

AMSER Case of the Month

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A 44-year-old man presents with stabbing epigastric pain radiating to the back

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Patient Presentation

- HPI: A 44-year-old man presented to the ED after waking up with stabbing epigastric pain radiating to the back. The patient was also having dry heaves but denied any vomiting.
- PMH: obesity, hypertension and alcohol use disorder.
- PE: Epigastric tenderness. Distended abdomen with guarding. Reduced bowel sounds.

Pertinent Labs

- Elevated lipase of 1,327 U/L.
- Amylase levels were within normal limits.

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

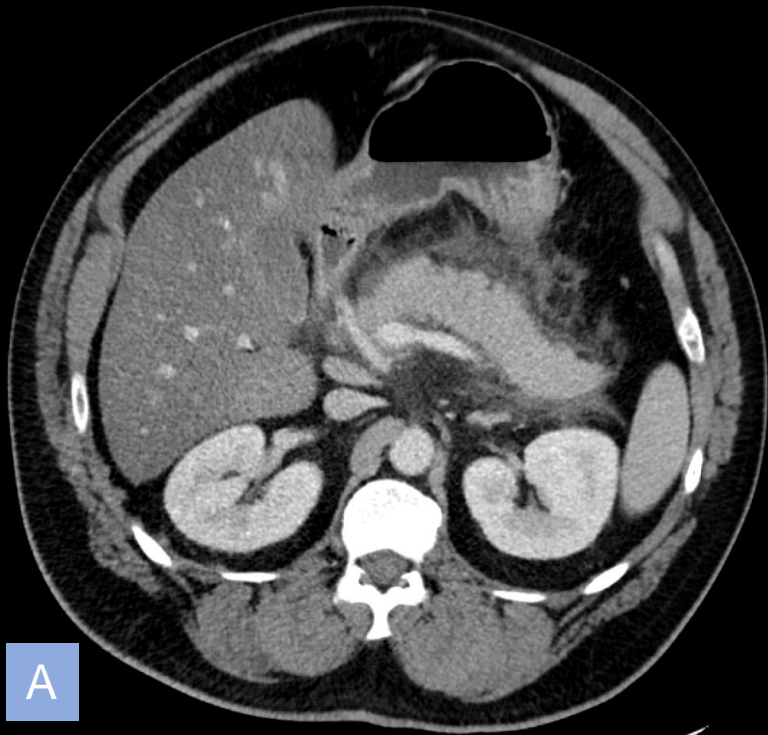
Variant 1:

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	0
CT abdomen and pelvis with IV contrast	May Be Appropriate	⚠⚠⚠
MRI abdomen without and with IV contrast with MRCP	May Be Appropriate	0
MRI abdomen without IV contrast with MRCP	May Be Appropriate	0
US duplex Doppler abdomen	May Be Appropriate	0
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	0

This imaging modality was ordered by the ER physician

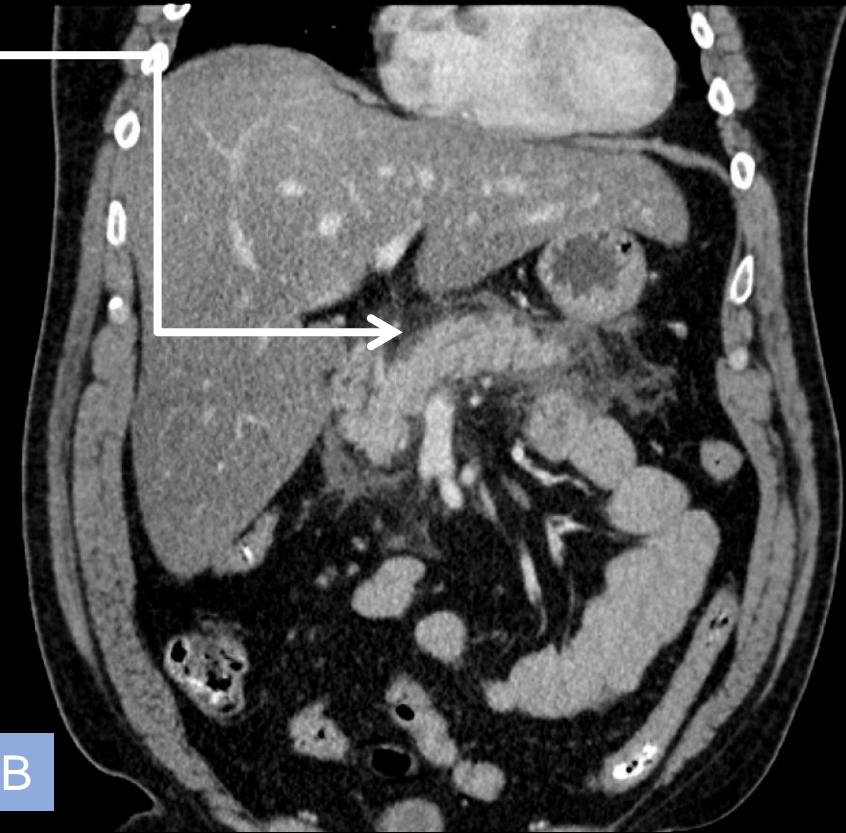
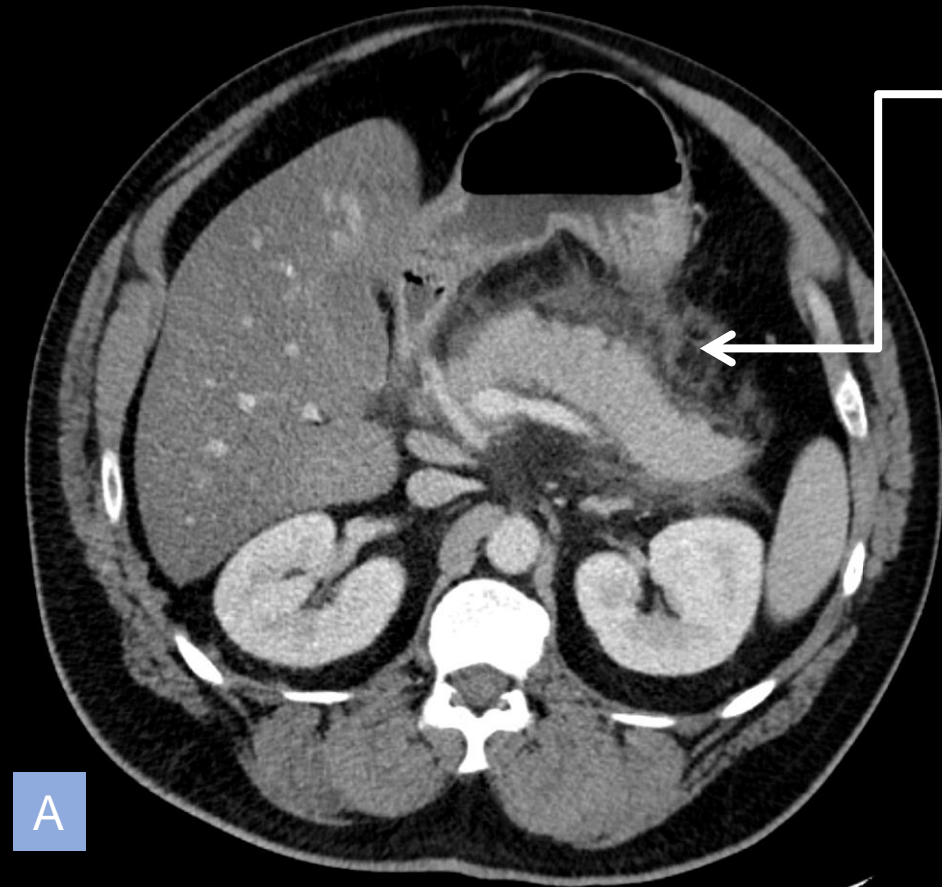
Findings (unlabeled)



CT images of the abdomen and pelvis in the axial (A) and coronal (B) planes

Findings: (labeled)

inflammatory fat stranding around pancreas and extending into lesser curvature of stomach without evidence of necrosis. The pancreatic margins are indistinct.



A

B

CT images of the abdomen and pelvis in the axial (A) and coronal (B) planes

Final Dx:

Edematous Pancreatitis

Case Discussion

- **Etiology**

- Alcohol abuse, gallstones, hypertriglyceridemia, hypercalcemia, drugs (ie statins, thiazides, loop diuretics), complication of ERCP, etc.

- **Epidemiology**

- The annual incidence of acute pancreatitis is reported to be 34 per every 100,000 in the general global population

- **Presentation**

- Sudden onset of severe epigastric pain that radiates to the back, usually accompanied by nausea, vomiting, and fever.
- Amylase and lipase levels are typically elevated. Lipase is more specific.

Case Discussion

- **Imaging**

- Abdominal ultrasound is recommended to assess for gallstones.
- Contrast enhanced CT is used if diagnosis is unclear, to evaluate for complications, and can be used to determine disease severity.
 - CT severity score findings include indistinct pancreatic margins, peripancreatic fat stranding, enlargement of the pancreas, the presence of collections or gas, and homogenous enhancement of the pancreas without evidence of necrosis.

- **Indications to obtain imaging:**

- Only two of the following three criteria are needed to make a diagnosis of acute pancreatitis: characteristic abdominal pain, elevated lipase and/or lipase over three times the normal limit, and characteristic imaging findings.
 - Therefore, if the first two criteria are met, imaging is not needed.
- Obtaining CT solely to assess for disease severity is not recommended as it does not affect disease course or improve outcomes.

Case Discussion

- **Key point**

- It was unnecessary for imaging to be obtained in this case. A diagnosis of acute pancreatitis could have been made with the history of classic abdominal pain and an elevated lipase of 1,327 U/L.
- Abdominal ultrasound may have been appropriate to assess for biliary tract obstruction from a gallstone.
- Unnecessary imaging exposes patients to harmful radiation without improving outcomes.
- It is important to keep this in mind when deciding what imaging to order and if any imaging is needed to make a diagnosis or direct management.

References

- Petrov MS, Yadav D. Global epidemiology and holistic prevention of pancreatitis. *Nat Rev Gastroenterol Hepatol*. 2019;16(3):175-184. doi:10.1038/s41575-018-0087-5
- Chatila AT, Bilal M, Guturu P. Evaluation and management of acute pancreatitis. *World J Clin Cases*. 2019;7(9):1006-1020. doi:10.12998/wjcc.v7.i9.1006
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