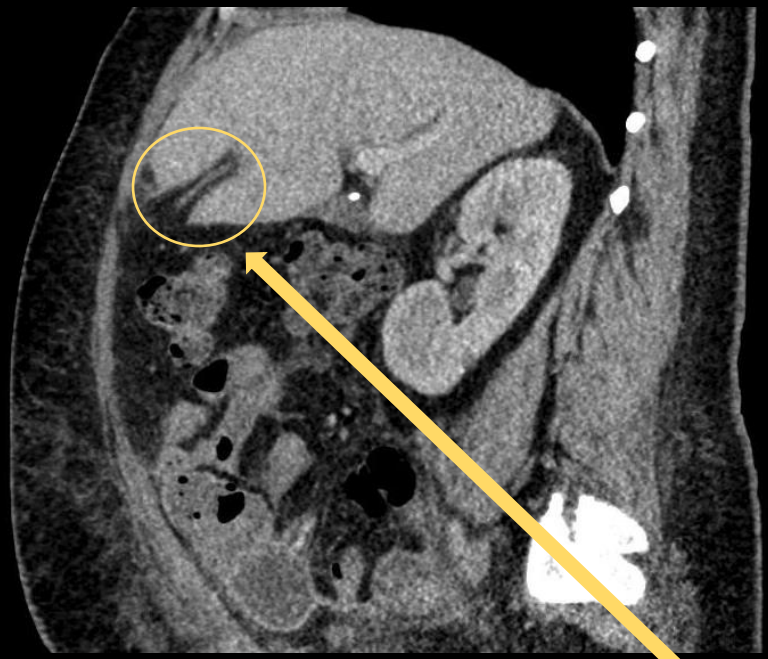
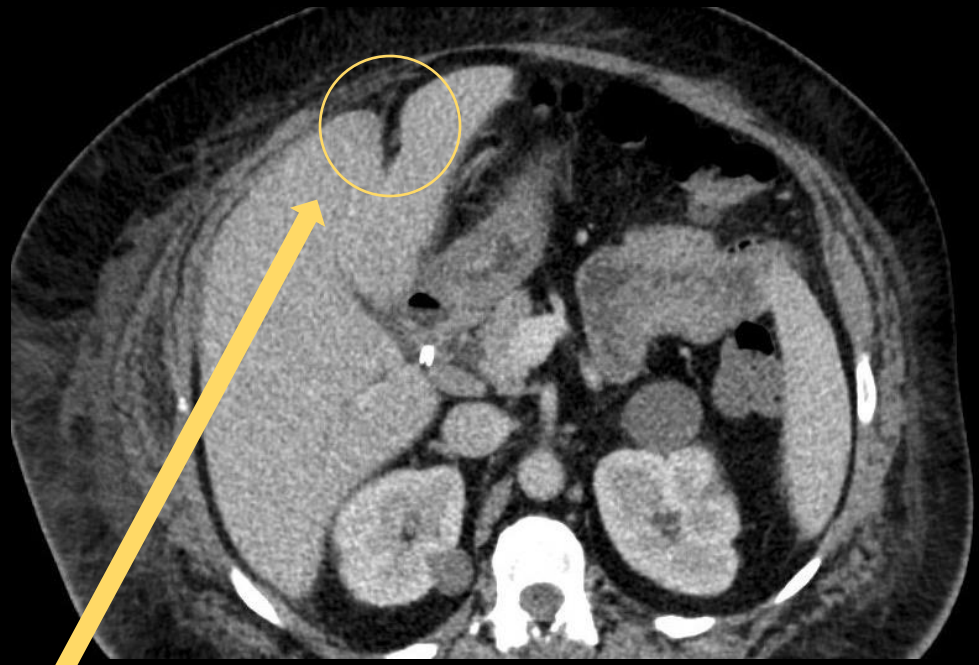


Image: CT 8/20 sagittal (labeled)

Sagittal



Axial



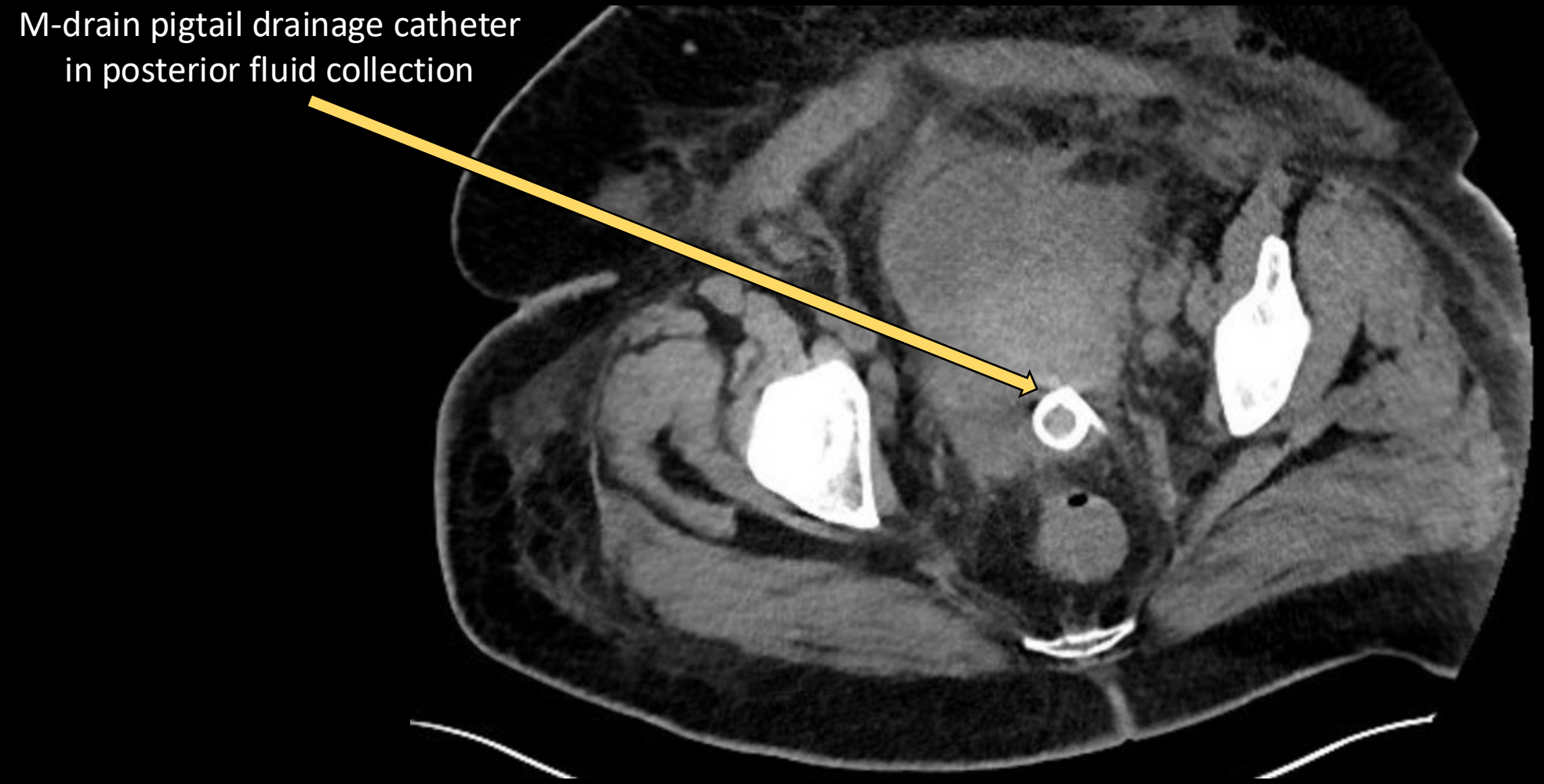
Recanalized paraumbilical vein

Treatment

Pelvic drain placement done by interventional radiology

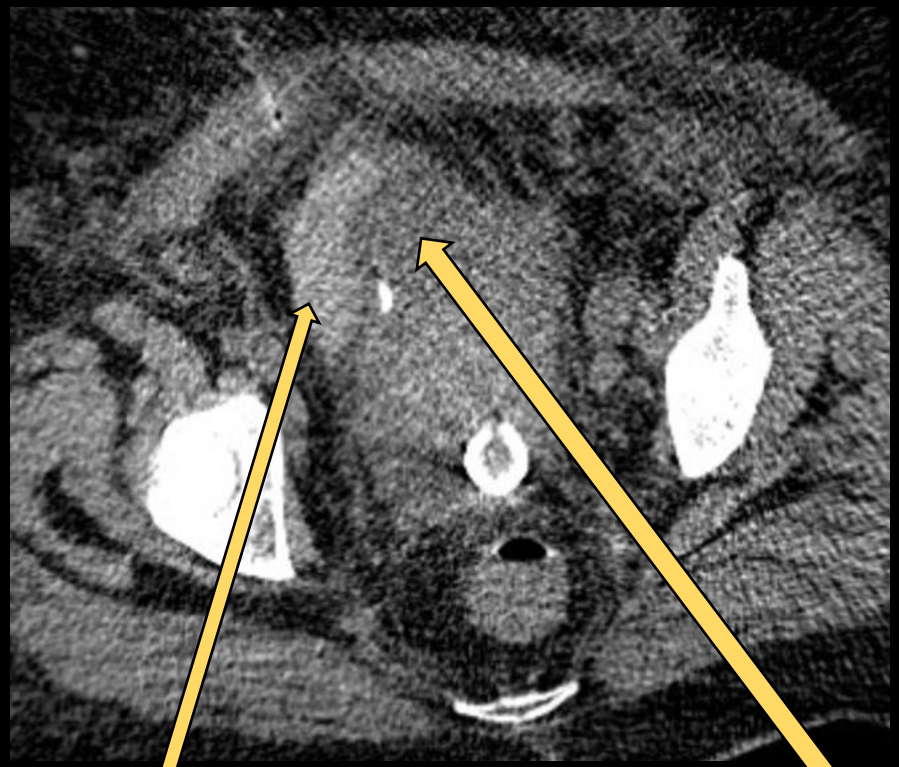
Findings: Pelvic CT with intravesicular contrast (unlabeled)

Findings: Pelvic CT with intravesicular contrast (labeled)



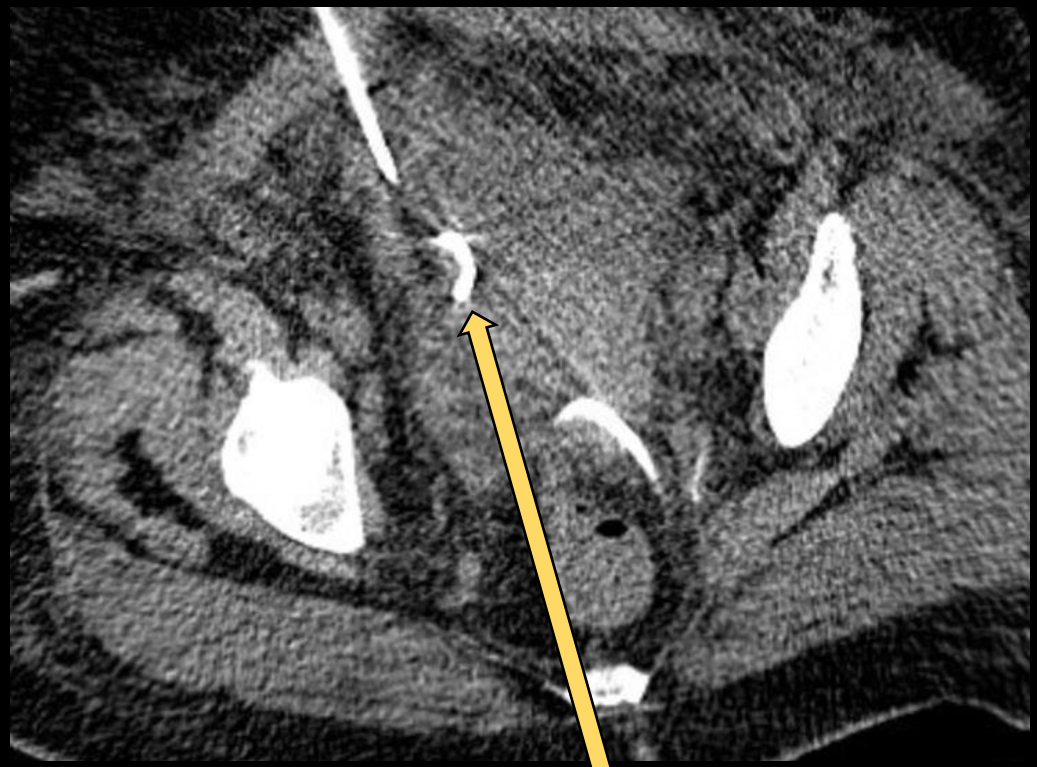
Findings: Pelvic CT with intravesicular contrast (unlabeled)

Findings: Pelvic CT with intravesicular contrast (labeled)



50cc of
Iodinated contrast inserted through foley catheter to differentiate between fluid collection and bladder

Anterior fluid collection between bowel and bladder



M-drain pigtail drainage catheter placed in anterior fluid collection abutting the bladder

Post-Op Findings

- Drain #1 was placed in the posterior fluid collection with patient prone
  - This allowed for near-complete drainage of the collection which was found to be brown and purulent
- Drain #2 was placed in the anterior fluid collection with patient supine
  - Placed between bowel and bladder (superiorly/inferiorly) and epigastric artery and persistent umbilical artery (laterally/medially)
  - Drained fluid which was brown and purulent
- In total ~100mL of brown fluid was drained

Final Diagnosis

Pelvic Endometriosis with Ruptured Endometriomas (with persistent umbilical vein)

Case Discussion: Pelvic Fluid Collections

- Endometriomas are cystic lesions due to endometriosis
  - Caused by seeding of ectopic endometrial tissue
  - Commonly found in the ovaries
  - Filled with dark brown fluid
    - Often called “chocolate cysts”
  - Can lead to pelvic pain and eventual infertility
- Endometriosis affects about 10% of women of reproductive age
  - Risk factors include
    - Nulliparity
    - Early menarche
    - Heavy menopause

Case Discussion: Pelvic Fluid Collections

- Diagnosis
  - Diagnostic CT is performed to assess location of collection and to plan for drainage needle placement
  - Radiopaque skin markers are used to guide the route to each collection
- Treatment
  - CT-guided percutaneous drainage
    - Minimally invasive use of CT to guide needles and drainage catheters to resolve bodily collections
    - Very safe and effective

Case Discussion: Paraumbilical Veins

- Paraumbilical Veins
  - Small veins around the falciform ligament responsible for draining venous blood from the diaphragm and anterior abdominal wall to the liver
  - veins of Sappey
    - Drain venous blood from the falciform ligament and enters portal branches of the left hepatic lobe
    - These veins can become enlarged in portal hypertension
  - In this case, extra planning was done to ensure that these veins were not disrupted
    - This emphasizes the need for adaptability by an interventional radiologist as patient anatomy is variable

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- Hoyle AT, Puckett Y. Endometrioma. [Updated 2023 Jun 5]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559230/

- De Filippo M, Puglisi S, D'Amuri F, Gentili F, Paladini I, Carrafiello G, Maestroni U, Del Rio P, Ziglioli F, Pagnini F. CT-guided percutaneous drainage of abdominopelvic collections: a pictorial essay. Radiol Med. 2021 Dec;126(12):1561-1570. doi: 10.1007/s11547-021-01406-z. Epub 2021 Aug 20. PMID: 34415507; PMCID: PMC8702416.

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