AMSER Case of the Month August 2024

32-year-old woman presents with epigastric abdominal pain

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Patient Presentation

- HPI: 32 y/o woman presents to ED with “burning” epigastric abdominal pain radiating to the back bilaterally
- PMHx: esophagitis and alcohol use disorder – drinks one handle of vodka every other day for the past 3-4 years
- PSHx: none
- Physical exam: Soft, non-distended abdomen with diffuse TTP. No rebound or guarding. No ascites or fluid wave. No asterixis. No jaundice.
- Vitals: HR 106; RR 15; BP 131/99; SpO2 96% RA

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Pertinent Labs

- Na 134 ↓
- K 3.2 ↓
- Alk phos 96
- Albumin 3.8
- Lipase 1,800 ↑
- AST 71 ↑
- ALT 36 ↑
- Direct bilirubin 0.4 ↑
- WBC 6.1
- Hgb 13.3

What Imaging Should We Order?

If suspecting acute pancreatitis, imaging is not required for diagnosis unless there is a concern for complications

Select the applicable ACR Appropriateness Criteria

Variant 1: **Suspected acute pancreatitis. First-time presentation. Epigastric pain and increased amylase and lipase. Less than 48 to 72 hours after symptom onset. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
US abdomen	Usually Appropriate	O
CT abdomen and pelvis with IV contrast	May Be Appropriate	☢☢☢
MRI abdomen without and with IV contrast with MRCP	May Be Appropriate	O
MRI abdomen without IV contrast with MRCP	May Be Appropriate	O
US duplex Doppler abdomen	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢
CT abdomen and pelvis without IV contrast	Usually Not Appropriate	☢☢☢
US abdomen with IV contrast	Usually Not Appropriate	O

This imaging modality was ordered by the ER physician

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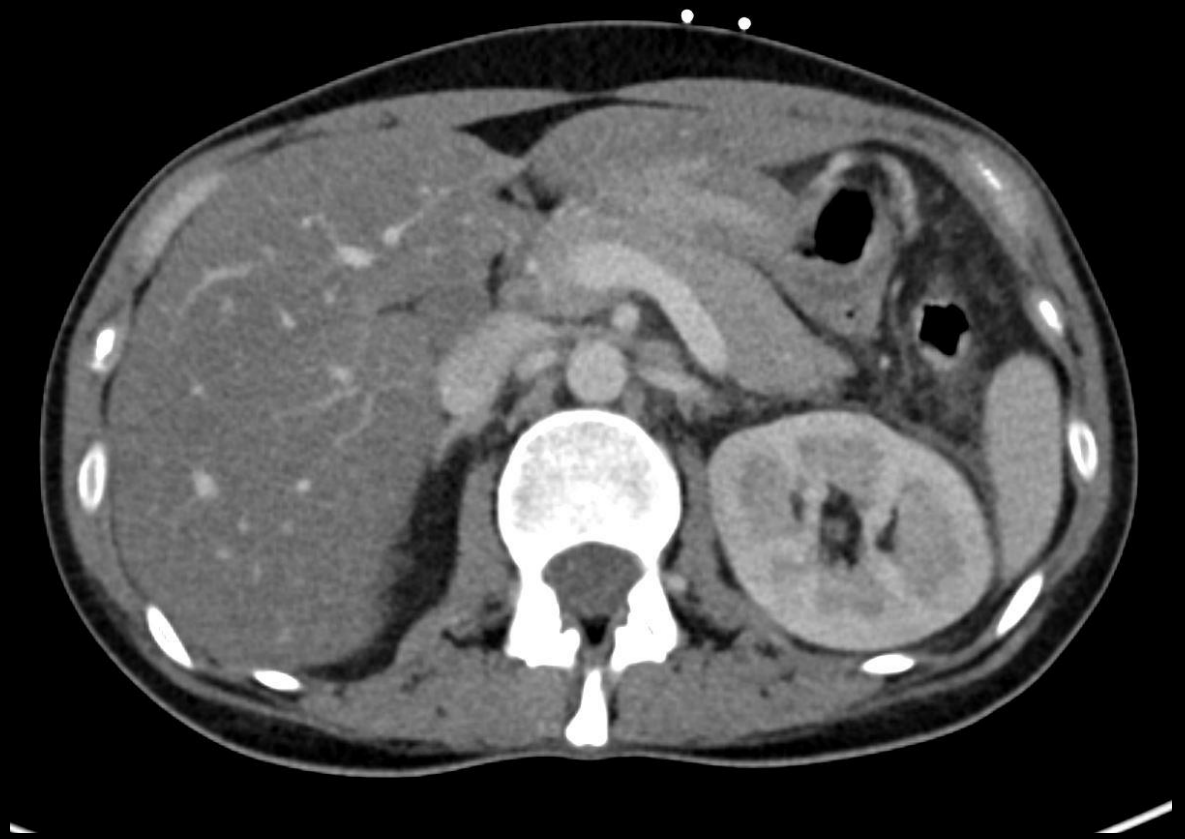
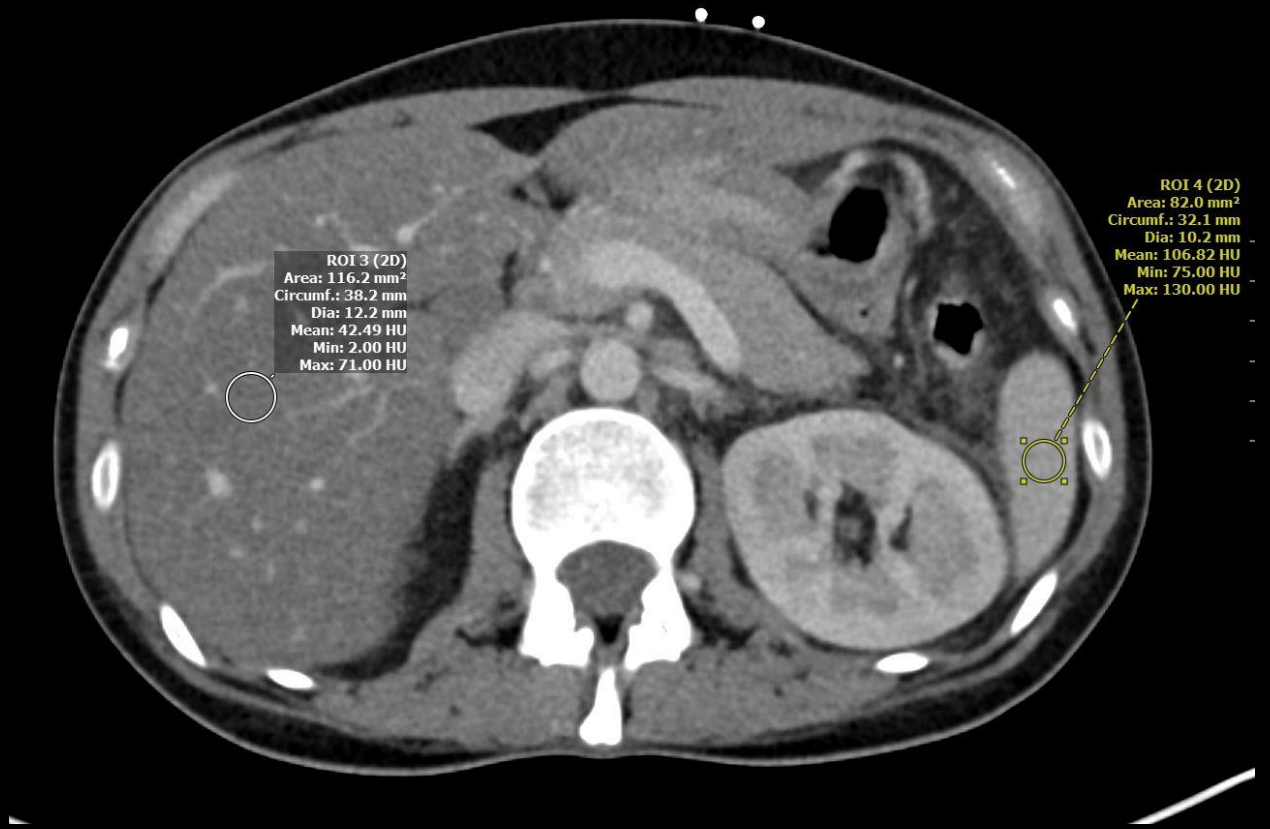
Axial CT A/P with IV Contrast (unlabeled)



Axial CT A/P with IV Contrast (labeled)



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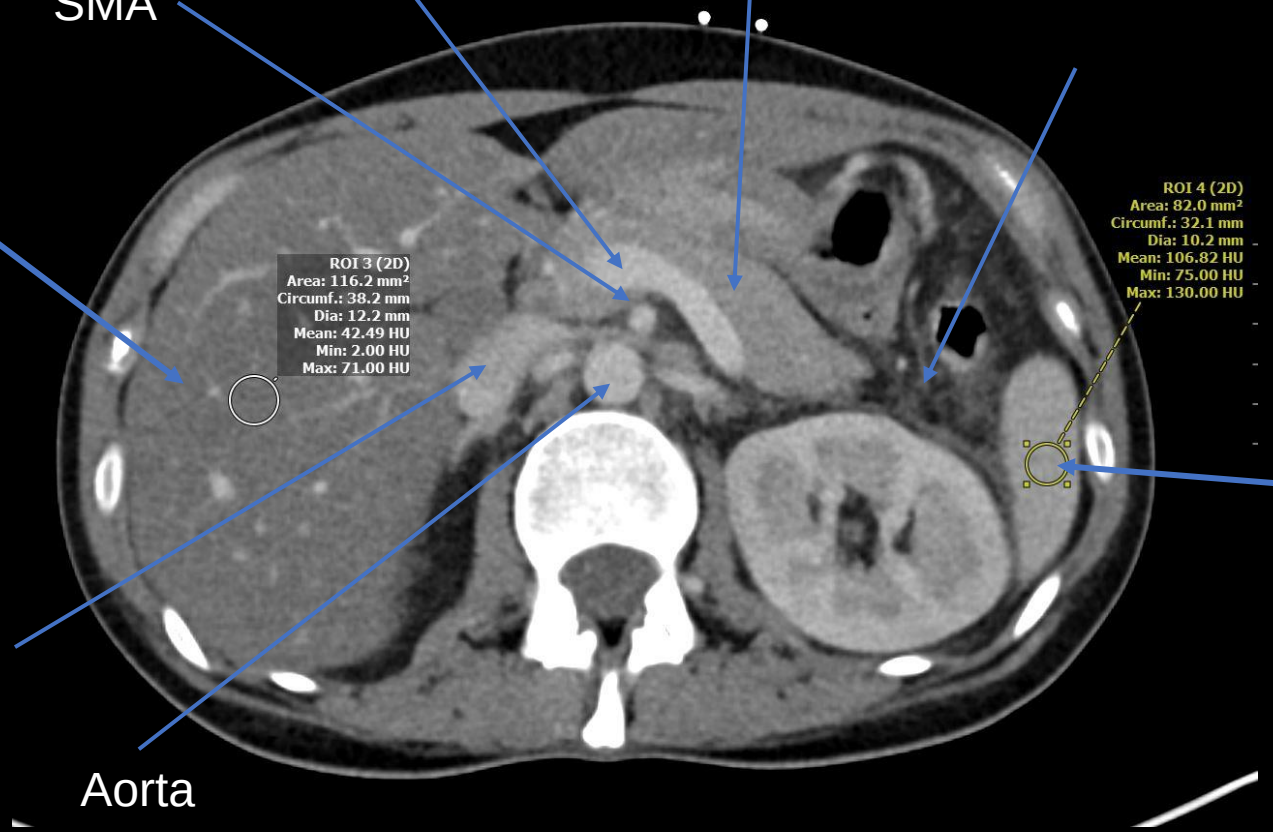

Liver with ↓ HU compared to spleen suggesting ↑ fat deposition

SMA

Splenic vein

Pancreas

Peripancreatic fluid and fat stranding

Spleen

IVC

Aorta

Final Dx:

Acute interstitial edematous pancreatitis
Moderate hepatic steatosis

Case Discussion

- Acute pancreatitis is acute inflammation of the pancreas
  - Two subtypes: interstitial edematous pancreatitis (90-95%) and necrotizing pancreatitis
- Etiology: most commonly gallstones or excessive ethanol use
- Presentation: constant abdominal pain radiating to the back; may also include nausea, vomiting, or fever
- Labs: increased lipase or amylase, could also have elevated LFTs or triglycerides
- Imaging: diffuse or localized enlargement of the pancreas with homogenous enhancement of parenchyma, inflammatory changes of peripancreatic fat, +/- peripancreatic fluid
  - Can visualize fat stranding and fluid in anterior pararenal and perirenal spaces
- Management: IVF/LR, pain control, early oral feeding, treat underlying cause

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Case Discussion

- Hepatic steatosis is accumulation of triglycerides within hepatocytes
  - Two subtypes: nonalcoholic fatty liver disease and alcoholic fatty liver disease
- Etiology: metabolic, nutritional, inflammation, toxins (alcohol), and autoimmune causes
- Presentation: occasional abdominal pressure otherwise usually asymptomatic
- Labs: elevated AST, ALT, could have AST > ALT, macrocytic anemia, increased GGT
- Imaging: On CT, healthy liver is usually hyperdense to spleen by approximately 8-10 HU. The increase of fat in hepatocytes decreases density of the liver it will become hypodense to the spleen, as seen in this patient
- Management: alcohol cessation, supportive care

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