70-year-old man with a 2-month history of painless jaundice, pruritis, and scleral icterus

Kaitlyn Petitpas, MS3

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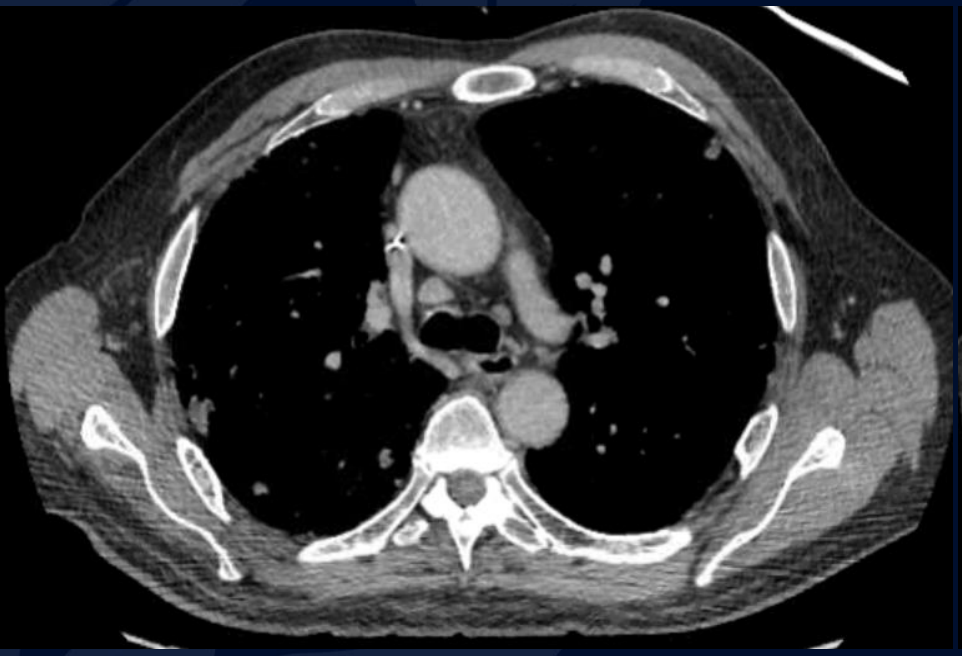
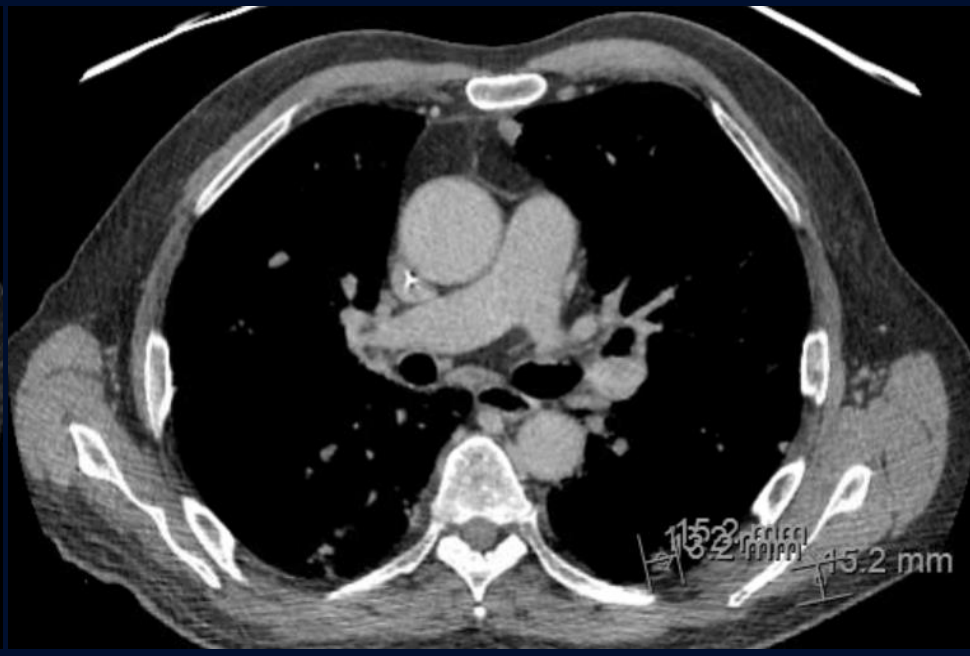
CT with Oral Contrast





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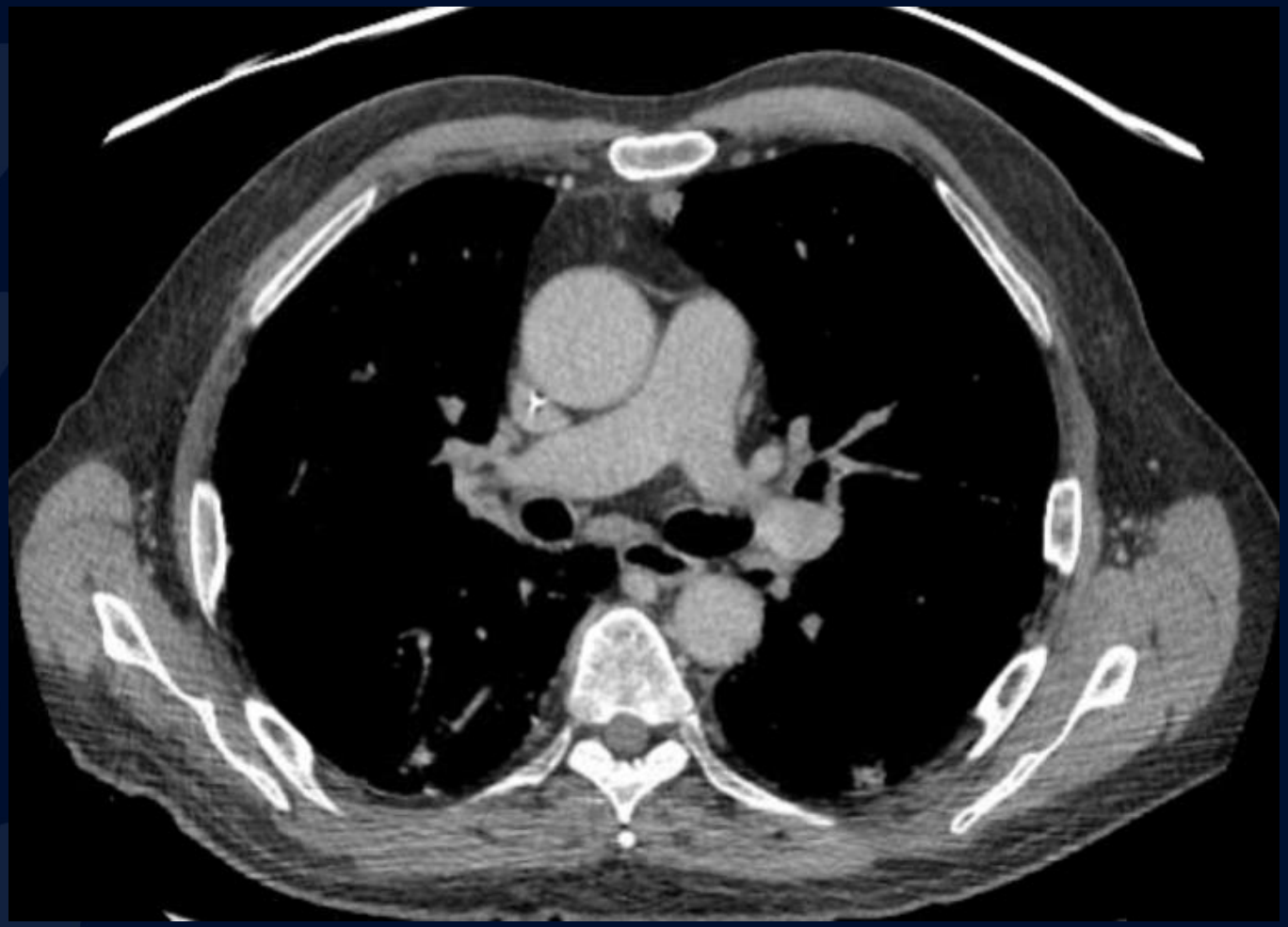

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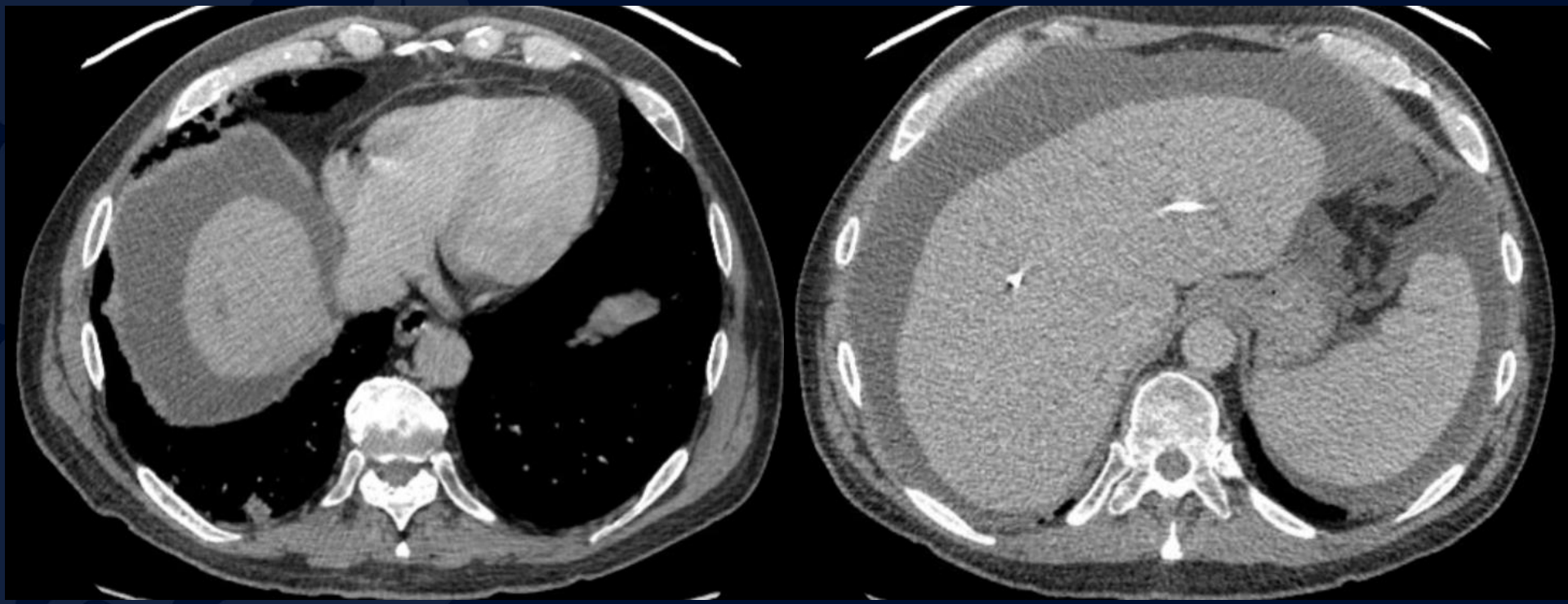

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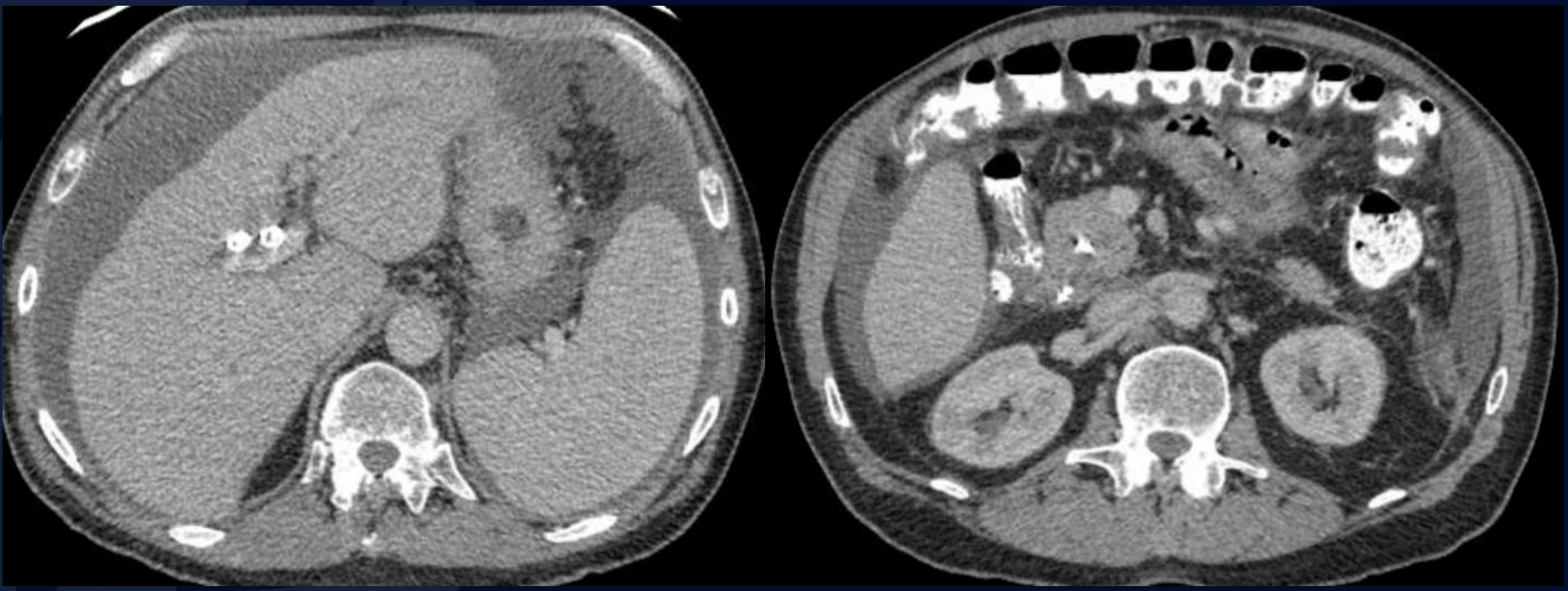

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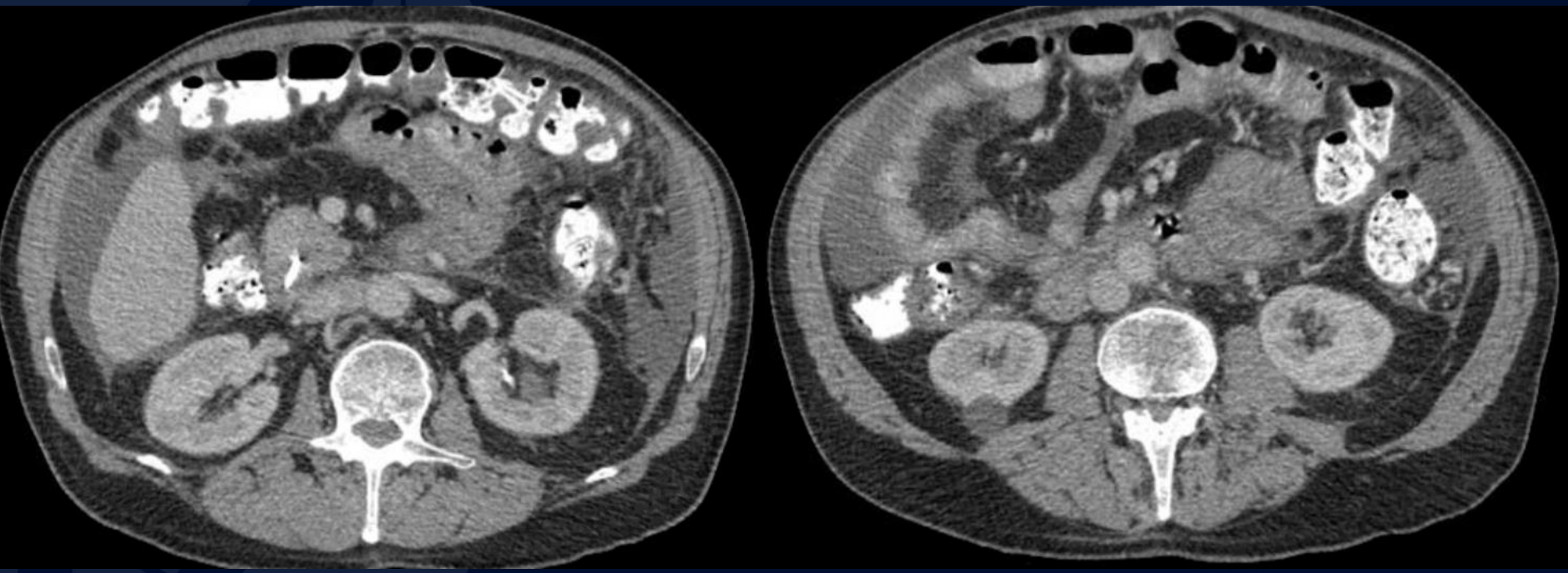

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Metastatic Pancreatic Adenocarcinoma

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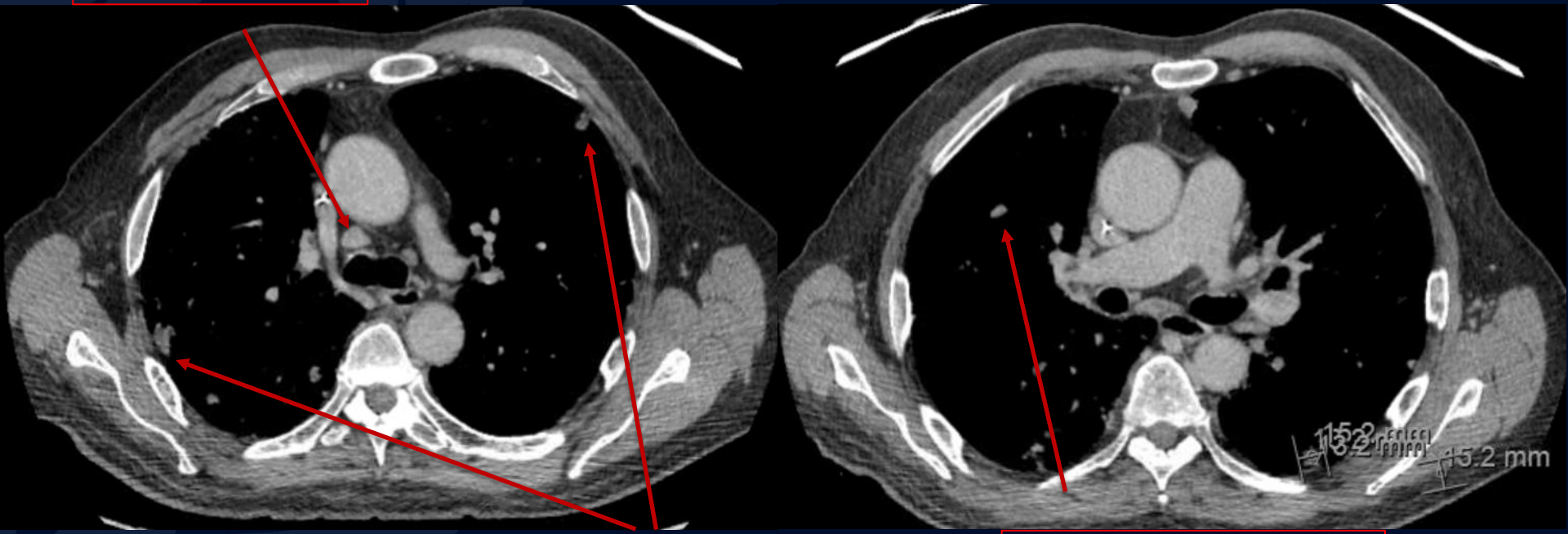
Precarinal lymphadenopathy



Subpleural nodules

Right upper lobe nodule

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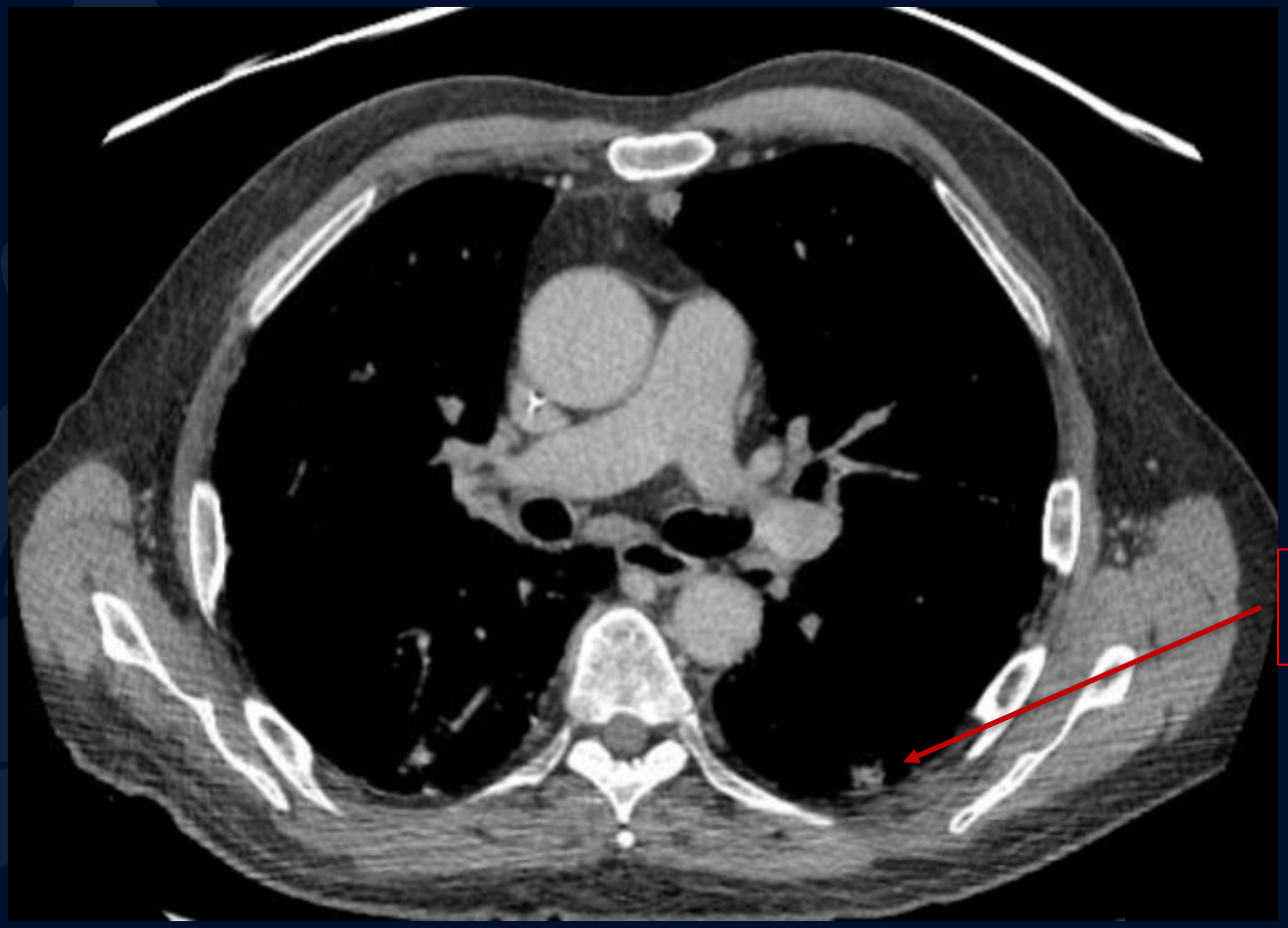

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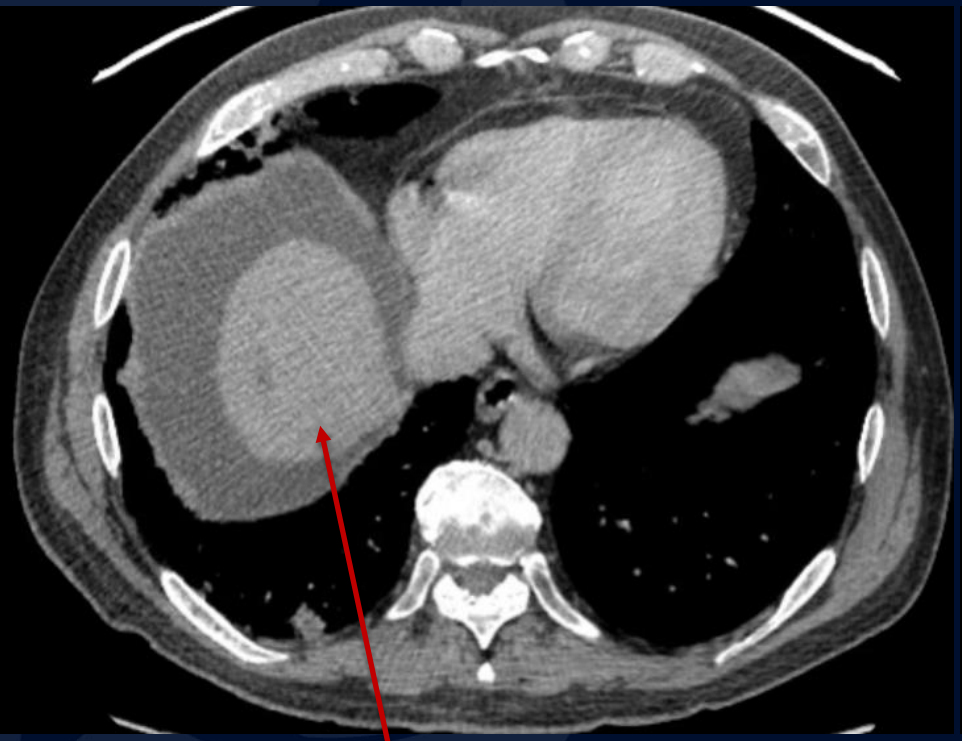
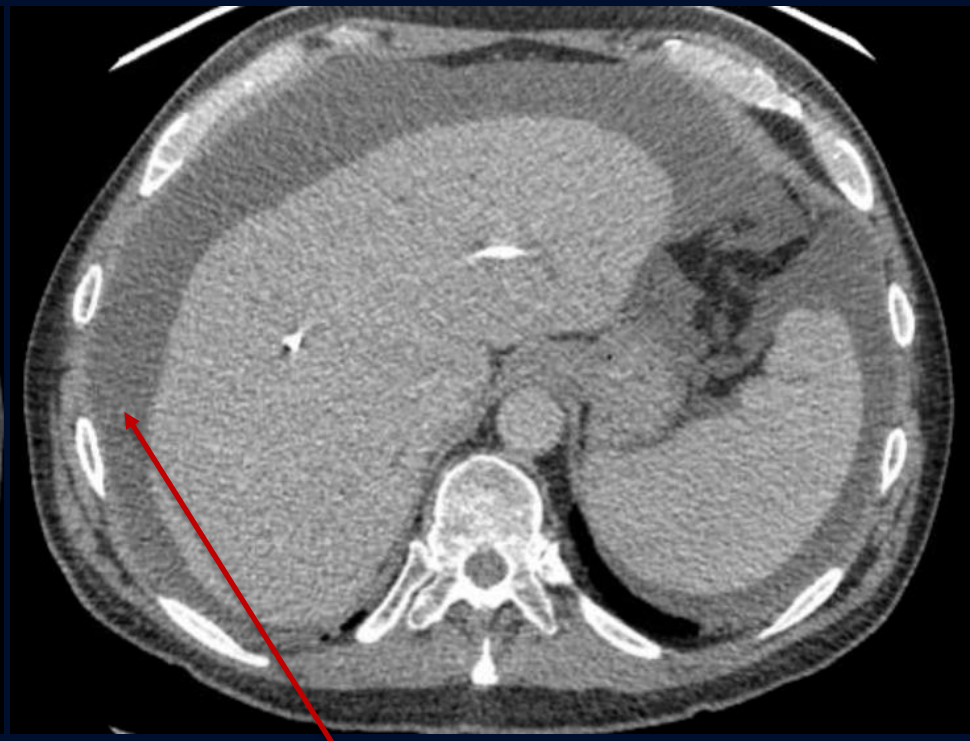


Subtle ill-defined hypodense liver lesion



Ascites

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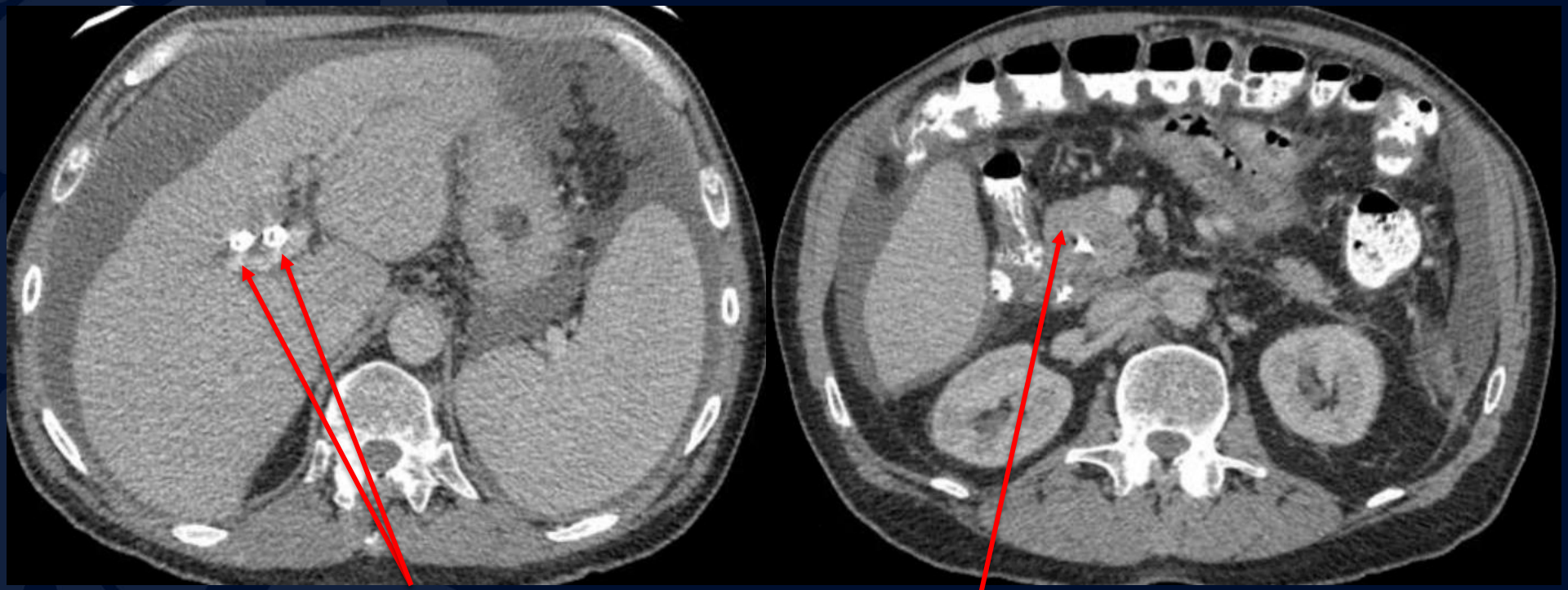

Biliary stents; no intrahepatic biliary duct dilatation

Hypodense mass in the pancreatic head

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Pancreatic Adenocarcinoma

Malignancy arising from ductal epithelium of the exocrine pancreas

- Most common malignant tumor of exocrine pancreas
- Accounts for >95% of pancreatic malignancies
- 60% in pancreatic head, 20% in body, 15% are diffuse, 5% in tail
- Often asymptomatic early in disease course resulting in late presentation
- Most common symptoms are jaundice, weight loss, abdominal pain, back pain
- Poor prognosis
  - Only potentially curative treatment is complete surgical resection with negative surgical margins
    - Only 15-20% of patients are surgical candidates at presentation; 5-year survival after surgery is 20%
    - Without surgery, 5-year survival is < 5%; median survival of 3.5 months
- CT
  - 97% sensitivity for detecting pancreatic cancer
  - Excellent in determining unresectability
  - Less effective in determining resectatbility as many tumors found to be “resectable” on CT are actually unresectable at surgery
  - Best modality for determining vascular invasion

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Imaging Findings

Ultrasound

- Hypoechoic mass with minimal internal color doppler flow vascularity
- Biliary dilation and pancreatic ductal dilation upstream from tumor
- Double duct sign

Endoscopic Ultrasound

- Findings similar to those seen on conventional ultrasound
- Can help guide biopsy of pancreatic mass

CT

- Poorly marginated, hypodense mass often with extensive surrounding desmoplastic reaction
- 5% are isodense to normal pancreatic parenchyma , requiring attention to secondary signs of tumor
  - Pancreatic duct and CBD obstruction with abrupt ductal cutoff at the site of obstruction
  - Pancreatic parenchymal atrophy upstream from mass
  - Abnormal contour of pancreas with loss of normal fatty lobulation and texture
  - Soft tissue infiltration involving adjacent vessels and organs
- Enhance poorly compared to adjacent normal pancreatic tissue, thus appear hypoattenuating on atrial phase scans and often become isoattenuating on delayed scans

MR

- T1: hypointense
- T1C+: Slower enhancement than the normal pancreas, therefore dynamic injection with fat saturation arterial imaging is recommended
- T2 / flair: variable intensity, depends on degree of reactive desmoplastic reaction
- MRCP: double duct sign

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