Case Presentation

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Body CT/MRI – RAD4005

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Clinical History

- CC - 57yo postmenopausal G1P1 presents from OSH with complaints of left leg swelling x3d, no pain, redness or difficulty walking
- PMH – prior MI and RLE DVT
- PSH – none
- Meds - Asa 81 mg
- Allergies – NKDA
- SH - 10 pk/yr, quit 5 months ago
- FH – denies
- Review of systems
  - Unintentional weight loss (12-15 lbs in 3-4 weeks), abdominal bloating/distension lack of appetite, weakness
  - Denies fever, chills, CP, palp, SOB, cough, N/V, bowel changes, abdominal pain, vaginal bleeding, discharge, myalgia, arthralgia

Physical Exam

- BMI 18
- Firm, largely distended abdomen
- LLE below knee twice as large as RLE
  - No erythema, tenderness, or edema
  - 2+ pulses
- Normal vaginal exam

Imaging from OSH

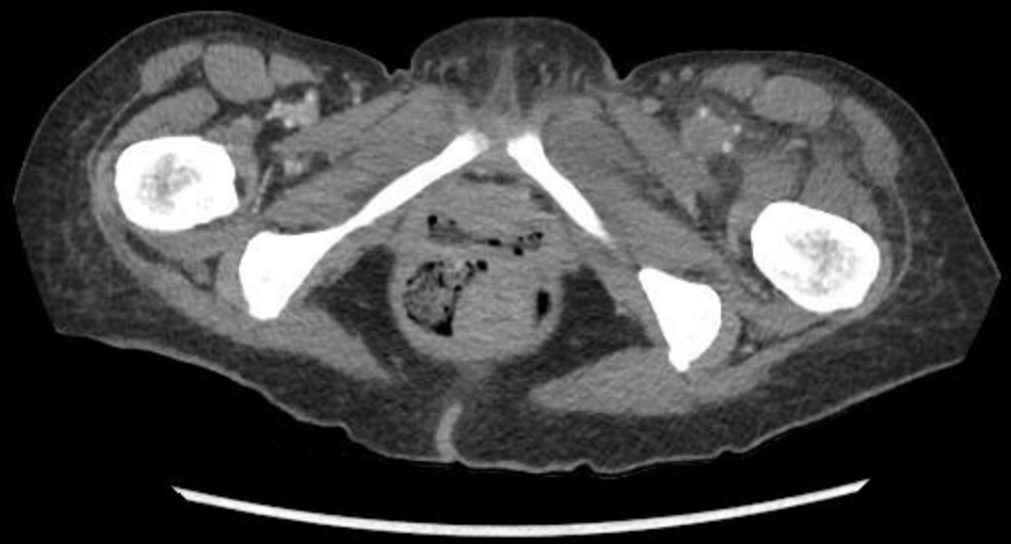
- CXR - 7/29/2020
- CTAP w/contrast - 7/29/2020
- Duplex Venous Doppler - 7/29/2020

Chest Radiograph

No acute
cardiopulmonary process

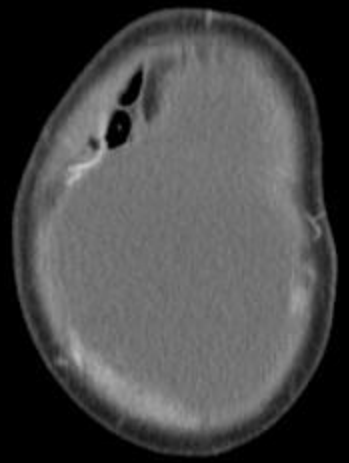
CT AP w/contrast

Axial Plane



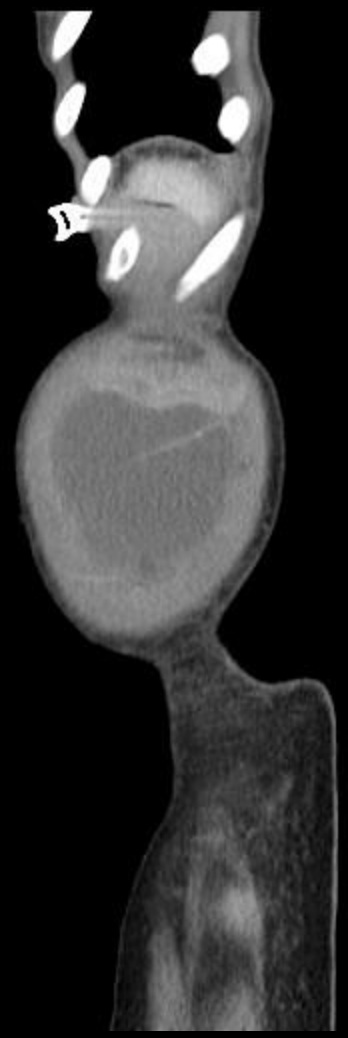
CT AP w/contrast

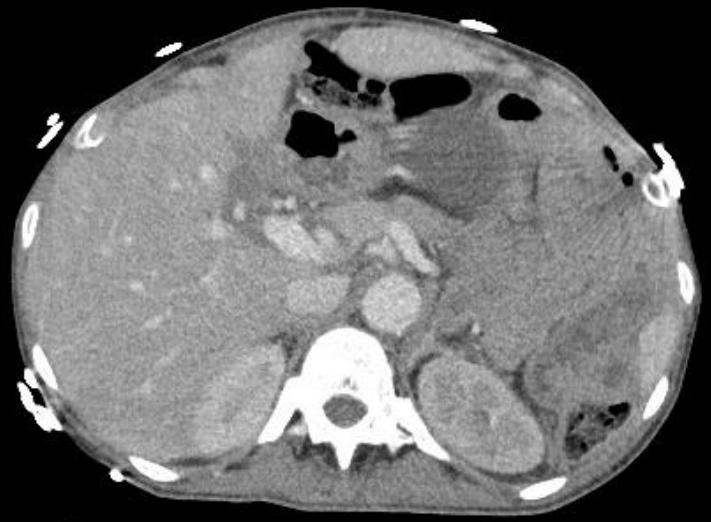
Coronal Plane

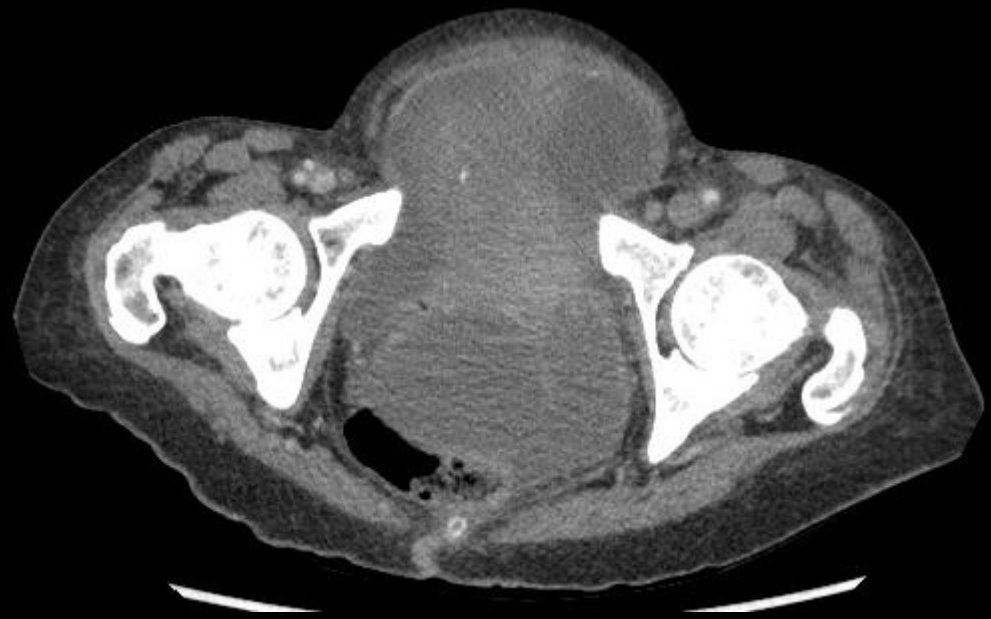


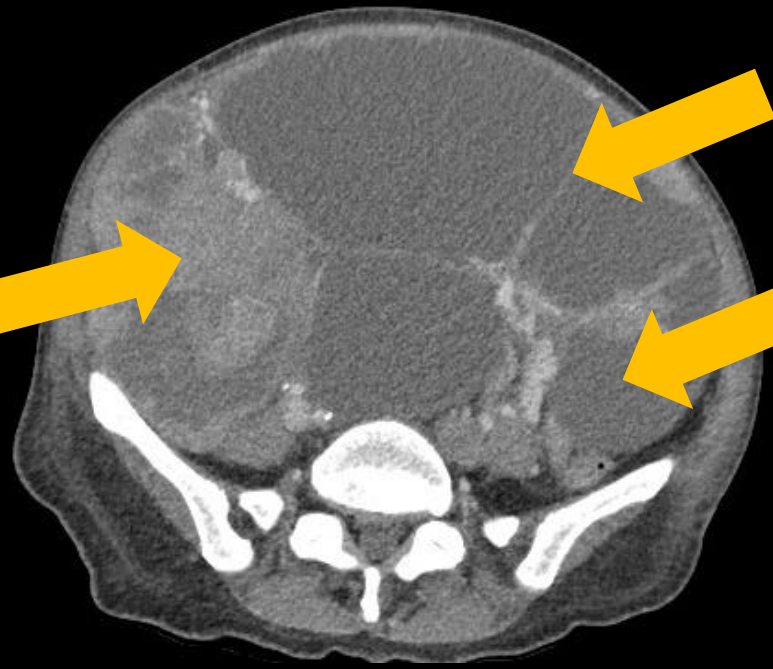
CT AP w/contrast

Sagittal Plane








Enhancing Septations
Solid Components
Cystic Components

Axial Plane

Patient

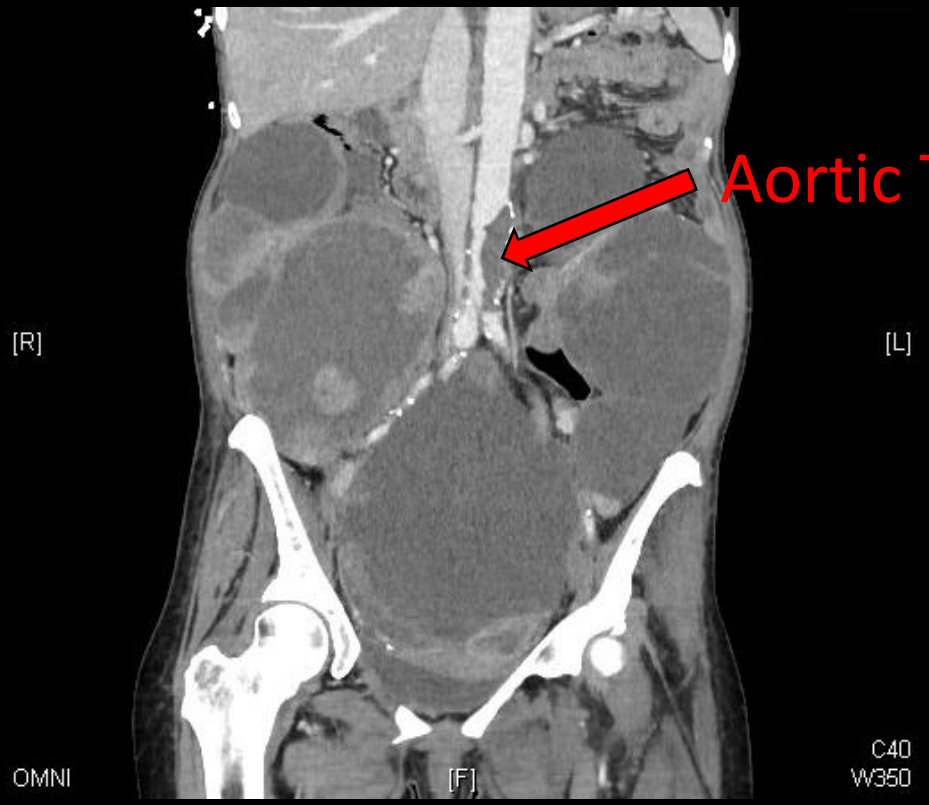
Coronal Plane

Normal

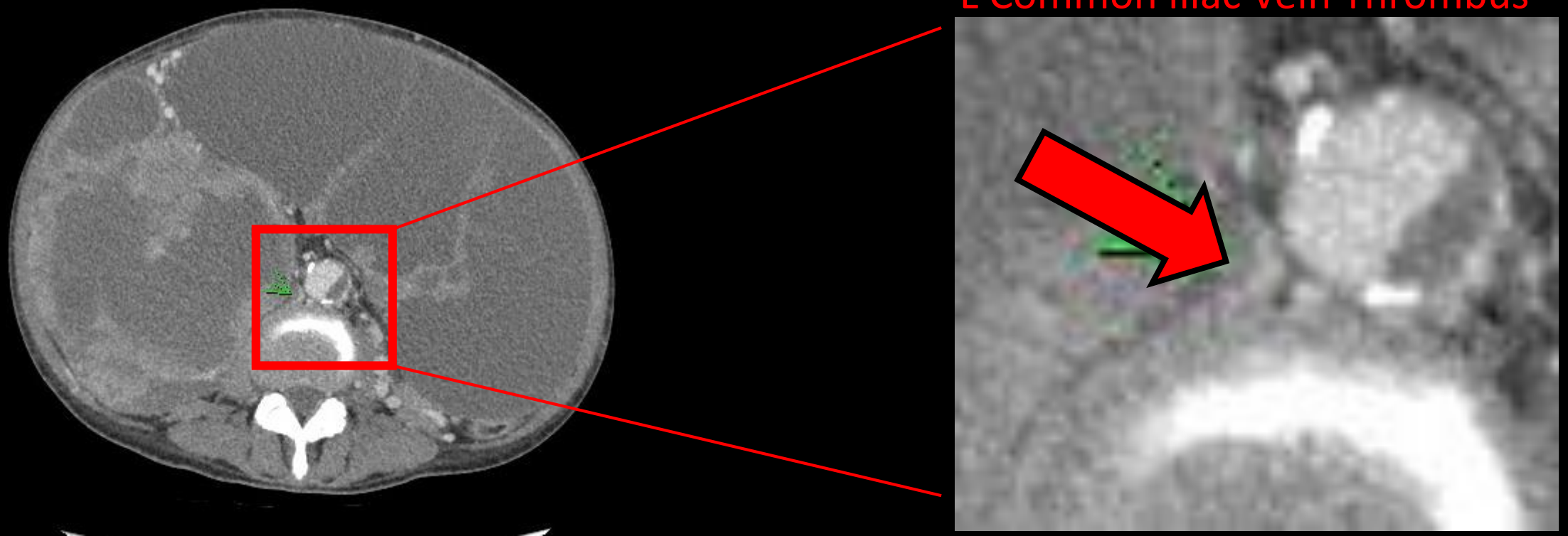
Patient

Sagittal Plane

What else do you see?

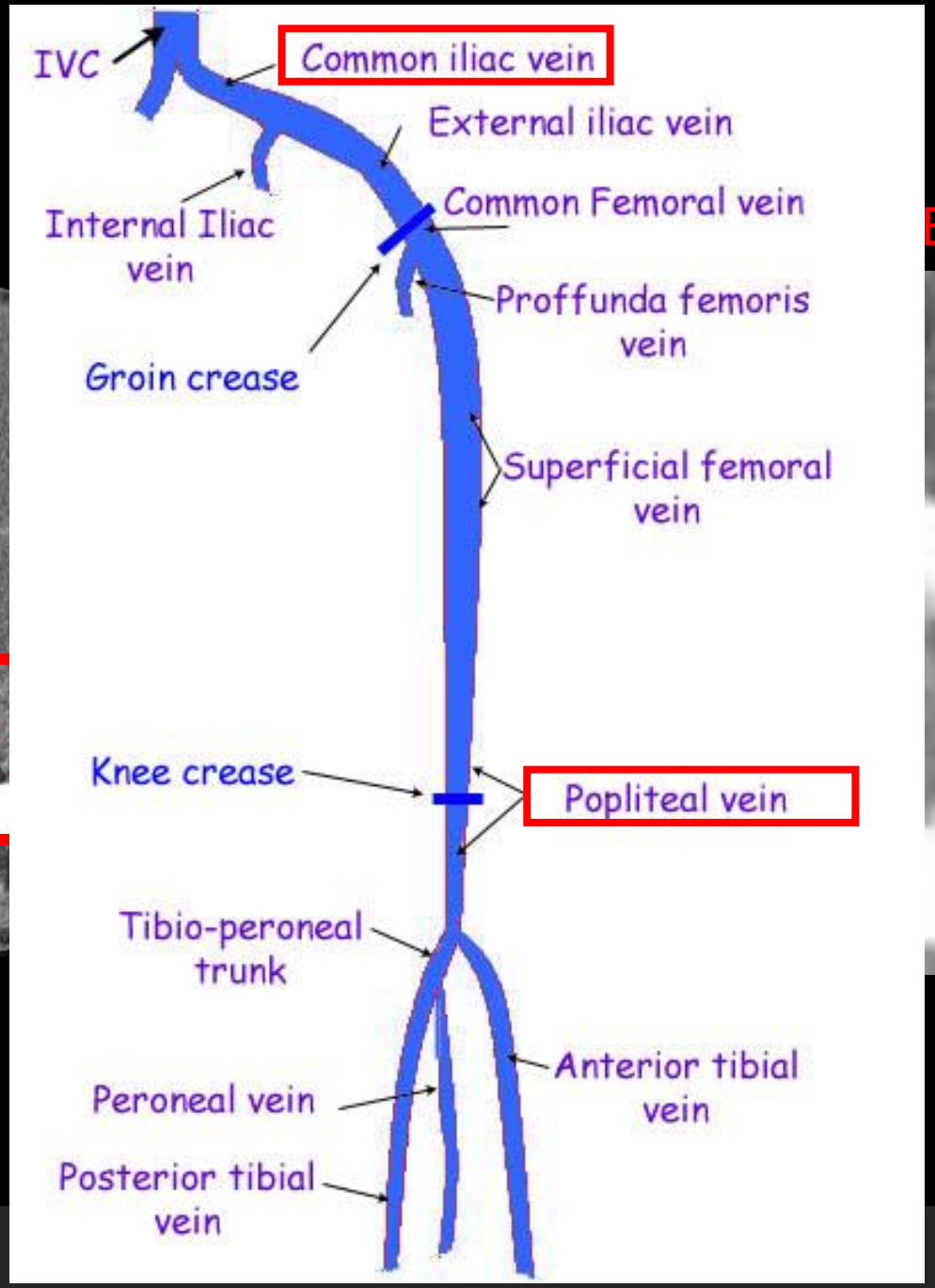


Coronal Plane



Axial Plane

McGovern Medical School



External Iliac Vein Thrombus

Axial Plane

CT AP w/contrast

- CTAP w/ - large complex cystic peritoneal mass, likely ovarian neoplasm
  - Large complex confluent multilocular cystic mass occupies nearly half the entire peritoneal cavity of the mid to lower abdomen measuring 32x27cm
  - Eccentric L sided distal abdominal aortic plaque or mural thrombus 5.4 cm in length which causes 50-60% narrowing of the aortic lumen
  - Extensive LLE DVT expanding the L external iliac artery

Assessment

- 57yo postmenopausal women with a PMH of MI and prior RLE DVT who presents today with complaints of LLE swelling and abdominal distention who was found to have a large complex mass on imaging suspicious of GYN malignancy and a large LLE DVT.

Orders for pelvic mass

- CBC
  - WBC – 15.4 (H), platelet - 546 (H), RBC 2.5 (L), hgb – 7.4 (L)
- CMP - normal
- Mag – 2.7 (mild H)
- Phos – 2.5
- Lactic Acid – 1.4
- CEA -0.4
- CA-125 – 3361 (H), (Normal <35 U/mL)
- CA 19-9 – 268 (H), (Normal <34 U/mL)
- PT/PTT – 15.3 (mild H)/31.3
- COVID – positive!!

Exploratory Laporotomy – 8/3/2020

- Ex/lap, bilateral salpingo-oophorectomy, lysis of adhesions, omental biopsy
  - Bilateral large adnexal masses – L extending up to her xiphoid (30cm) irregular and multicystic – ruptured upon entry
    - Tube and ovary sent for path – high grade carcinoma
  - R ovary and tube were socked into the posterior cul-de-sac about 20 cm, irregular and multicystic
  - Large conglomerate of tumor arising from cecum/appendix that was eroding the abdominal wall
  - Terminal ilium going into the mass
  - Omentum and transverse colon seemed to be involved

Differential Diagnosis

Postmenopausal

- Primary cecal appendiceal carcinoma with ovarian metastases
- Synchronous primaries of GI and GYN primary malignancy

Premenopausal

- Molar pregnancy

Pathology Findings

Final path stage IIIC high grade serous carcinoma of the ovary

Detailed Report:

- Left tube and ovary
  - High grade serous carcinoma
  - Tumor size 24.0 cm
  - Stage pT3c Nx
- Right tube and ovary
  - High grade serous carcinoma
  - Tumor size 30.4 cm
  - Stage pT3c Nx
- Peritoneal nodule
  - Metastatic high-grade serous carcinoma
- Omentum
  - Metastatic high-grade serous carcinoma
  - Largest metastatic nodule 3.5 cm

Treatment Plan

- Recommend colonoscopy to evaluate for secondary malignancy

- If it is only ovarian cancer
  - Chemotherapy - Carboplatin/Paclitaxol x3
  - Interval debulking if patient is medically stable

Comparing H&P to imaging

DVT

- History
  - 3-day history of LLE swelling, prior R DVT
- Physical Exam
  - LLE 2X size of RLE
- Imaging
  - Doppler and CTAP show extensive active DVT

Abdominal Mass

- History
  - Weight loss – 15 lbs in 3-4 weeks
- Physical Exam
  - Distended, firm abdomen
- Imaging
  - CT shows large complex confluent multilocular cystic mass
- Surgery
  - Bilateral large adnexal masses
  - Large conglomerate of tumor arising from cecum/appendix

ACR Appropriateness Criteria

American College of Radiology
ACR Appropriateness Criteria®
Staging and Follow-up of Ovarian Cancer

Variant 1: **Initial staging of pretreatment ovarian cancer.**

Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
CT chest abdomen pelvis with IV contrast	Usually Appropriate	☢☢☢☢
FDG-PET/CT skull base to mid-thigh	May Be Appropriate	☢☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
CT chest abdomen pelvis without IV contrast	May Be Appropriate	☢☢☢☢
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢
CT chest abdomen pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢
US abdomen and pelvis transabdominal	Usually Not Appropriate	O
US pelvis transvaginal	Usually Not Appropriate	O
X-ray contrast enema	Usually Not Appropriate	☢☢☢
Radiography intravenous urography	Usually Not Appropriate	☢☢☢

Imaging Costs at Memorial Hermann

	Charge to Insurance	Insured patient responsibility	Uninsured
Chest X-ray (1 view)	$683	$250	$246
CT Abd/pelvis w/con	$7,998	$480	$2,879
Unilateral Duplex US	$1,273	$112	$458
Total	**$9,954**	**$842**	**$3,583**

Additional Cost in Imaging:
Insured: $2,377
Uninsured: $4,311

Take Home Points

- Cancer doesn't always present with a chief complaint of unexplained weight loss
- CT is the primary modality for ovarian tumor staging and diagnosis of recurrence
- Imaging is expensive!

References

- https://acsearch.acr.org/docs/69378/Narrative/
- https://www.memorialhermann.org/patients-caregivers/memorial-hermann-charge-master/
- https://www.labpedia.net/tumor-marker-part-7-ca-125-and-ca-19-9/
- https://radiopaedia.org/cases/normal-ct-abdomen?lang=us
- https://link.springer.com/chapter/10.1007/174_2017_43
- https://www.ultrasoundpaedia.com/normal-dvt-leg/
- Stacey A Funt, Lucy E Hann, Detection and characterization of adnexal masses, Radiologic Clinics of North America, Volume 40, Issue 3, 2002, Pages 591-608, ISSN 0033-8389, https://doi.org/10.1016/S0033-8389(01)00009-4.


Questions?