RADY 401 Case Presentation – Pancreatitis

Michael Galie MS4 2022
Focused patient history and workup

• “43 y.o. female with a PMH of Celiac disease, pancreatitis, hepatic steatosis, seizure disorder, and B12 deficiency anemia who presents to the ED for a sudden onset of progressively worsening epigastric pain radiating to her bilateral flanks with associated distension one day ago.”

• No HX of gallstones, drinks “socially”
Workup

- BP 108/92 | Pulse 120 | Temp 36.6 °C (97.9 °F) (Oral) | Resp 20 | SpO2 100%

- EXAM: RUQ tender without Murphy's sign. RLQ TTP with guarding. No CVA tenderness.

- Lipase = 613 (nl = 12-53), hCG = wnl, Lipid panel = unremarkable, Ca wnl
Differential

- PUD
- Pancreatic adenocarcinoma
- Nephrolithiasis
- Appendicitis
- Biliary Disease
- Viral Hepatitis
- MI
Differential ... sort of

IGETSMASHED
I: idiopathic
G: gallstones, genetic - cystic fibrosis
E: ethanol (alcohol)
T: trauma
S: steroids
M: mumps (and other infections)/malignancy
A: autoimmune
S: scorpion stings/spider bites
H: hyperlipidemia/hypercalcemia/hyperparathyroidism (metabolic disorders)
E: ERCP
D: drugs (tetracyclines, furosemide, azathioprine, thiazides and many others)
List of imaging studies – 2x Admissions

1. CT ABD Pelvis W Contrast
2. CT ABD Pelvis W Contrast
3. CT ABD Pelvis W Contrast
4. CT ABD Pelvis W Contrast
Initial CT ABD w/ Contrast
Initial CT ABD w/ Contrast

“Moderate inflammatory changes surrounding the pancreatic body and tail with free fluid, stranding, and reactive changes in the adjacent bowel and gallbladder. No focal masses or ductal dilatation. There is preserved normal enhancement throughout the pancreatic parenchyma.”
Initial CT ABD w/ Contrast

Coronal view of initial CT demonstrates peripancreatic fat stranding
Follow-up Second CT ABD w/ Contrast

“Decreased inflammatory stranding and free fluid around the pancreatic body and tail of 4/16/2022. Enhancement is present throughout the pancreatic parenchyma. No ductal dilatation. Normal vascular structures without development of venous infarction or development of pseudoaneurysm. No organizing peripancreatic fluid collection. Scattered peripancreatic lymph nodes, likely reactive.”
Follow-up Third CT ABD w/ Contrast
Follow-up Third CT ABD w/ Contrast

“Inflammatory stranding involving the pancreatic head and neck, consistent with acute pancreatitis. There is a small area of hypoenhancement involving the pancreatic head, which may represent for necrosis. No peripancreatic fluid collections.”
Follow-up Fourth CT ABD w/ Contrast

“Persistent inflammatory stranding involving the pancreatic head and neck, similar to slightly improved. Increased conspicuity of a hypoattenuating 0.7 cm structure adjacent to the pancreatic head/neck, concerning for organizing pancreatic/peripancreatic collection. No ductal dilatation. Normal vascular structures without pseudoaneurysm.”
Patient Treatment/Outcome

• IVF
• Pain control – PCA -> PO
• Clear liquid diet

• Referred to Biliary Clinic -> Pending
Was CT Required?

• “The diagnosis of acute pancreatitis requires two of the following three features: (1) *abdominal pain* consistent with acute pancreatitis (acute onset of a persistent, severe, epigastric pain often radiating to the back); (2) serum *lipase activity* (or *amylase activity*) *at least three times greater than the upper limit of normal*; and (3) characteristic findings of acute pancreatitis on contrast-enhanced computed tomography (CECT) and less commonly magnetic resonance imaging (MRI) or transabdominal ultrasonography.”
### ACR Appropriateness Criteria – Initial Presentation/Suspected

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<th>Procedure</th>
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<th>Peds RRL</th>
<th>Appropriateness Category</th>
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<td>CT abdomen and pelvis with IV contrast</td>
<td>1-10 mSv</td>
<td>3-10 mSv [ped]</td>
<td>Usually appropriate</td>
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<tr>
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<td>MRI abdomen without and with IV contrast with MRCP</td>
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CT vs Ultrasound

- $799 - $1348 – CT ABD w/ contrast\(^2\)
  - 1-10 msV x 4
- $240 - $416 – ABD Ultrasound
  - No radiation
Role of Ultrasound in Pancreatitis

• US first for new presentation of pancreatitis to r/o gallstones/biliary disease³
• If gallstone pancreatitis, proceed to ERCP
Performance of CT in Diagnoses

- CT negative in up to 25% of cases, early on\(^3\)

- CT is up to 100% specific for detecting pancreatic necrosis\(^4\)
### Table 1 Definitions based on the revised Atlanta classification

From: *The revised Atlanta classification for acute pancreatitis: updates in imaging terminology and guidelines*

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<td>Acute peripancreatic fluid collection (APFC)</td>
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<td>Pancreatic pseudocyst (with or without infection)</td>
<td>Peripancreatic fluid collection with a well defined wall with little or no necrosis apparent at ≥4 weeks post disease onset</td>
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<td>Post-necrotic pancreatic fluid collection (PNPFC)</td>
<td>Persistent collections containing fluid, necrosis and/or loculation in varying degrees associated with acute necrotizing pancreatitis. May be present in the pancreas, the peripancreatic tissue or both</td>
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<td>Walled-off pancreatic necrosis (WOPN) (with or without infection)</td>
<td>Persistent collection with thickened wall lacking an epithelial lining. May be apparent in the pancreas, the peripancreatic tissue or both ≥4 weeks post disease onset</td>
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![Diagram of diagnostic algorithm for acute pancreatitis](image)

*Remember: Describe the location and size.
Avoid "acute pancreatitis" and "pancreatic abscess".
Look for gas; any collection may become infected.*

*May need follow-up exams to discern between early APF and APFC.*
UNC Top Three

• Pancreatitis can be a clinical/laboratory diagnoses and imaging is not always required!

• EXCEPT in:
  1. Initial presentation of pancreatitis - U/S to rule out biliary cause
  2. Tracking disease progress and identifying complications - CT/MR


