AMSER Case of the Month: July 2019

25 year-old male with nausea, vomiting and back pain

Wayne Dell, MS4
University of Florida College of Medicine

Dr. Nupur Verma
Program Director, Diagnostic Radiology
University of Florida College of Medicine

Dr. Erinn Cooke
Director, Medical Student Program
University of Florida College of Medicine

UFHealth
UNIVERSITY OF FLORIDA HEALTH

AMSER

Patient Presentation

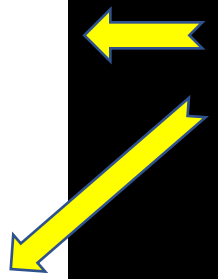
- CC/HPI: 25 year old man presents to ED for 3 days of abdominal distension, nausea, vomiting, back pain
- PMHx and SHx: No pertinent history, no surgeries
- Vital Signs: BP 148/90 | HR 113 | RR 16 | T 98.2 | O2 100%
- Physical Exam: + epigastric tenderness, no rebound or guarding
- Laboratory:
  - WBC 17 (normal diff), Hb 13.6, Hct 41.1, PLT 451
  - AST 21, ALT 53, Alk phos 73, Tbili 0.7
  - Lipase 33 U/L (WNL)

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

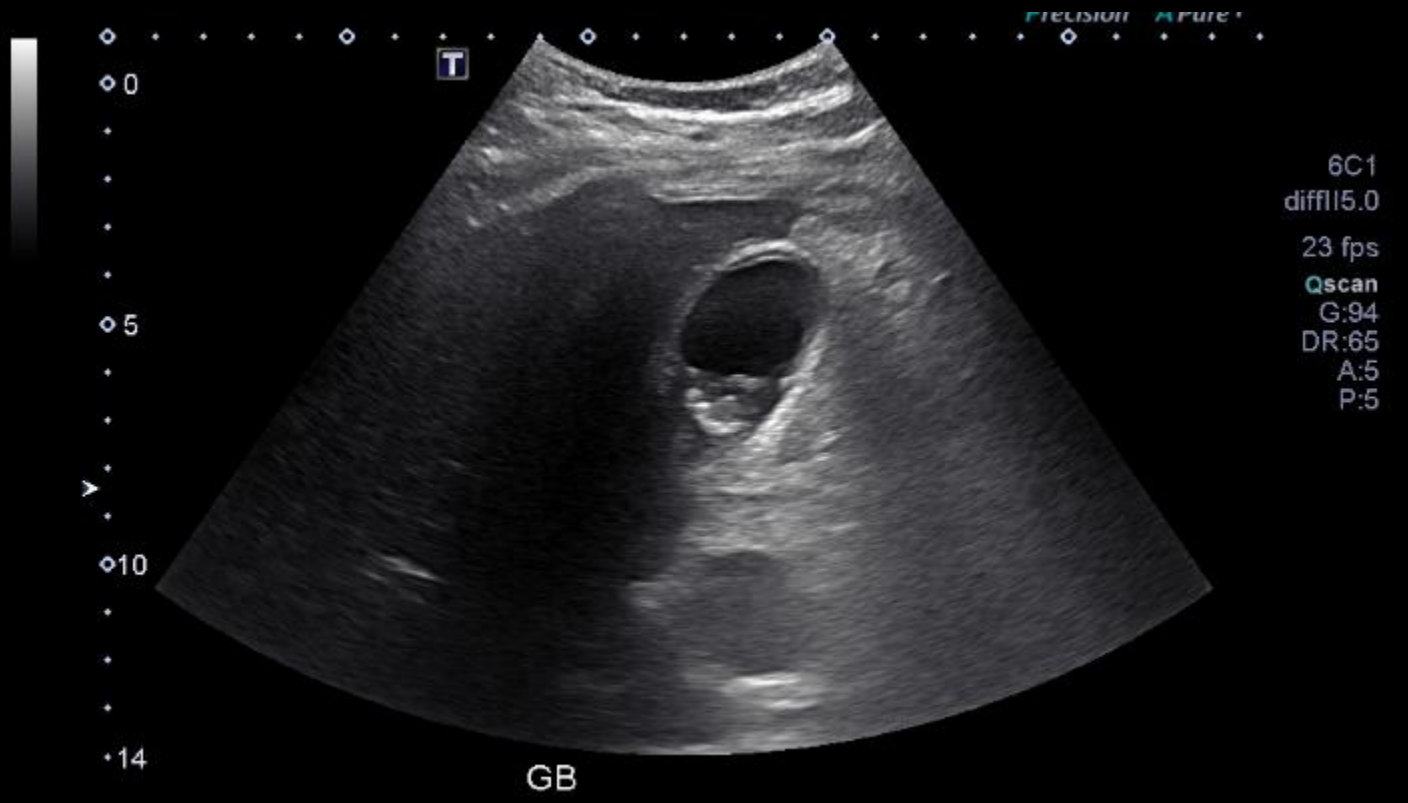
Variant 2: **Suspected acute pancreatitis. Initial presentation with atypical signs and symptoms; including equivocal amylase and lipase values (possibly confounded by acute kidney injury or chronic kidney disease) and when diagnoses other than pancreatitis may be possible (bowel perforation, bowel ischemia, etc). Initial imaging.**

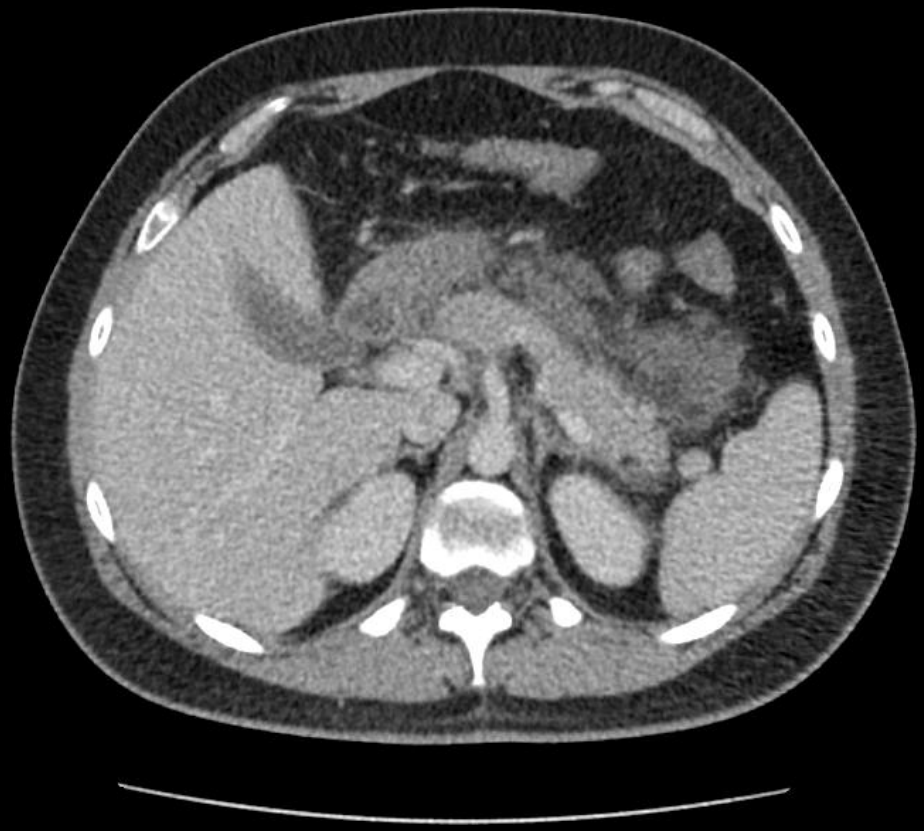
Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
MRI abdomen without and with IV contrast with MRCP	Usually Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
MRI abdomen without IV contrast with MRCP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



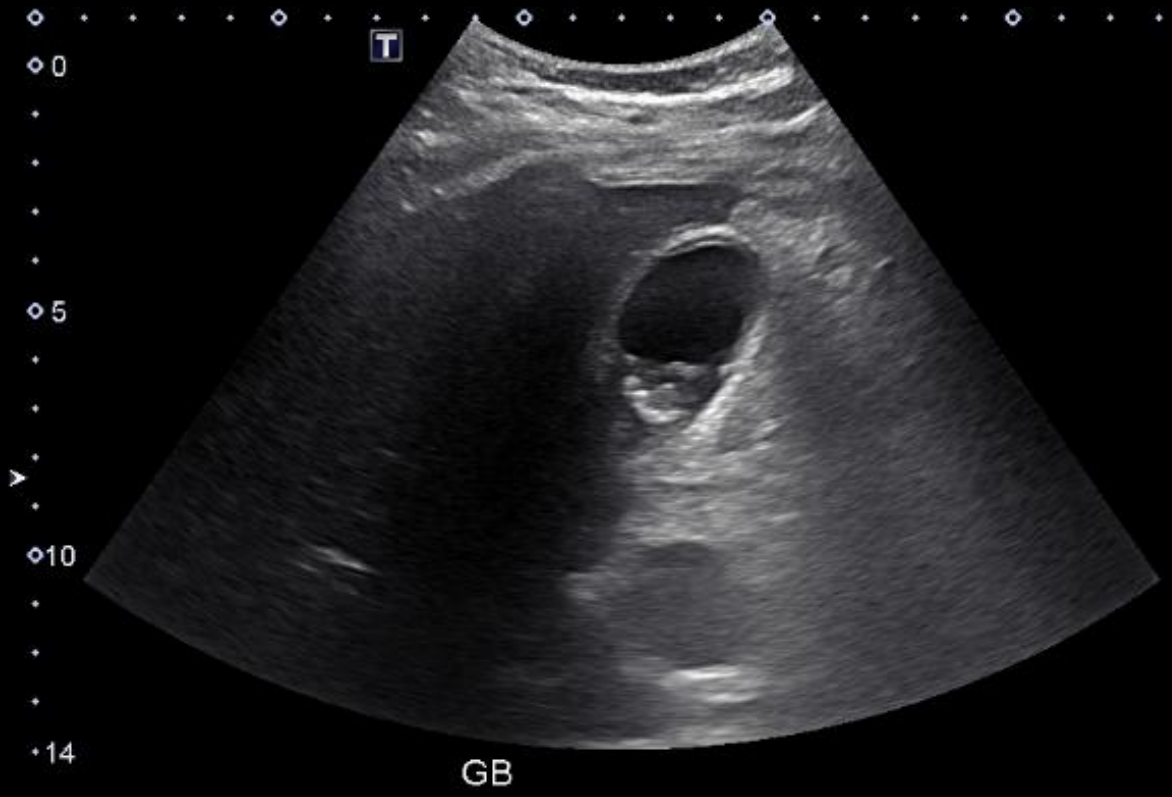
These imaging modalities were ordered by the ER physician

Findings (unlabeled)

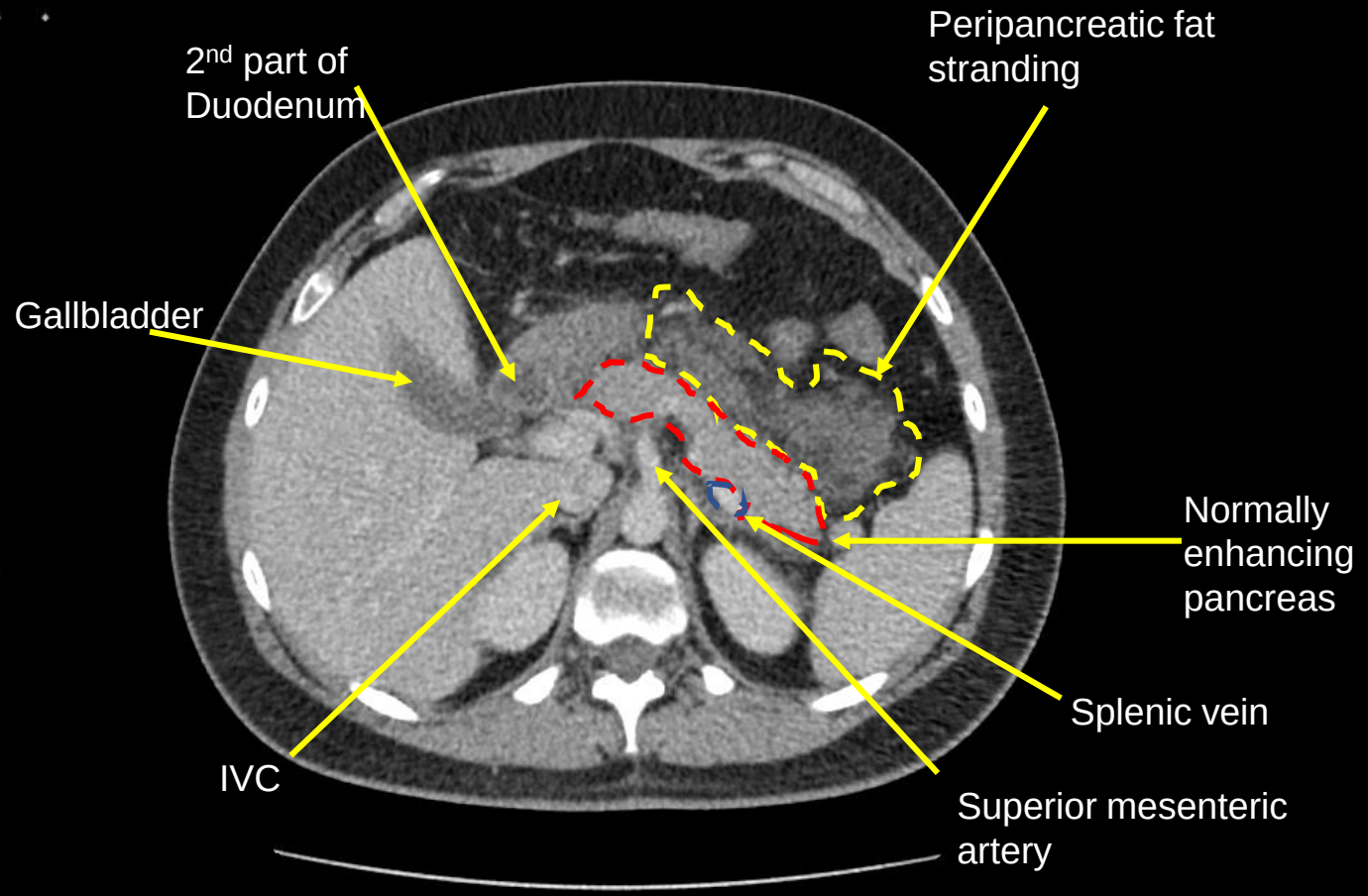




Findings (labled)



US RUQ: Gallbladder
Stones and sludge in the gallbladder. Negative Murphy's sign.



CT Abdomen with IV Contrast: Pancreas
Significant stranding in peripancreatic fat stranding.
Pancreas enhances normally.
No drainable fluid collection.

AMSER

Final Dx:

Acute interstitial edematous pancreatitis

Case Discussion

- Acute Pancreatitis (described by the Atlanta Classification System)
  - Two broad categories
    - Interstitial edematous pancreatitis (IEP)
      - More common than necrotizing pancreatitis
      - Pancreas will enhance homogeneously and appear engorged, typically with peripancreatic inflammation or fluid
    - Necrotizing Pancreatitis
      - Accounts for 5-10% of all cases of acute pancreatitis
      - Necrosis of pancreatic parenchyma and/or peripancreatic tissues, with hypoenhancement of the gland on CT
- Fluid collections around the pancreas
    - *Acute peripancreatic fluid collection (APFC)*
    - *Pseudocyst*
    - *Acute necrotic collection*
    - *Walled off necrosis*
- Complications
  - Infection
  - Vascular: splenic vein thrombosis, pseudoaneurysm, hemorrhage

Bonus: 4 months later

CC/HPI: Patient returns with 1 day of progressive abdominal pain radiating to back, nausea, vomiting

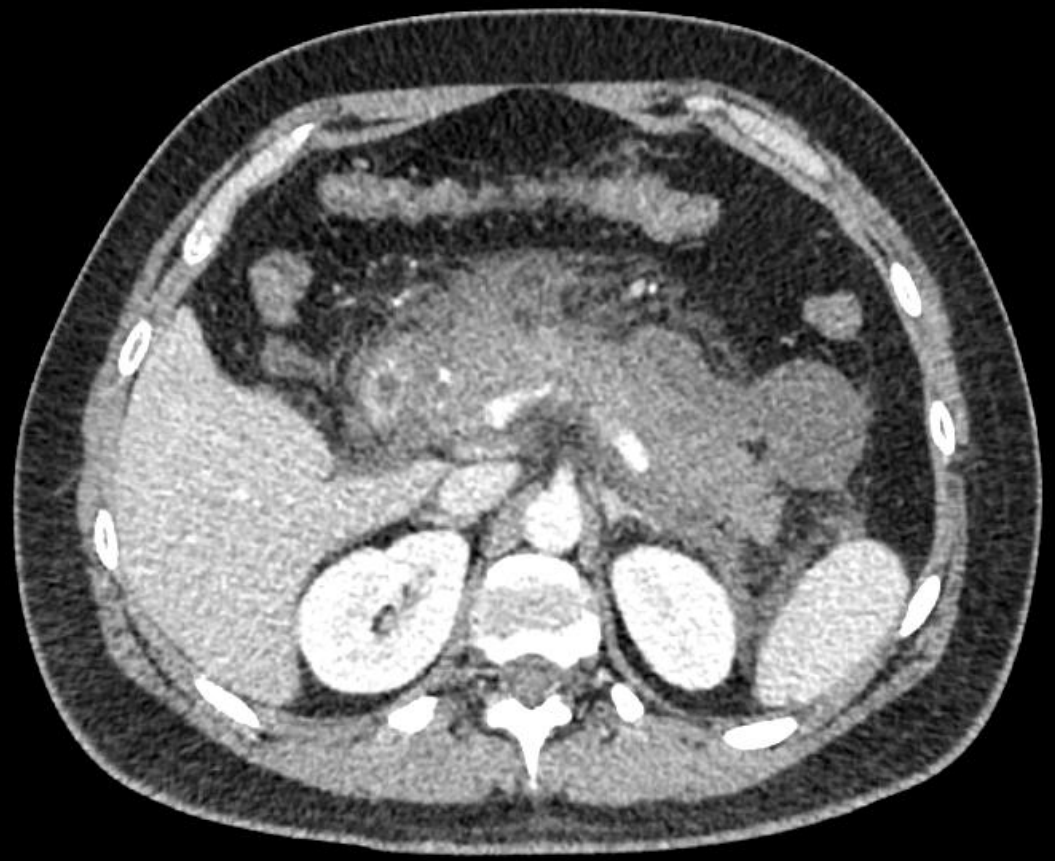
Vital Signs: BP 145/93 | HR 54 | RR 16 | T 96.6 | O2 100%

Physical Exam: + epigastric tenderness, no rebound or guarding

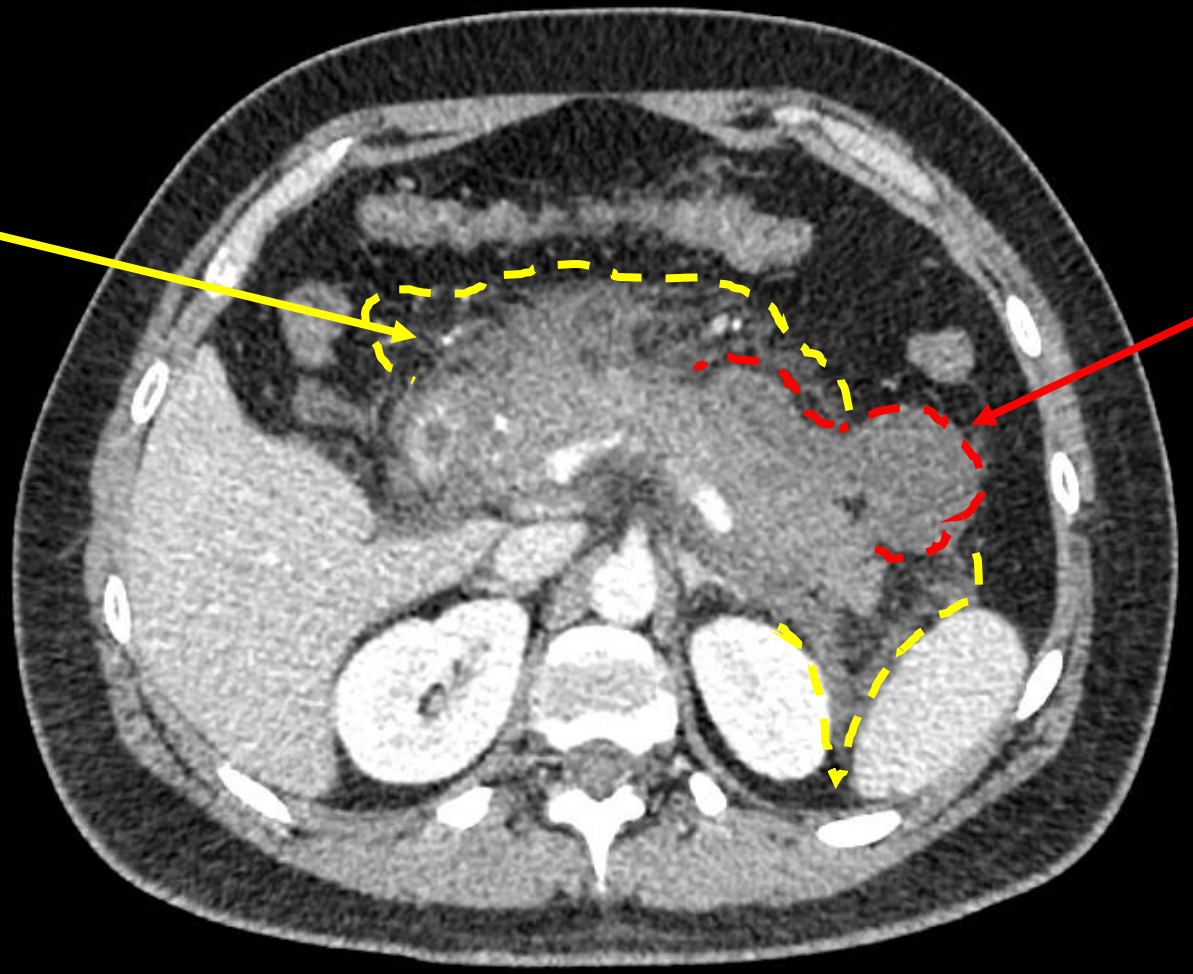
Laboratory:

WBC 13.9, Hb 13.1, Hct 37.5, PLT 467
AST 385, ALT 511, Alk phos 85, Tbili 6.2, Direct 4.0
Lipase 1,376 U/L

Findings (unlabeled)



Imaging Findings (labeled)



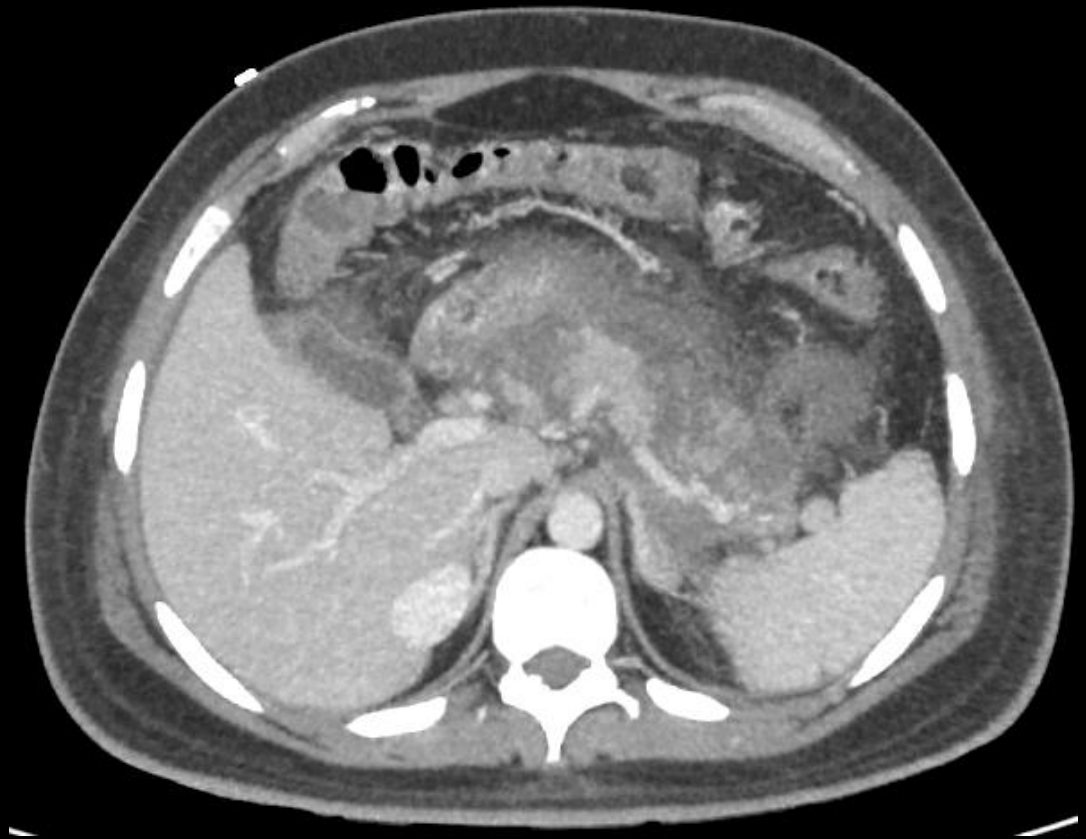
CT Abdomen with IV Contrast:
Worsening of pancreatic enlargement and increasing peripancreatic phlegmon involving left pararenal fascia.

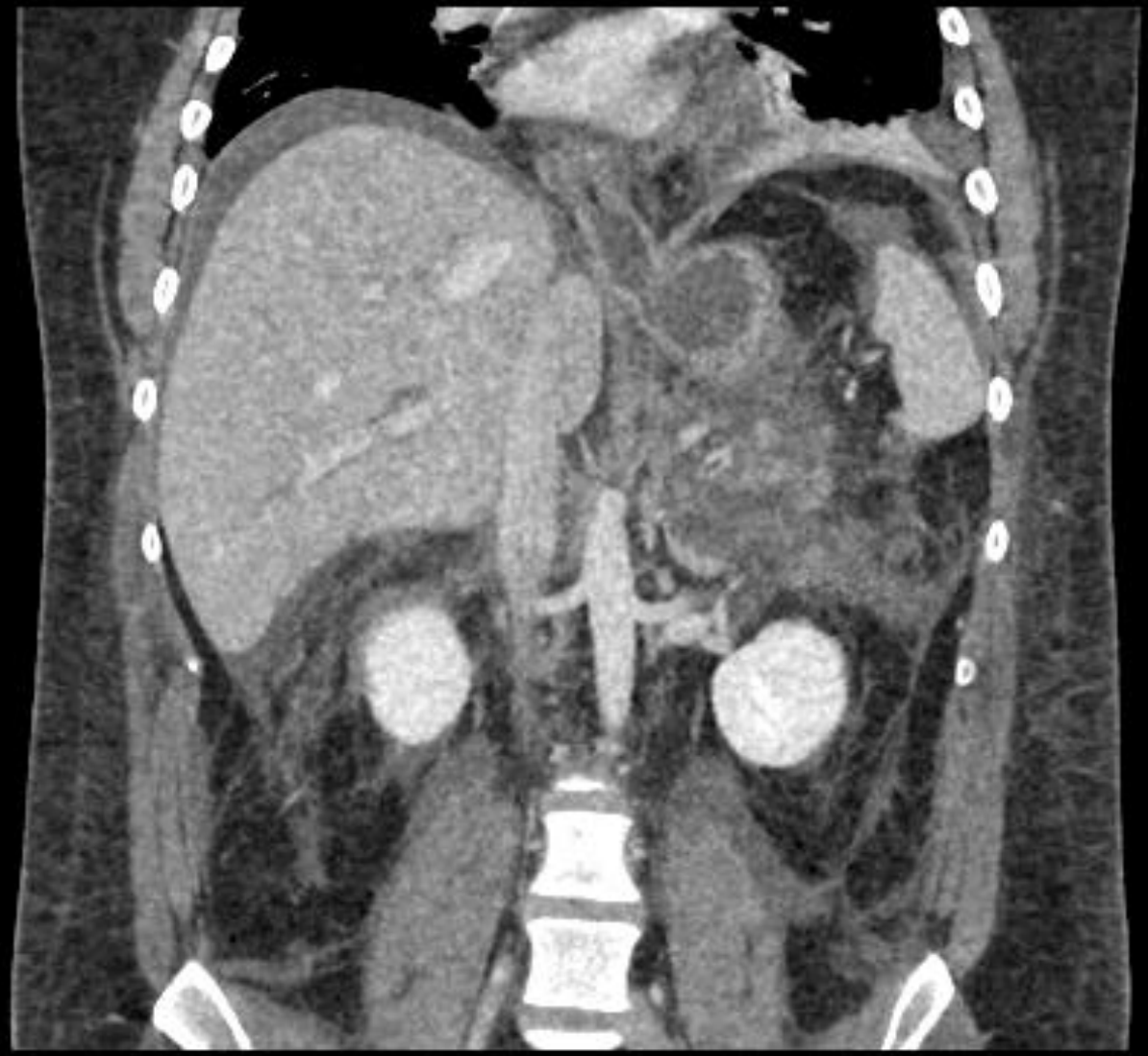
5.8 cm peripancreatic fluid collection which does not demonstrate peripheral enhancement, likely pseudocyst.

Hospital Day 2

Patient was admitted for acute interstitial edematous pancreatitis with pseudocyst. On second day of admission, developed fever, tachycardia and new O2 requirement. CT Abd/Pelvis ordered.

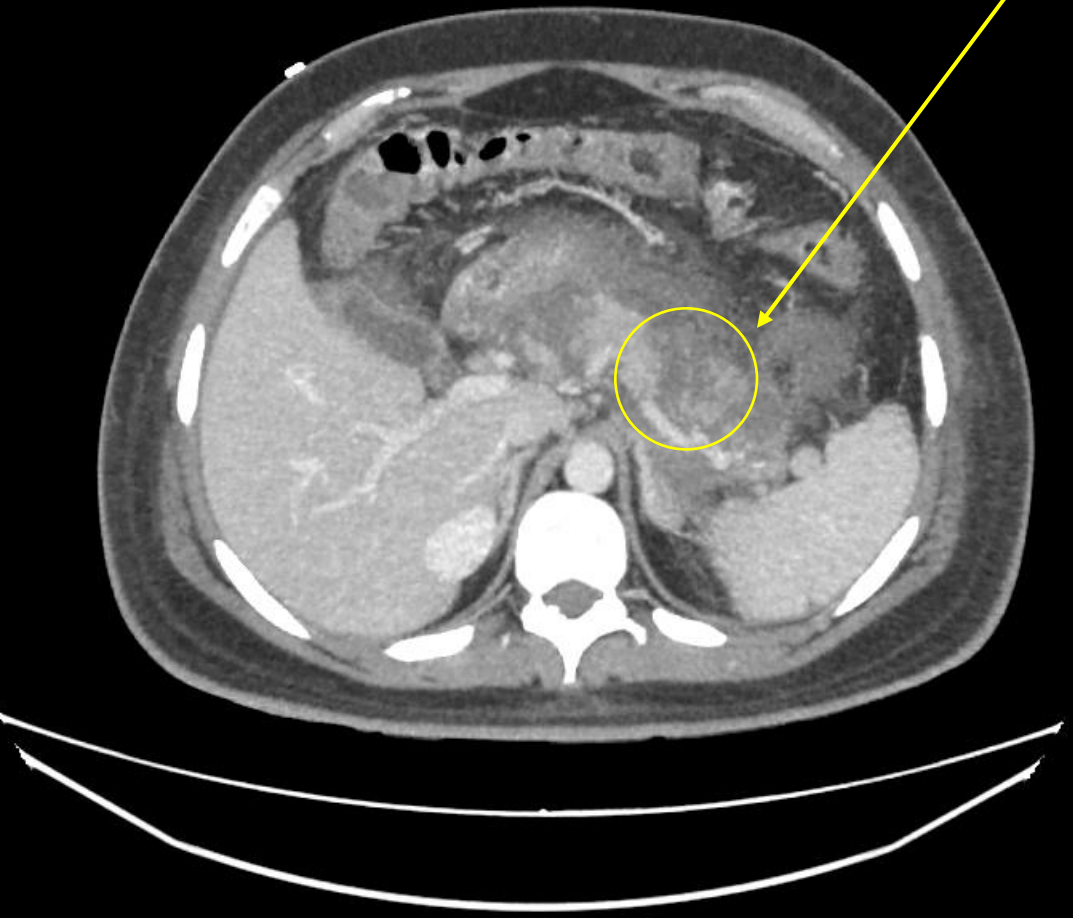
Do you see any changes?



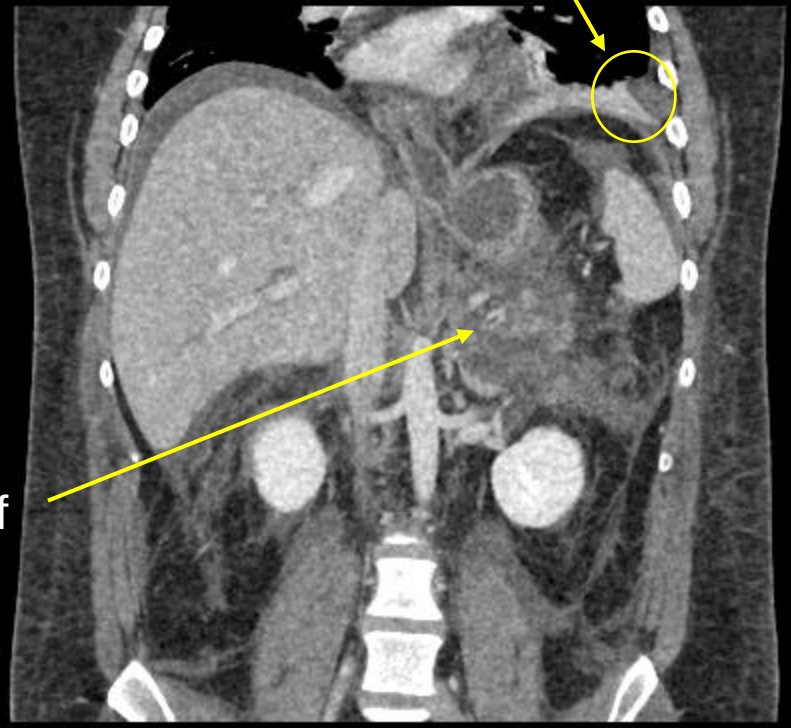


Findings (labeled)

Patchy hypoenhancement of the pancreatic parenchyma, consistent with necrosis



Pleural effusion



Coronal section of focal splenic vein thrombosis

References:

https://acsearch.acr.org/docs/69468/Narrative/

http://www.radiologyassistant.nl/en/p550455dae5806

https://www.uptodate.com/contents/management-of-acute-pancreatitis?search=acute%20pancreatitis&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

https://pubs.rsna.org/doi/full/10.1148/rg.2016150097