# AMSER Case of the Month October 2025

## 55-year-old male with 3-week history of early satiety, nausea, fatigue, pruritus, dark urine, and pale stools

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# Patient Presentation

- 55-year-old male with history of hypertension, obesity, and renal stones.
  - 3 weeks of early satiety, nausea, fatigue, pruritus, dark urine, and pale stools.
  - Progressive jaundice
  - Abdominal pain different from prior kidney stones

- Past Surgical History: Hernia repair, lap band (2003)
- Social History: No tobacco, occasional EtOH use

# Pertinent Labs

- ALT 225 U/L, AST 131 U/L
- Alk Phos 345 U/L
- Total bilirubin 9.3 mg/dL
- Albumin 3.1 g/dL
- INR 1.12

# What Imaging Should We Order?

# Select the applicable ACR Appropriateness Criteria

**Variant 2:** **Jaundice. Suspected mechanical obstruction based on initial imaging, clinical condition, or laboratory values.**

| Procedure | Appropriateness Category | Relative Radiation Level |
|---|---|---|
| CT abdomen with IV contrast | Usually Appropriate | ☢☢☢ |
| MRI abdomen without and with IV contrast with MRCP | Usually Appropriate | O |
| MRI abdomen without IV contrast with MRCP | Usually Appropriate | O |
| US abdomen | Usually Appropriate | O |
| ERCP | May Be Appropriate | ☢☢☢ |
| US abdomen endoscopic | May Be Appropriate | O |
| CT abdomen without and with IV contrast | Usually Not Appropriate | ☢☢☢☢ |
| CT abdomen without IV contrast | Usually Not Appropriate | ☢☢☢ |

This imaging modality was ordered by the ER physician

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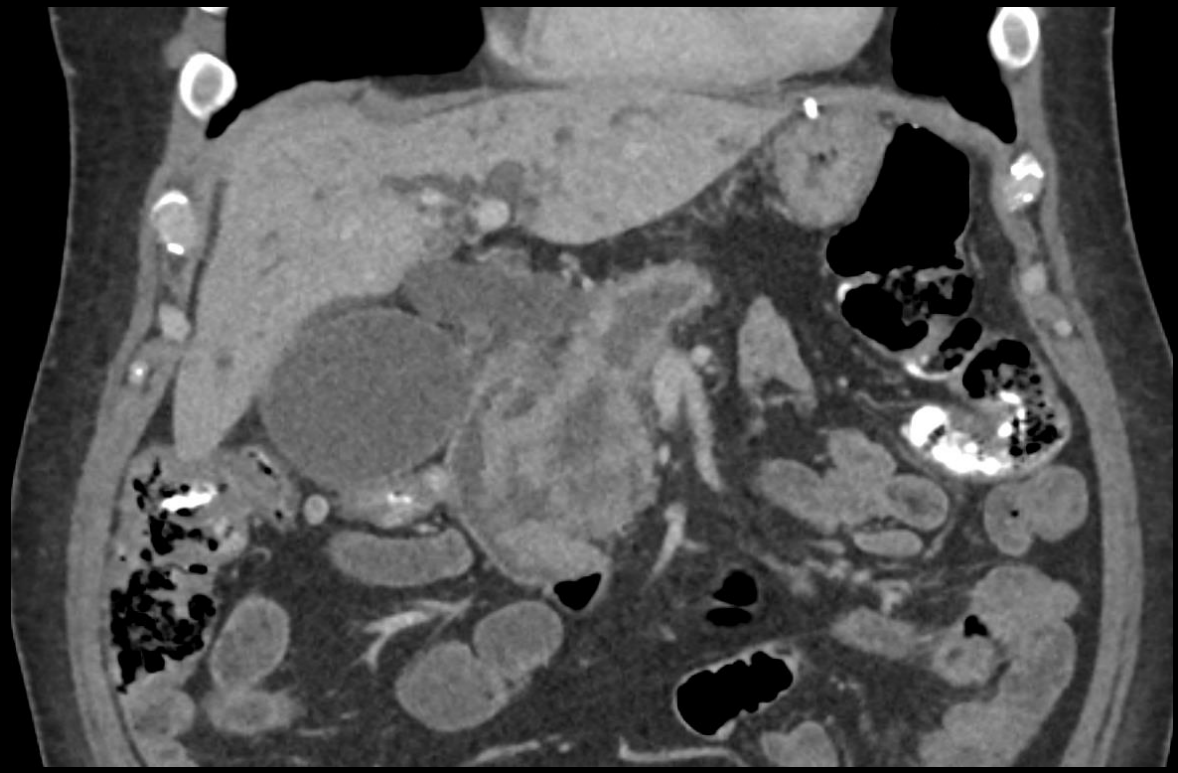
# CT findings



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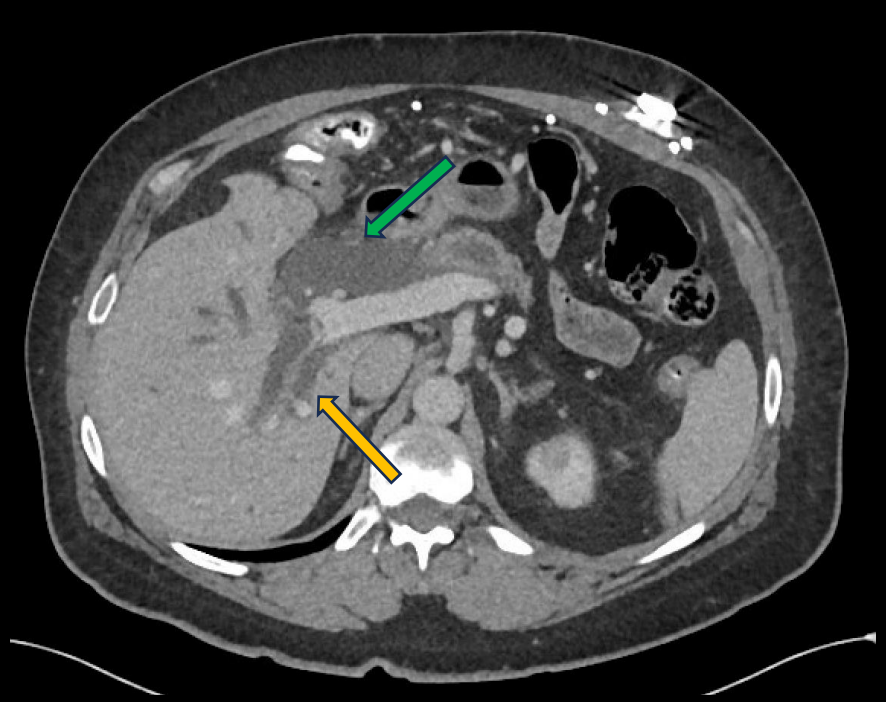

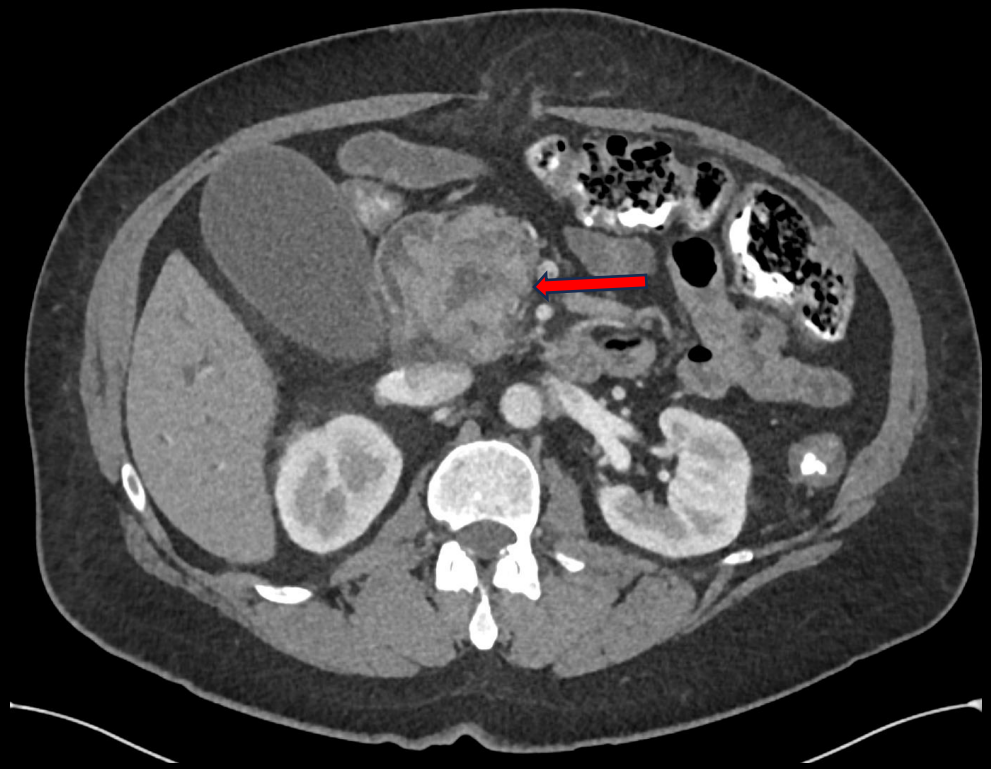

CT axial and coronal images of abdomen with IV contrast:

- 7.4 cm pancreatic head mass causing severe pancreatic duct, CBD and intrahepatic duct dilation.
- Abutment of portal vein and SMV without encasement or invasion.

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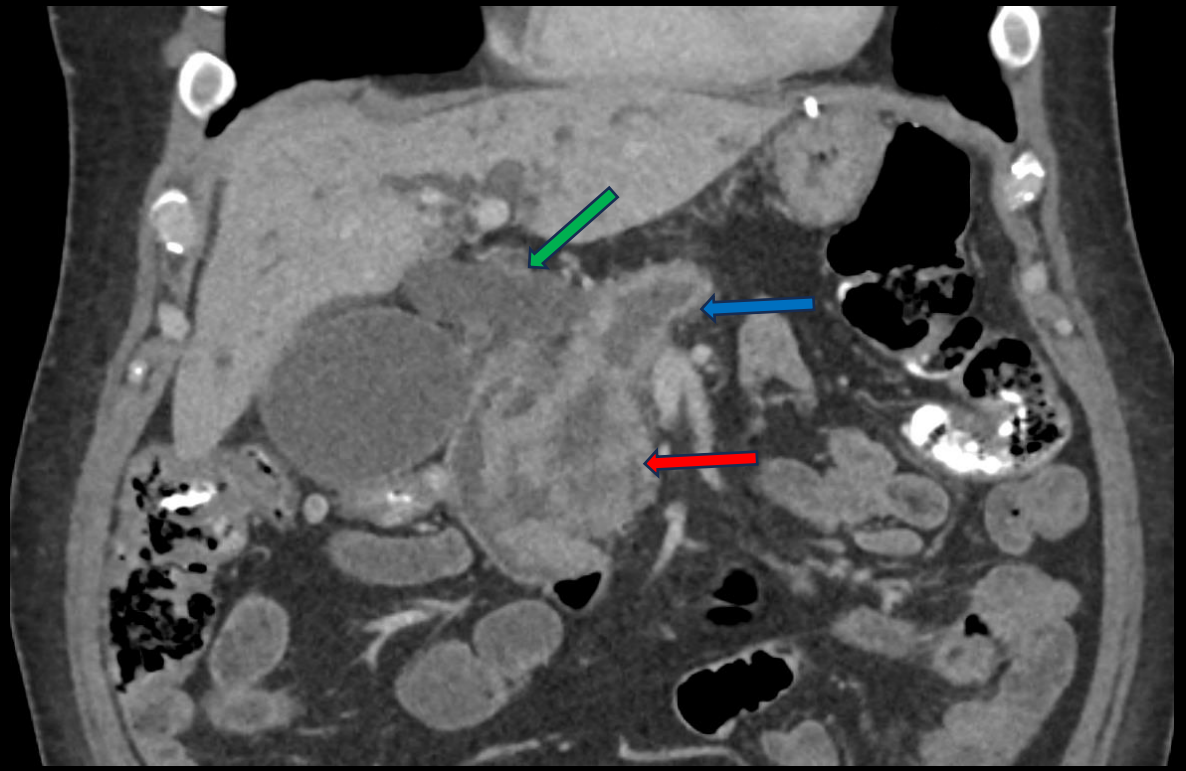

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# Hospital Course

- ERCP with initial biopsy → Nondiagnostic
- Repeat biopsy: Intraductal papillary mucinous neoplasm (no carcinoma)
- Due to high suspicion → Whipple procedure performed
- Surgical pathology: **Signet ring cell adenocarcinoma** arising in duodenal tubulovillous adenoma, invading pancreas and peripancreatic soft tissue
- Received adjuvant mFOLFOX chemotherapy

ERCP: Markedly dilated intrahepatic biliary tree with tapering of the distal CBD without opacification of the small bowel.

# Final Dx:

Obstructive jaundice secondary to duodenal signet ring cell adenocarcinoma

# Case Discussion

Differential Diagnosis of Obstructive Jaundice[1]:

- Malignant causes
  - Pancreatic head adenocarcinoma (most common)
  - Cholangiocarcinoma
  - Ampullary/periampullary carcinoma
  - Gallbladder carcinoma
  - Metastatic tumors causing extrinsic bile duct compression
- Benign causes
  - Choledocholithiasis
  - Benign biliary strictures
  - Inflammatory strictures

# Case Discussion

**Ampullary (duodenal) carcinoma** (~0.2% of GI malignancies)[2,3]

- Often presents with a “double duct sign” (dilation of the common bile and pancreatic ducts)
- Tumor can be frequently small or occult on CT imaging
- MRCP may show a subtle ampullary mass or distal CBD irregularity
- endoscopy (ERCP) or EUS with biopsy is usually required for detection

Biopsy limitations[4]

- Ampullary lesions can be challenging to diagnose with endoscopic biopsy, especially if the tumor is submucosal or infiltrative. Multiple or deep tissue samples are often needed
- Surgical resection may be needed for definitive pathology

# Case Discussion

## Pathology[4]

- Histology: Signet ring cell carcinoma (>50% cells with intracytoplasmic mucin displacing nuclei)
- Commonly arises from intestinal-type epithelium; may be associated with adenomas
- Characterized by diffusely infiltrative growth and poor differentiation

## Prognosis[5]

- Worse than conventional adenocarcinoma due to aggressive biology

## Key prognostic factors

- Nodal status
- Resection margins
- Presence of neural or vascular invasion

# Case Discussion

Management & Outcomes[5]

- Mainstay treatment: Pancreaticoduodenectomy (Whipple's surgery) is the only curative option for localized duodenal/ampullary SRCC.
- Adjuvant therapy: Often considered due to high recurrence risk
- Radiation: No established benefit for duodenal/ampullary adenocarcinomas; not routinely recommended.

# References


1. Coucke EM, Akbar H, Kahloon A, Lopez PP. Biliary Obstruction. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
2. Nikolaidis P, Hammond NA, Day K, *et al*. Imaging features of benign and malignant ampullary and periampullary lesions. Radiographics. 2014;34(3):624-641.
3. Lee JE, Choi SY, Lee MH, Lim S, Min JH, Hwang JA, Lee S, Kim JH. Differentiating between benign and malignant ampullary strictures: a prediction model using a nomogram based on CT imaging and clinical findings. Eur Radiol. 2022 Nov;32(11):7566-7577.
4. Nishiduka M, Tsunoda M, Haga J, Tsunoda R, Ueno Y. Signet-ring cell carcinoma of the ampulla of Vater: a case diagnosed via repeated biopsies. Clin J Gastroenterol. 2020;13(4):607-614.
5. Meijer LL, Alberga AJ, de Bakker JK, et al. Outcomes and Treatment Options for Duodenal Adenocarcinoma: A Systematic Review and Meta-Analysis. Ann Surg Oncol. 2018;25(9):2681-2692. doi:10.1245/s10434-018-6567-6


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