AMSER Case of the Month
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74-year old woman
with Diffuse Abdominal Pain

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Patient Presentation

- HPI: 74-year old woman presenting with sudden onset non-localized abdominal pain
- PMH of arthritis, tobacco use, and HPV+ high grade cervical squamous cell carcinoma treated with chemotherapy
- PSH notable for right inguinal hernia repair with incarcerated small bowel reduction
- Vitals Afebrile, tachycardic, normotensive
- Labs WBC- 50.7, Lactate- Normal

What Imaging Should We Order?

ACR Appropriateness Criteria

Variant: 1 Acute nonlocalized abdominal pain and fever. No recent surgery. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
US abdomen	May Be Appropriate	O
Radiography abdomen	May Be Appropriate	☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
Fluoroscopy contrast enema	Usually Not Appropriate	☢☢☢
Fluoroscopy upper GI series with small bowel follow-through	Usually Not Appropriate	☢☢☢
Nuclear medicine scan gallbladder	Usually Not Appropriate	☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢

This imaging modality was ordered by the ER physician

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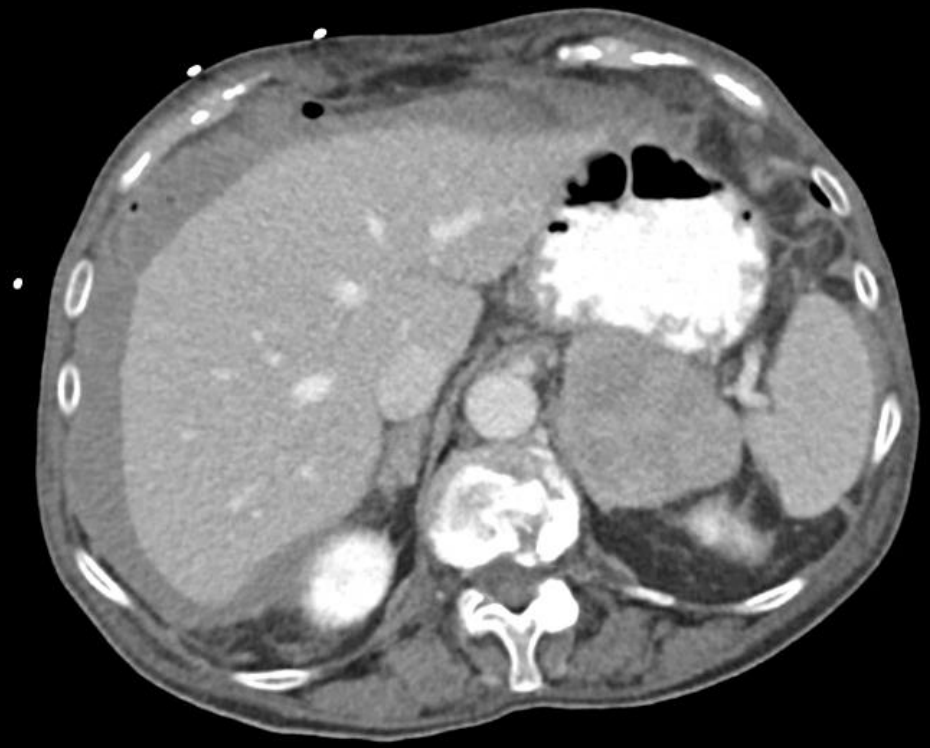
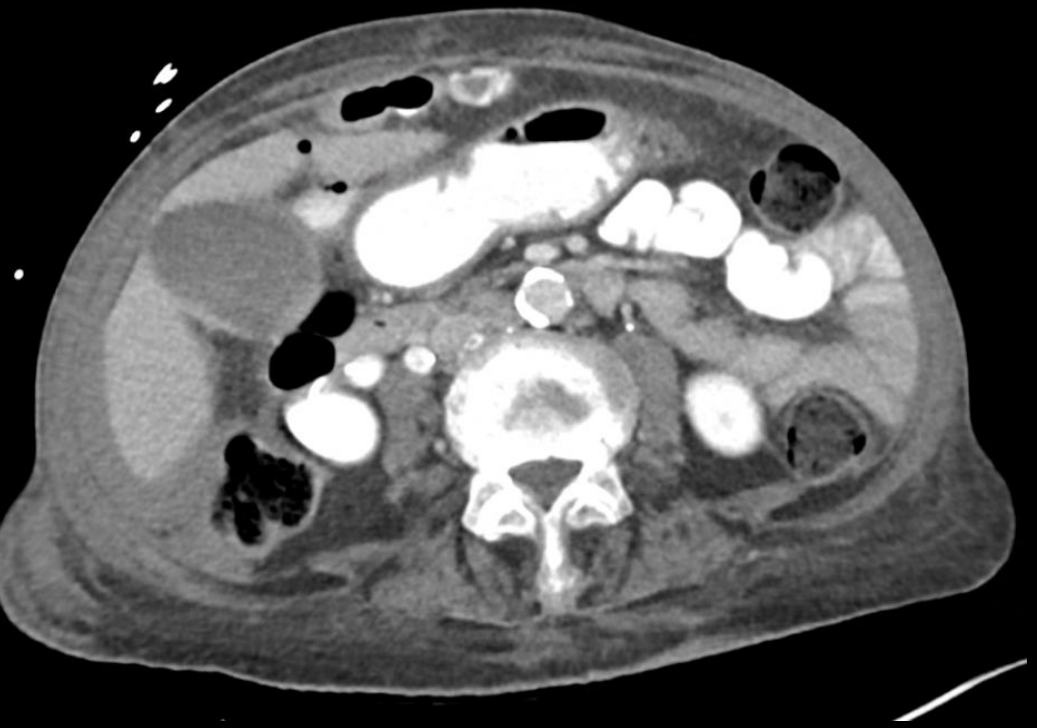
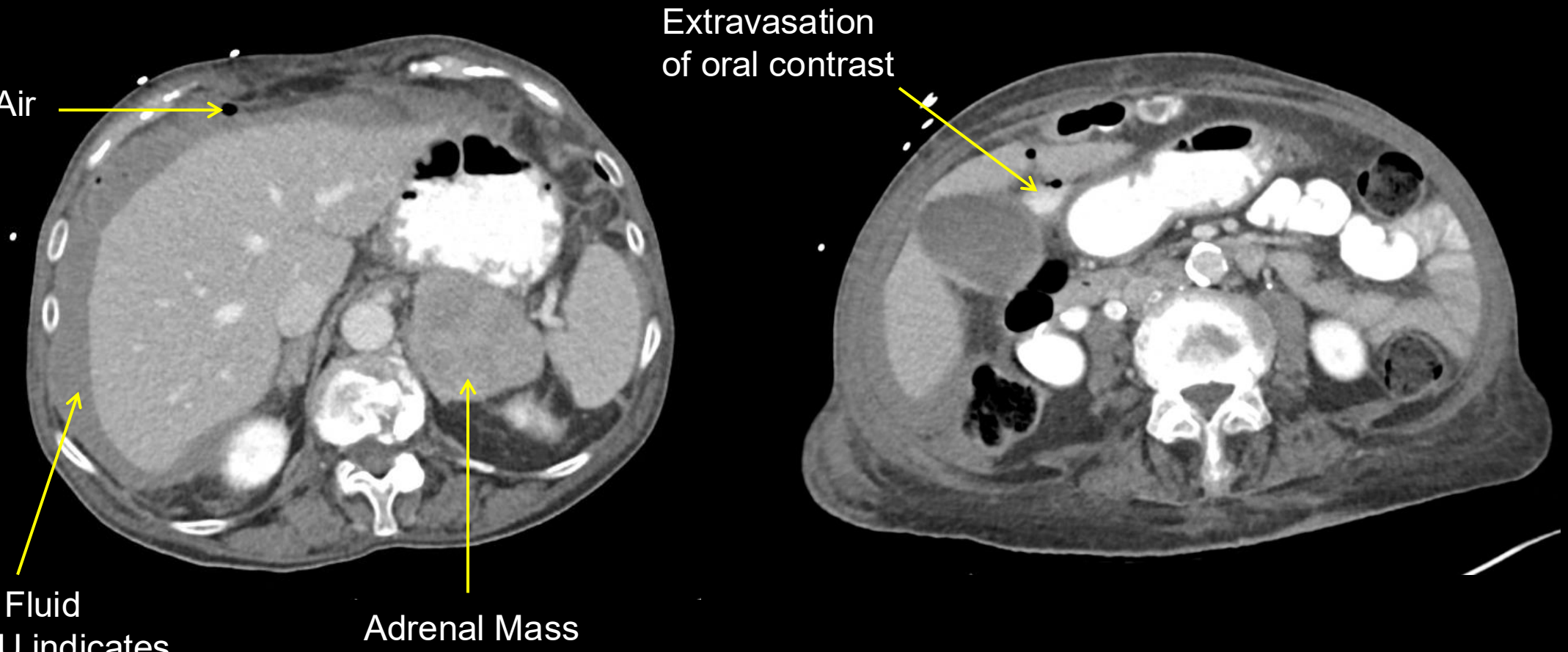
Findings (unlabeled)





Findings (labeled)



Final Dx:

Perforated peptic ulcer (likely duodenal or gastric antrum) with pneumoperitoneum and intra-abdominal free fluid in the setting of advanced metastatic cervical cancer.

Case Discussion

- The patient has radiographic findings of free air and free fluid as well as extravasated water-soluable contrast that is consistent with a perforated viscus [1]
  - Ddx- perforated gastric ulcer vs malignant perforation vs chemotherapy related mucosal injury
- CT with oral and IV contrast is the gold standard for diagnosing suspected perforation because it can identify small amounts of extraluminal air, contrast leak, and fluid collections. [1]
- Patients who have a history of NSAID, corticosteroid, or chemotherapy use have a higher risk of perforation. [2]
  - This patient has multiple rounds of chemotherapy due to her history of cervical cancer and current adrenal metastases

Case Discussion

- **Initial management:** Rapid stabilization using IV fluids, correction of electrolyte and acid–base disturbances, oxygen, analgesia, early broad-spectrum antibiotics, and urgent surgical evaluation.[3]
  - Operative intervention is often required in unstable patients or those with peritonitis or systemic toxicity.
- **Prognosis and considerations:** Stable patients with contained perforations may be managed nonoperatively, but bowel perforation has high morbidity and mortality with risks such as abscess, leak, fistula, adhesions, and prolonged recovery, so early recognition and coordinated care are essential.[3]

References:

1. Jones, M. W., Kashyap, S., Boget, B., & Zabbo, C. P. (2025). Bowel perforation. In *StatPearls*. StatPearls Publishing
2. Reginelli, A., Sangiovanni, A., Vacca, G., Belfiore, M. P., Pignatiello, M., Viscardi, G., ... & Cappabianca, S. (2022). Chemotherapy-induced bowel ischemia: diagnostic imaging overview. *Abdominal Radiology*, *47*(5), 1556-1564.
3. Andreyev J, Adams R, Bornschein J*, et al* British Society of Gastroenterology practice guidance on the management of acute and chronic gastrointestinal symptoms and complications as a result of treatment for cancer *Gut* 2025;**74:**1040-1067