



# Obstructive Jaundice due to Ampullary Tubular Adenoma

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## Introduction

Tumors at the Ampulla of Vater are rare with ampullary cancers representing less than 1% of cancers arising from the digestive tract while having the lowest relative incidence rate of biliary tract neoplasms.<sup>1</sup> There are two main histologic subtypes of ampullary masses: pancreaticobiliary or intestinal type. Masses of intestinal origin can be further classified as adenoma or adenocarcinoma.<sup>2</sup> Risk factors for isolated ampullary adenomas are not well studied but may include prior cholecystectomy and proton pump inhibitor (PPI) use.<sup>3</sup> Multiple ampullary adenomas and adenomas that are seen in younger patients can be associated with familial adenomatous polyposis.<sup>4</sup> In one multi-center prospective study<sup>5</sup>, jaundice and abdominal pain were found to be the most common presenting symptoms in those with ampullary adenoma.

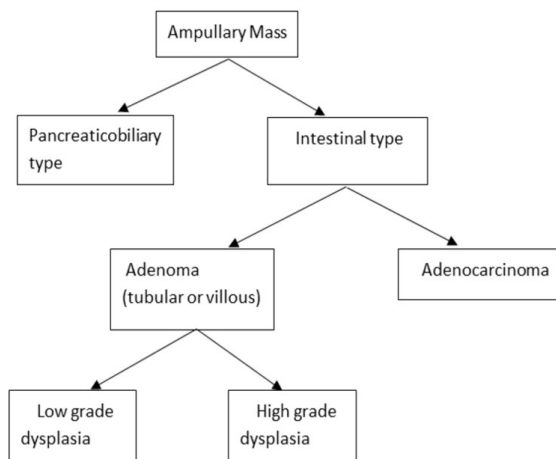


Figure 1. Histologic classification of ampullary tumors

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## Case Description

### HPI

64-year-old male presented to the emergency department for jaundice. The patient reported he was at Home Depot earlier that day when a retired nurse told him he appeared yellow, and he should be seen by a medical provider. He had been experiencing non-radiating, dull RUQ pain for several weeks in which he was seen at urgent care and had RUQ US that showed biliary dilatation with recommendation to follow up with MRI. This was scheduled in three days' time. Other complaints noted: generalized pruritis, loose and gray colored stools, and dark colored urine likened to the color of Iodine.

Pertinent negatives: fever, chills, weight loss, decreased appetite, n/v, hematochezia, melena, Tylenol ingestion.

### Medical History

- PMHx: COPD, TIA, and epilepsy.
- Past surgical history: unremarkable.
- Medications: gabapentin 600 mg PO TID, which was recently switched from Carbamazepine for concern of hepatotoxicity.
- Family history: No known family history of pancreatic or small bowel neoplasms.
- Social history: Denied tobacco, alcohol, drug use.

### Physical Exam

- Vitals
  - Temperature 97.6 F°
  - Pulse 84 bpm
  - Respirations: 16 per minute
  - Blood pressure: 154/92 mmHg
  - O2 saturation 98% on room air
- General: non-toxic appearing, alert, conversive, in no distress
- Skin: jaundiced with excoriations noted over upper and lower extremities
- EENT: scleral icterus
- Cardiac: RRR, no m/c/r/g
- Respiratory: lungs CTA bilaterally
- Abdomen: protuberant abdomen blunting CVA with negative fluid wave test, no caput medusa or other vascularities, no surgical scars, diffuse tenderness to palpation most pronounced in RUQ, +murphy's sign. No rebound, rigidity or guarding.

### Lab Results

- CMP:
  - Total bilirubin 13.3 (normal 0.2-1.2 mg/dL)
  - Direct bilirubin 10.2 (normal 0.0-0.5 mg/dL)
  - AST 98 (normal 5-34 IU/L)
  - ALT 115 (normal 0-55 IU/L)
  - Alkaline phosphatase 329 (normal 40-150 IU/L)
- Lipase: 110 (normal 4-60 U/L)
- Coagulation panel:
  - PT 17.4 (normal 9.5-12.1 sec)
  - APTT 35 (normal 24-31 sec)
- Urinalysis: 3+ bilirubin
- CBC normal
- Lactate normal
- Hepatitis panel negative
- Ammonia 46 (normal 18-72 umol/L)
- Acetaminophen levels undetectable

### Differential Diagnosis

Choledocholithiasis, biliary stricture, biliary/pancreatic/duodenal mass, medication induced hepatitis, viral hepatitis, gallstone pancreatitis, cholecystitis

### Imaging results

RUQ ultrasound: "Persistent intra and extrahepatic biliary duct dilatation. No cholelithiasis. Underlying tumor should be excluded. Recommend GI consultation. Ultimately MRCP may be warranted."

Abdominal CT with contrast showed: "Intra and extrahepatic biliary duct dilatation as well as pancreatic duct dilatation. Soft tissue density in the distal pancreatic duct. Underlying mass should be excluded."

### Hospital course

Gastroenterology was consulted in the ED. The patient was admitted to the hospital pending final CT results and plan for ERCP the following morning.

HD #1: ERCP was performed showing 2 cm obstructing mass at the ampulla and dilation of common bile duct, concerning for distal bile duct/ampullary mass versus early pancreatic mass.

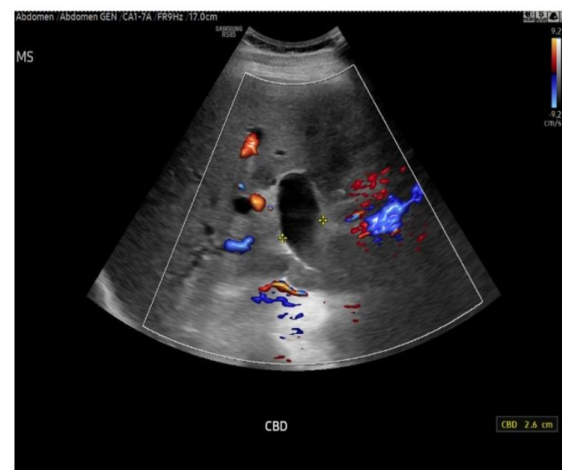


Figure 2: RUQ ultrasound showing common bile duct dilation



Figure 3: Computed tomography of ampullary mass

## Results

Biliary and pancreatic stents were placed during ERCP. Later that day, the patient's total bilirubin had improved from 13.5 to 10.5 mg/dL and he was discharged home with a three-day course of ciprofloxacin and metronidazole for post ERCP prophylaxis and referral to outpatient surgical oncology.

Final biopsy results from ERCP: Tubular adenoma with high-grade dysplasia, ulcerated

Final diagnosis: Obstructive jaundice due to ampullary tubular adenoma

## Discussion

When approaching cases of masses causing obstructive jaundice, the therapeutic approach and therefore prognosis is largely dependent on the histologic type of tumor. Tumors of intestinal origin have much more favorable outcomes compared to those of pancreaticobiliary origin, including better long term-survival and lower likelihood of lymph node metastasis or pancreatic invasion.<sup>6</sup> For masses defined as ampullary adenomas on preliminary biopsy obtained via ERCP, papillectomy via endoscopy may be an effective, safe and favorable treatment option.<sup>7-9</sup> In one retrospective observational study<sup>10</sup> comparing resection of early ampullary tumors via papillectomy versus pancreatoduodenectomy, those who underwent papillectomy had better outcomes including fewer post-procedural complications and shorter length of hospital stay. Ampullary adenomas with a final tissue biopsy result consistent with low- or high-grade dysplasia do not require further surgical intervention. Masses diagnosed as adenocarcinoma or those with intraductal extension, however, would require transduodenal ampullectomy or pancreaticoduodenectomy thereby leading to less favorable outcomes.<sup>11</sup>

## Conclusion

When evaluating ampullary masses, initial biopsy results are heavily relied upon for histological classification. These results largely guide therapeutic approach and therefore patient outcomes. In contrast to the feared outcomes of pancreatic and biliary tract cancers, a diagnosis of duodenal adenoma is associated with less invasive treatment options and better prognosis.