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

<table>
<thead>
<tr>
<th>Variant 1: Endoscopy reveals nonvariceal upper gastrointestinal arterial bleeding source.</th>
<th>Variant 2: Endoscopy confirms nonvariceal upper gastrointestinal bleeding without a clear source.</th>
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<td>Radiologic Procedure</td>
<td>Rating</td>
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<td>Arteriography visceral</td>
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<tr>
<td>CTA abdomen with IV contrast</td>
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<tr>
<td>CT enterography</td>
<td>5</td>
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<tr>
<td>CT abdomen without IV contrast</td>
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<tr>
<td>CT abdomen with IV contrast</td>
<td>2</td>
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<tr>
<td>CT abdomen without and with IV contrast</td>
<td>2</td>
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<tr>
<td>RBC scan abdomen and pelvis</td>
<td>2</td>
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<tr>
<td>X-ray upper GI series</td>
<td>1</td>
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</table>

Rating Scale: 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.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
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<tr>
<td>CTA abdomen and pelvis without and with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>Diagnostic/therapeutic colonoscopy</td>
<td>Usually Appropriate</td>
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<tr>
<td>RBC scan abdomen and pelvis</td>
<td>Usually Appropriate</td>
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<tr>
<td>Transcatheter arteriography/embolization</td>
<td>May Be Appropriate</td>
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<td>MRA abdomen and pelvis without and with IV contrast</td>
<td>Usually Not Appropriate</td>
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<tr>
<td>Surgery</td>
<td>Usually Not Appropriate</td>
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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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