

RADY 401 Case Presentation: Peritoneal Carcinomatosis

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Focused patient history and workup

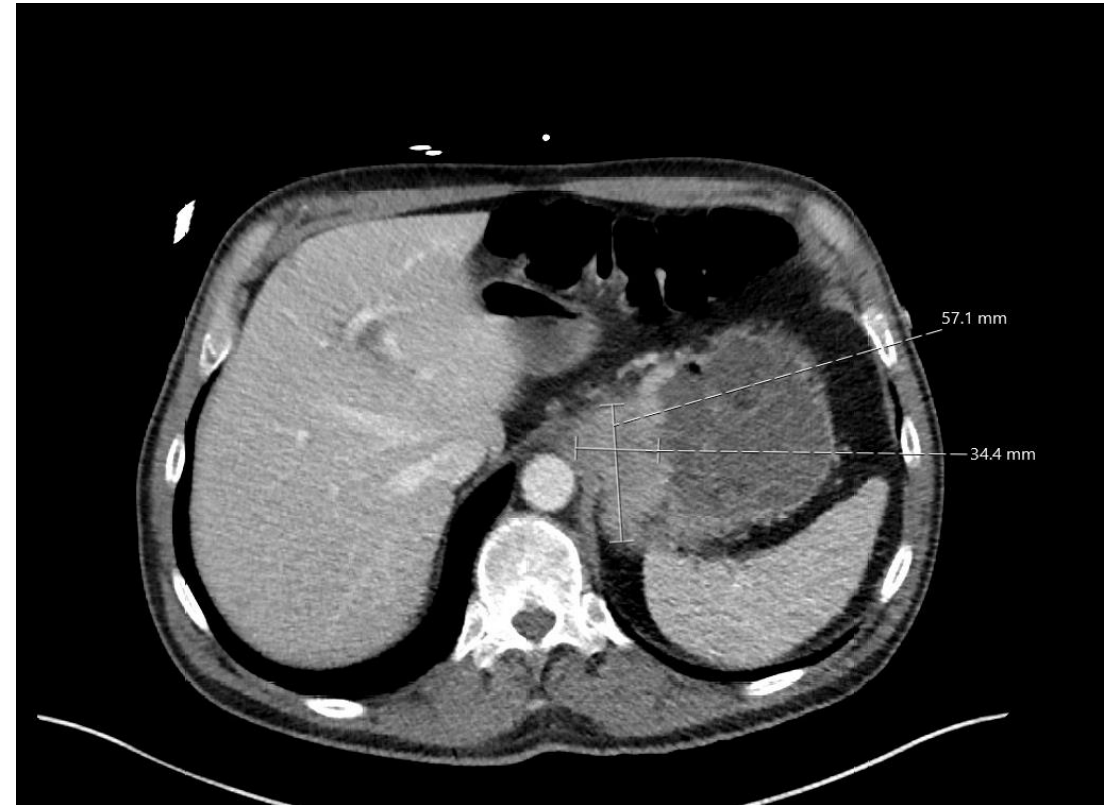
- 57 y.o. M w/o pertinent hx initially presents in April 2022 with dysphagia, unintended weight loss, melena
 - Colonoscopy showed no mass; EGD and CTA w/ contrast showed gastric mass
 - Biopsy and pathology showed HER-2- negative gastric adenocarcinoma w/ metastasis to lung and liver
- 06/22 – 11/22 completes eight cycles of Oxalaplatin and capecitabine
 - CT Abdomen Pelvis w/ contrast to monitor improvement
- Total gastrectomy with antecolic Roux-en-Y esophagojejunostomy and J-tube placement 03/07/2023
 - CT Abdomen Pelvis w/ contrast to monitor improvement
- Now presenting for surveillance imaging
 - CT Abdomen Pelvis w/ contrast to monitor improvement

List of imaging studies

- **CT Chest Abdomen Pelvis w/ Contrast (4/19/22) -- initial diagnosis**
- CT Head w/o contrast (4/20/22)
- PET CT Skull Base to Thigh (5/04/22)
- **CT Abdomen Pelvis w/ Contrast (9/14/22) -- chemotherapy initiated**
- CT Chest w/ Contrast (9/15/22)
- CT Chest w/ Contrast (12/07/22)
- **CT Abdomen w/ Contrast (12/07/22) -- chemotherapy consolidation complete**
- X-ray Abdomen (3/12/23)
- **CT Abdomen Pelvis w/ Contrast (3/17/23) -- post Roux-En-Y**
- **CT Abdomen Pelvis w/ Contrast (7/05/23) -- maintenance imaging**
- CT Chest w/ Contrast (7/05/23)

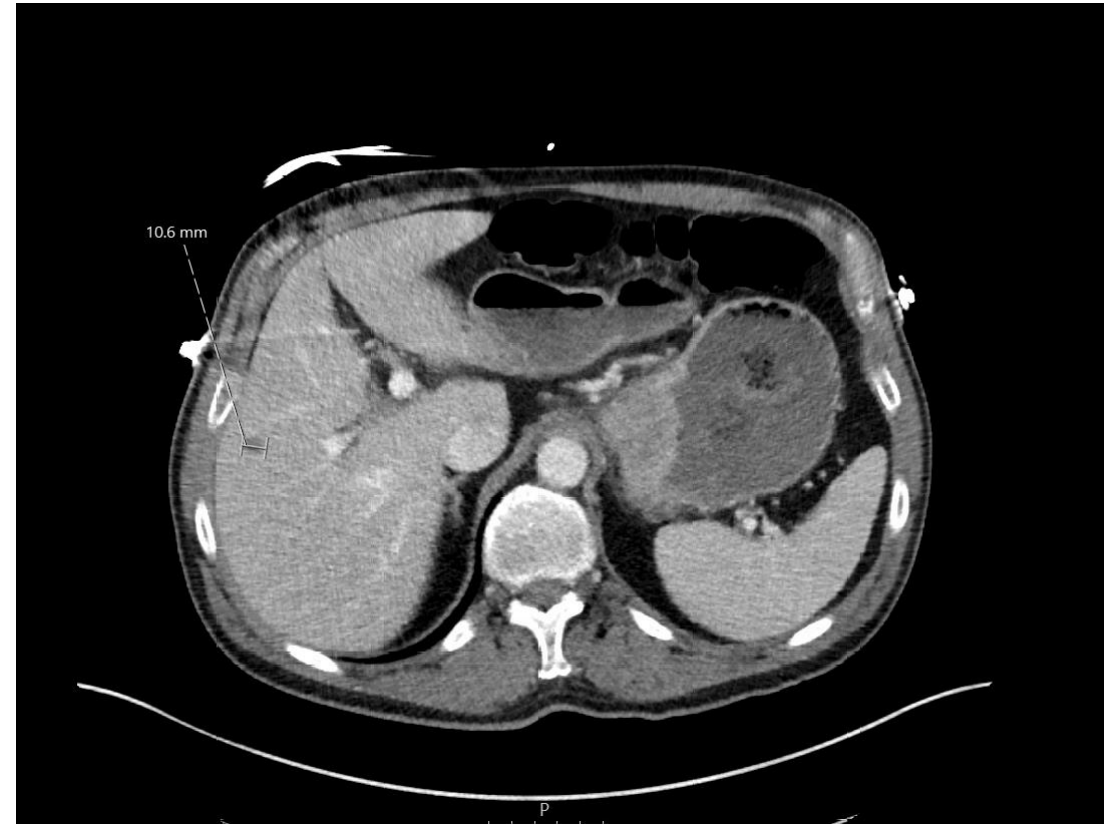
CT Abdomen Pelvis w/ IV Contrast (4/19/2022)

- Gastric mass measuring 57.1mm x 34.4mm consistent with malignancy
- Not seen in this image: enlarged and enhancing gastric lymph nodes consistent with metastatic disease



CT Abdomen Pelvis w/ IV Contrast (4/19/2022)

- Hepatic hypodensities noted consistent with possible metastases



CT Abdomen Pelvis w/ IV Contrast (4/19/2022)

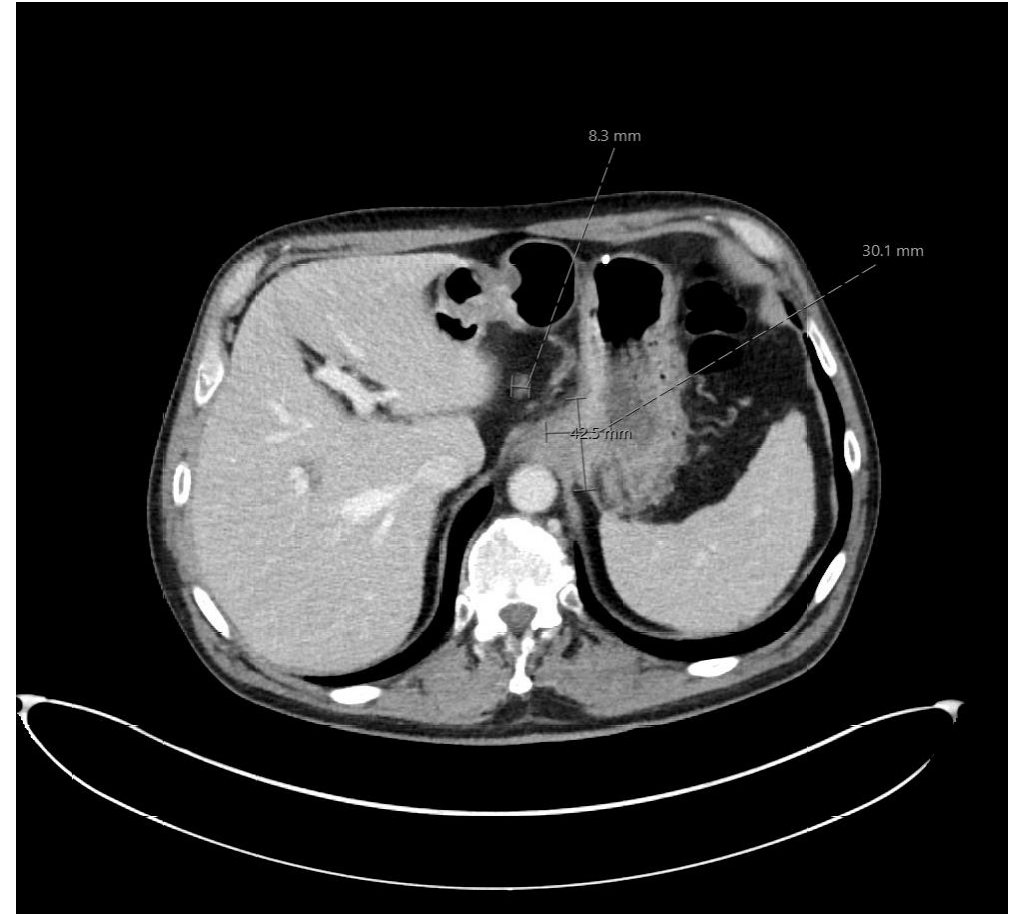
- Soft Tissue Mass noted beneath the umbilicus
- "Possible umbilical urachal cyst with adjacent stranding which may be secondary to inflammation or infection"



CT Abdomen Pelvis w/ Contrast (09/14/2022)

(Partially completed chemotherapy)

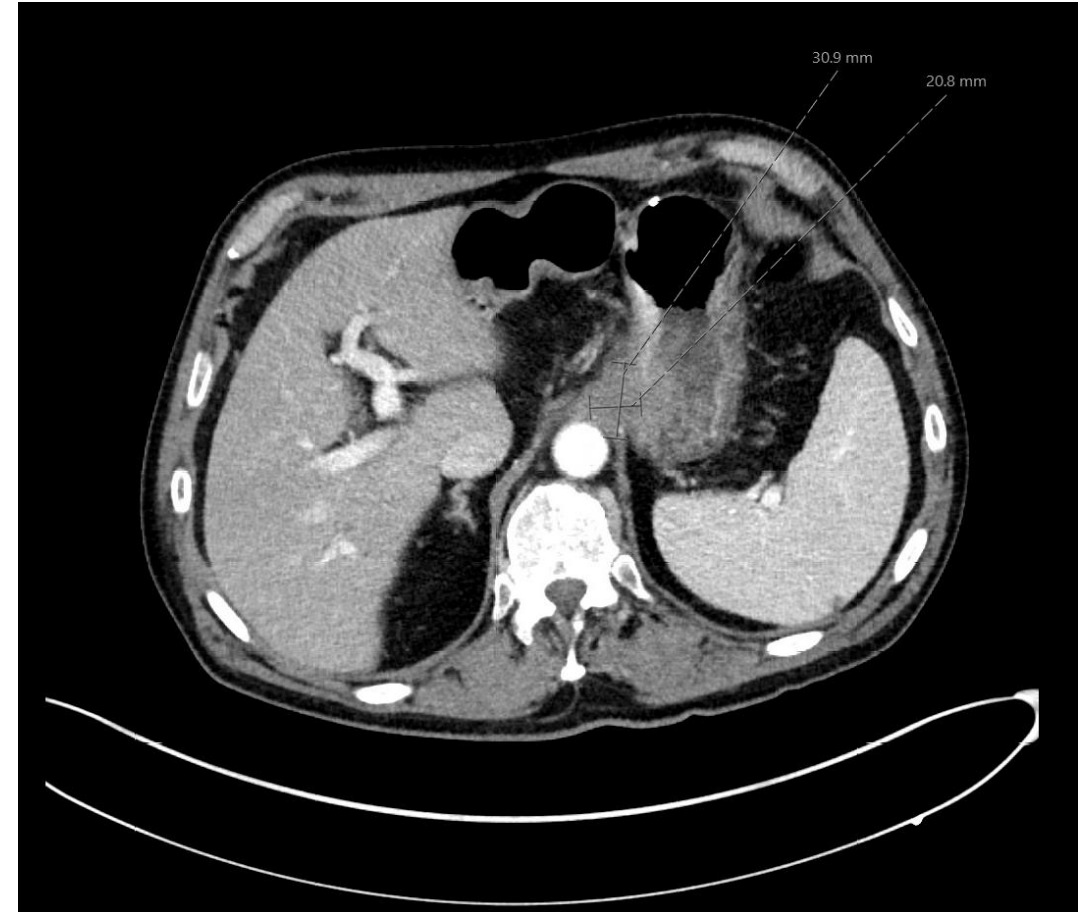
- Persistent gastric mass, now measuring 42mm x 30mm
- Fat stranding adjacent to gastric body



CT Abdomen w/ Contrast (12/07/2022)

(Post-chemotherapy)

- Gastrostomy tube tip noted in the gastric lumen
- Gastric mass in the region of the cardia appears to be reduced in size from prior imaging
 - ** noted that slice selection and technique could artificially result in size reduction**
- Gastro-hepatic lymph nodes remain unchanged



CT Abdomen w/ Contrast (12/07/2022)

(Post-chemotherapy)

- Similar appearing mixed attenuation soft tissue mass inferior to the umbilicus. Largely unchanged from prior scan



CT Abdomen w/ Contrast (03/17/2023)

(Post-Roux-En-Y)

- Post Roux-En-Y anatomy w/ total gastrectomy
- Fluid noted in peri-hepatic space
- Suture line present at the esophageal hiatus



CT Abdomen w/ Contrast (07/05/2023)

- Tissue thickening adjacent to esophagojejunal anastomosis
- Loculated ascites
- Peritoneal and omental nodules present on bilateral hemidiaphragms



CT Abdomen w/ Contrast (07/05/2023)

- Additional omental and peritoneal nodules seen more clearly in this section



CT Abdomen w/ Contrast (07/05/2023)

- Soft tissue mass posterior to the umbilicus noted to be enlarged from 2.9x 2.2cm to 3.4 x 2.6cm



Patient treatment or outcome

- Oncology discussed with patient the likely terminal nature of his condition and an ongoing conversation was started regarding purely palliative care therapies and life extending treatment modalities

Melena: When is imaging indicated?

- First line for diagnosis of melena/hematemesis with suspected upper GI bleed is: EGD
- Imaging choices depend on EGD results: most often CTA is 7-9 rated

Variant 1: Endoscopy reveals nonvariceal upper gastrointestinal arterial bleeding source.

Radiologic Procedure	Rating	Comments	RRL*
Arteriography visceral	9	This procedure is comparable to CTA.	⊕⊕⊕
CTA abdomen with IV contrast	7	This procedure is comparable to arteriography.	⊕⊕⊕
CT enterography	5		⊕⊕⊕⊕
CT abdomen without IV contrast	4		⊕⊕⊕
CT abdomen with IV contrast	2		⊕⊕⊕
CT abdomen without and with IV contrast	2		⊕⊕⊕⊕
RBC scan abdomen and pelvis	2		⊕⊕⊕
X-ray upper GI series	1		⊕⊕⊕
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

Variant 2: Endoscopy confirms nonvariceal upper gastrointestinal bleeding without a clear source.

Radiologic Procedure	Rating	Comments	RRL*
Arteriography visceral	9	This procedure is comparable to CTA.	⊕⊕⊕
CTA abdomen with IV contrast	8	This procedure is comparable to arteriography.	⊕⊕⊕
CT enterography	5		⊕⊕⊕⊕
RBC scan abdomen and pelvis	5		⊕⊕⊕
CT abdomen without IV contrast	4		⊕⊕⊕
CT abdomen with IV contrast	3		⊕⊕⊕
CT abdomen without and with IV contrast	3		⊕⊕⊕⊕
X-ray upper GI series	1		⊕⊕⊕
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

**American College of Radiology
ACR Appropriateness Criteria®
Radiologic Management of Lower Gastrointestinal Tract Bleeding**

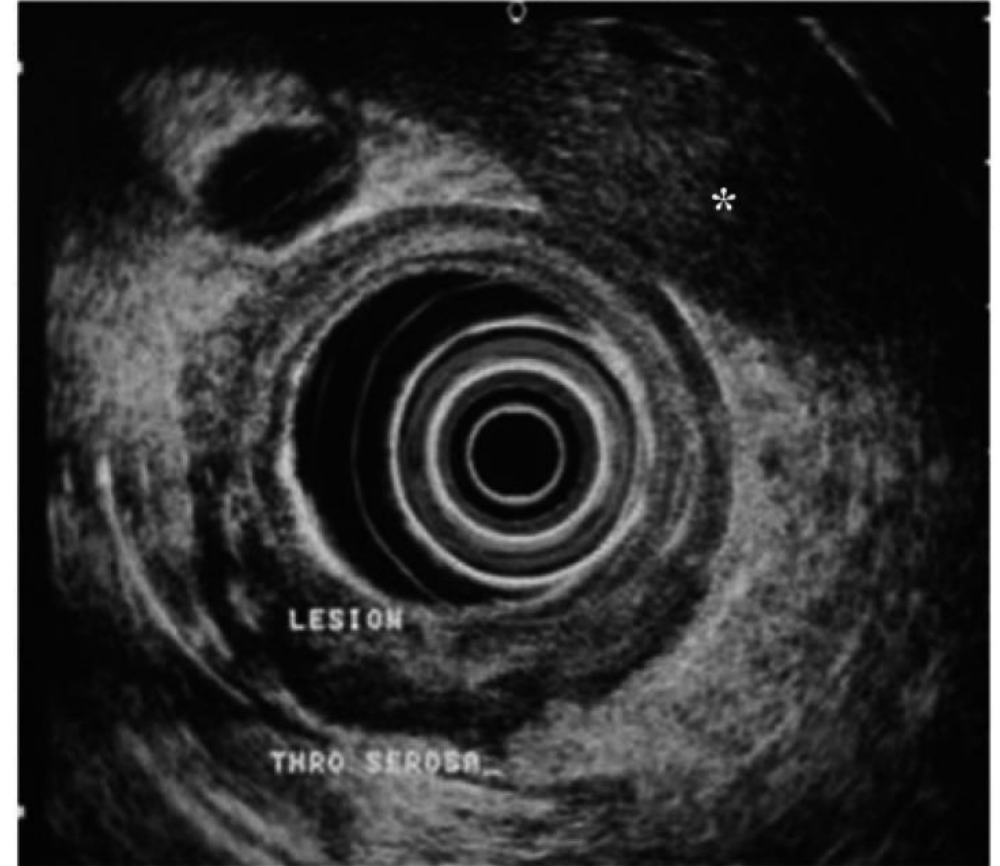
Variant 1: **Lower gastrointestinal tract bleeding. Active bleeding clinically observed as hematochezia or melena in a hemodynamically stable patient. Next step.**

Procedure	Appropriateness Category
CTA abdomen and pelvis without and with IV contrast	Usually Appropriate
Diagnostic/therapeutic colonoscopy	Usually Appropriate
RBC scan abdomen and pelvis	Usually Appropriate
Transcatheter arteriography/embolization	May Be Appropriate
MRA abdomen and pelvis without and with IV contrast	Usually Not Appropriate
Surgery	Usually Not Appropriate

Discussion: Imaging Gastric Cancer

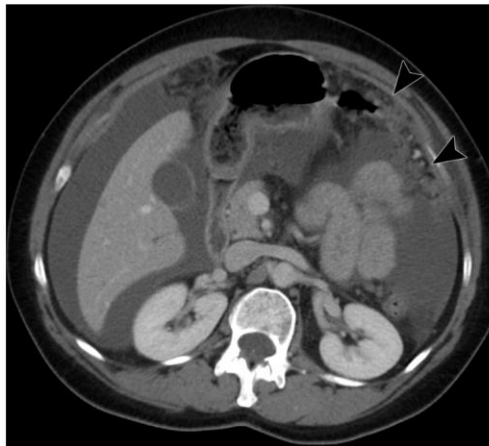
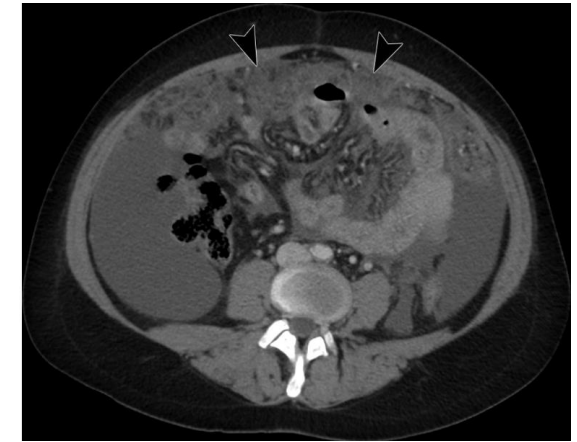
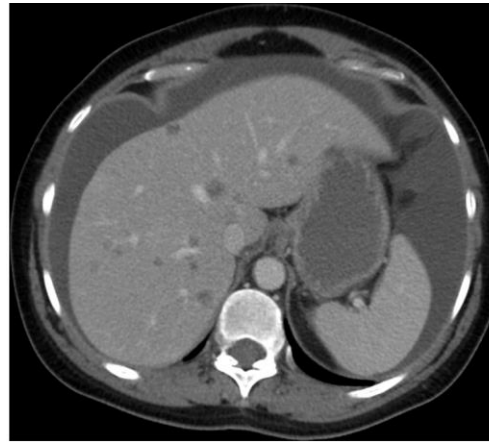
Staging/Maintenance:

- ACR recommends EGD for detection, and MRCT for staging
- EUS recommended for local tissue staging
- CT, MRI, PET scans used for distant metastasis



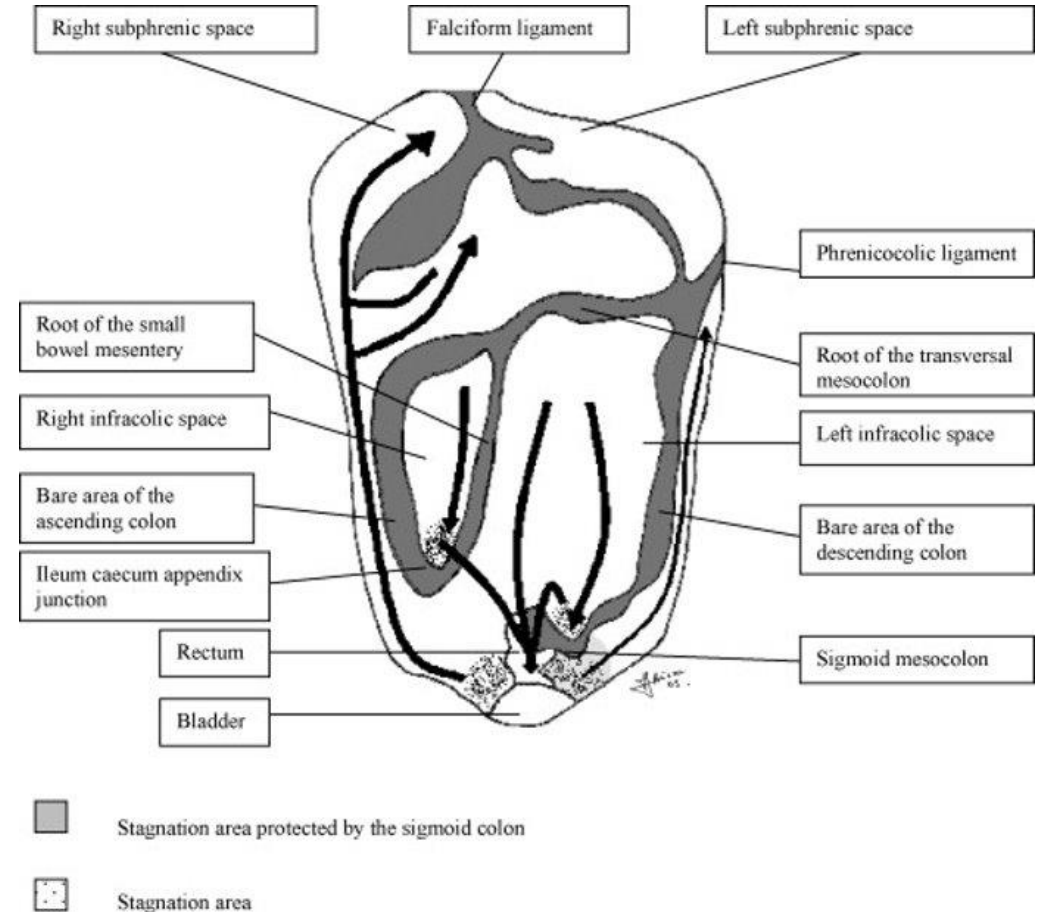
CT Findings of Carcinomatosis

- Ascites
- Peritoneal Thickening
- Omental Nodules/Thickening
“caking”
- Infiltrative Masses



Ascites Flow Pattern

- In our patient:
 - Ascitic fluid noted in right and left subphrenic spaces
 - Smaller collections noted in the stagnation areas around the bladder
- Why does fluid collect in carcinomatosis?
 - Lymphatic obstruction by metastatic disease



Study Cost and Radiation Dosing

- Cost for CT Abdomen Pelvis: \$815 (National Average)
- Radiation Dose for CT Abdomen/Pelvis with Contrast: ~ 16mSv

UNC Top Three

- CT Abdomen/Pelvis with contrast is indicated in combination with EGD/colonoscopy in a stable patient with melena
- The staging of gastric cancer requires multiple imaging modalities and procedures (not just a PET Scan)
- CT Abdomen/Pelvis findings for carcinomatosis include ascites, peritoneal thickening, discrete omental lesions, omental haziness and enlarged lymph nodes

References

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