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 bowl 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.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>US abdomen</td>
<td>Usually Appropriate</td>
<td>O</td>
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<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>May Be Appropriate</td>
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<td>MRI abdomen without and with IV contrast with MRCP</td>
<td>May Be Appropriate</td>
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<tr>
<td>US duplex Doppler abdomen</td>
<td>May Be Appropriate</td>
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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)

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

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

