

AMSER Case of the Month

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59-year-old female receives a confirmation study after placement of a feeding tube



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Patient Presentation

- The patient is a 59-year-old female with a history of SPINK1 positive chronic pancreatitis, liver cirrhosis secondary to NASH, hypothyroidism, and active tobacco use.
- The patient presented to the ED with altered mental status, abdominal pain, and jaundice. For several weeks she has had reduced oral intake, ongoing nausea, and chronic abdominal pain, with mental status and appetite worsening over the last few days.
- A nasogastric feeding tube was inserted.

Pertinent Labs and Exam

- Fecal elastase: <50 (this low value indicates pancreatic insufficiency)
- SPINK1 mutation positive (increased risk of chronic pancreatitis)
- Diffuse abdominal tenderness

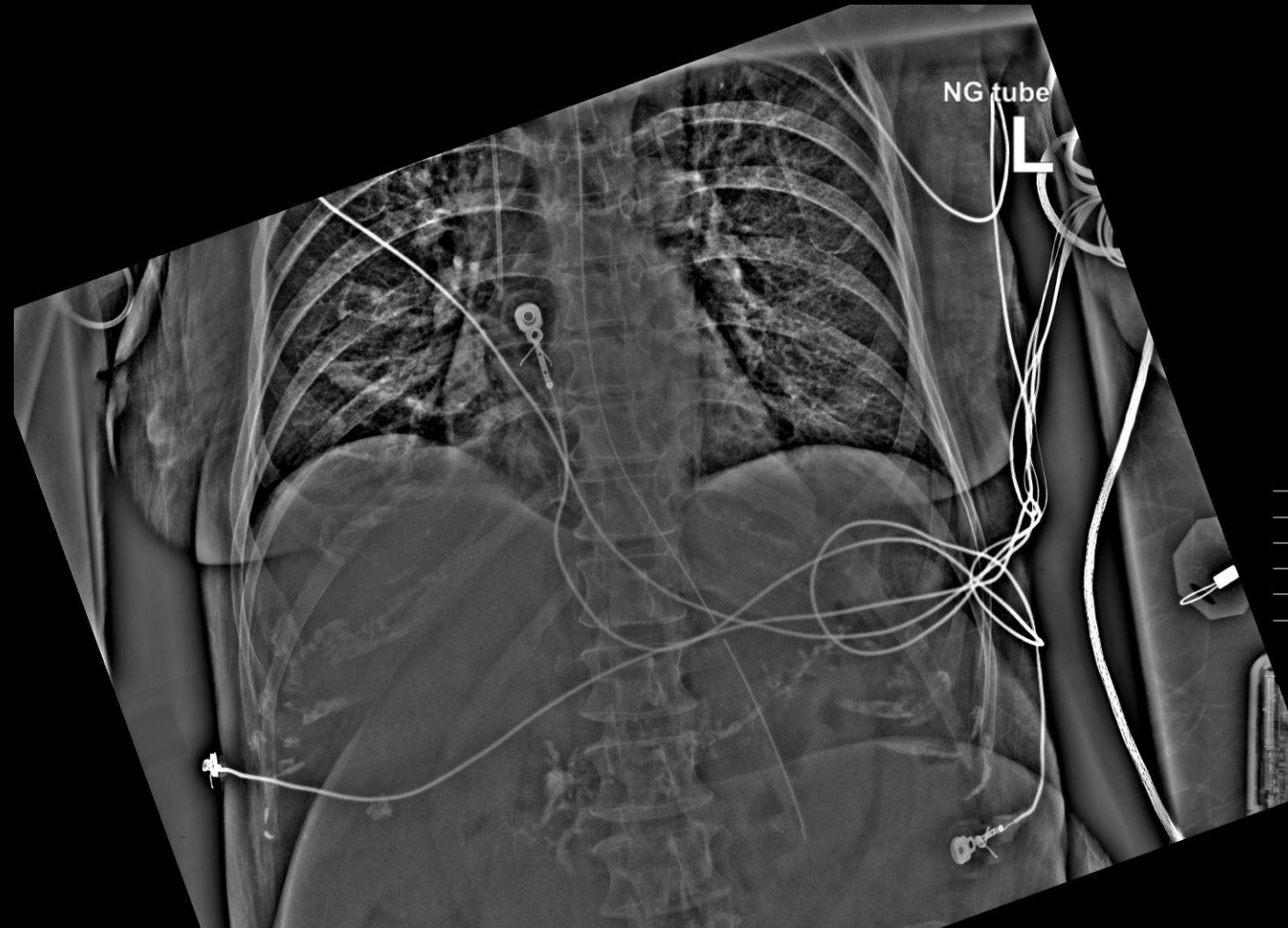
What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Scenario	Scenario Id	Procedure	Adult RRL	Peds RRL	Appropriateness Category	
ICU patient, nasogastric tube placement, follow up imaging	3194032	Radiography chest portable	<0.1 mSv ⊕	Not Assigned	Usually appropriate	●
		US chest	0 mSv ○	0 mSv [ped] ○	May be appropriate	●

Ultimately an X-ray of the Abdomen AP was ordered due to similar coverage.

X-ray Abdomen/Scout AP (unlabeled)

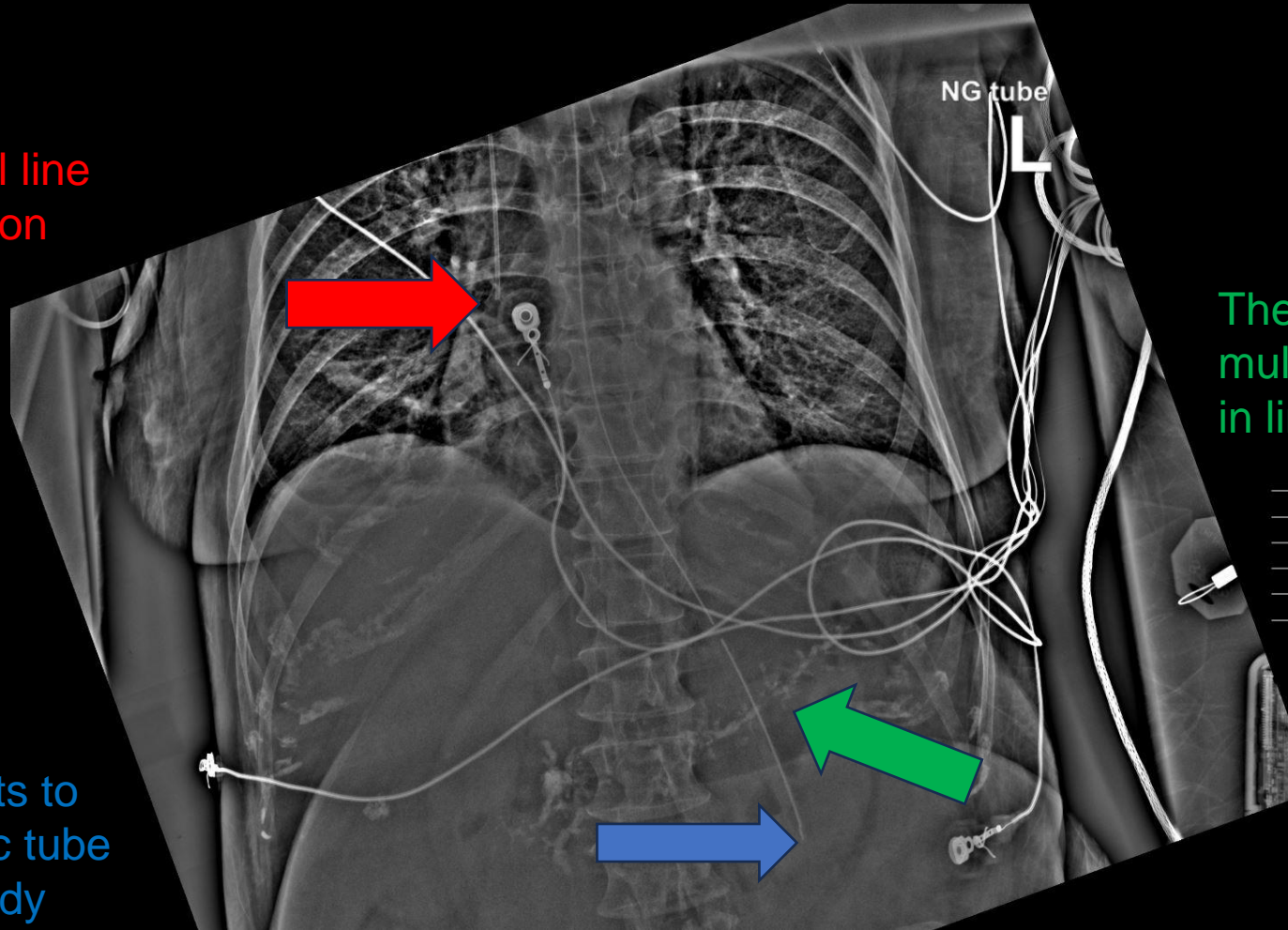


CT Abdomen Pelvis without contrast (unlabeled)



X-ray Abdomen/Scout AP: (labeled)

The red arrow points to the tip of the central line at the cavoatrial junction

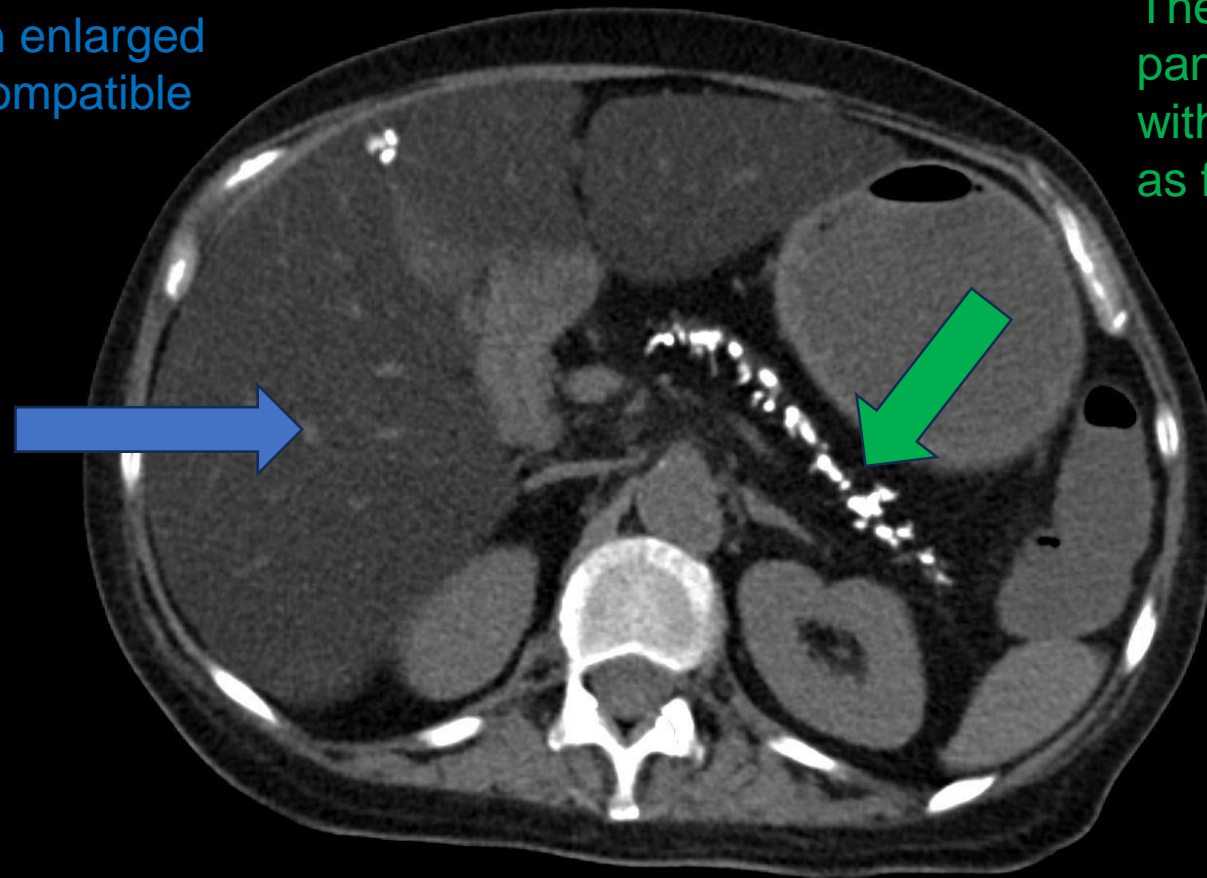


The green arrow points to multiple prominent calcifications in line with chronic pancreatitis

The blue arrow points to the tip of nasogastric tube in the mid gastric body

CT Abdomen Pelvis without contrast: (labeled)

The blue arrow points to an enlarged liver with low attenuation compatible with hepatic steatosis



The green arrow points to diffuse pancreatic calcifications in line with chronic pancreatitis, as well as fatty infiltration and atrophy

Final Dx:

Chronic Pancreatitis

Chronic Pancreatitis Etiology

- Chronic pancreatitis involves inflammation, fibrosis, and loss of acinar and islet cells. The disease typically occurs after repeated episodes of acute pancreatitis.
- About one-half of cases in the United States are due to alcohol, while about 10-30% are idiopathic. Genetics and tobacco also play a significant role.
- Hereditary chronic pancreatitis associated with a mutation in the serine protease inhibitor, Kazal Type-1 (SPINK-1 gene) is extremely rare. The SPINK1 mutation results in trypsinogen activation which predisposes to chronic pancreatitis predominately when combined with CFTR gene mutations. It presents as either chronic or recurrent acute pancreatitis.

Manifestations

- Abdominal pain is the most common symptom. It is typically felt in the epigastric region and radiates to the back, though it does not correlate to the severity of damage on imaging (CT, MRCP, etc.). Steatorrhea, nausea and vomiting, and weight loss are also seen. Some patients are asymptomatic.

Diagnosis

- The best initial tests are CT using multidetector technology and a pancreatic protocol, or MRI with MRCP. Imaging findings may not be present early in the disease course.
- In the case of equivocal cross-sectional imaging a secretin pancreatic function test or endoscopic ultrasound can be used, though neither is sufficient by itself to establish the diagnosis and must be correlated clinically.

Treatment

- Cessation of alcohol and smoking is highly recommended. These measures reduce progression, and in the case of tobacco reduce the likelihood of progression to pancreatic cancer. Some patients may experience some pain relief with abstinence.
- Diet should consist of small, low-fat meals, with care taken to avoid dehydration (though this is not supported by any data). Vitamin supplementation is often required, especially for vitamin D and calcium.
- First line medications for pain are NSAIDs and acetaminophen, with opioids only used if these fail. Low-potency opioids such as tramadol are used first, and adjuncts such as serotonin and norepinephrine reuptake inhibitors are used.

References:

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5. Patel J, Madan A, Gammon A, Sossenheimer M, Samadder NJ. Rare hereditary cause of chronic pancreatitis in a young male: SPINK1 mutation. *Pan Afr Med J*. 2017 Oct 4;28:110. doi: 10.11604/pamj.2017.28.110.13854. PMID: 29515728; PMCID: PMC5837166.