Rare Presentations of Metastatic Urothelial Carcinoma to GI Tract: A Case Series Highlighting Key Principles of Endoscopy in the Cancer Patient

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Introduction:

- In the US, ~80,000 new cases of bladder cancer are diagnosed yearly, 4% of which present with metastatic disease (lymph nodes, liver, peritoneum, lung).
- Most bladder cancers are pure urothelial carcinoma (Uca).
- Metastatic spread to the biliary system and small bowel are rarely described.
- We present 3 patients with known Uca who presented with gastrointestinal (GI) metastasis.

Case descriptions:

Case 1:

- A 71-year-old male with Uca presented with cholangitis. Endoscopic retrograde cholangiopancreatography (ERCP) showed a sub-hilar biliary stricture. Brush cytology was performed and biliary stent placed (Image 1). Endoscopic ultrasonography (EUS) revealed an ill-defined hypoechoic peri-bilary mass. Fine-needle aspiration (FNA) cytology confirmed malignant cells from metastatic Uca.

Case 2:

- A 63-year-old male with UCa presented with gastric outlet obstruction (GOO). Imaging revealed a possible pancreatic head mass. EGD was performed; biopsies of the duodenum were non-diagnostic. EUS-FNA of the pancreatic head mass revealed benign pancreatic cells. Repeat EGD showed an obstructing externally infiltrating duodenal mass/stricture (Image 2). Biopsies confirmed poorly differentiated carcinoma consistent with metastatic Uca. A duodenal stent was placed for decompression with symptomatic relief.

Case 3:

- A 68-year-old male with Uca with liver and omental metastasis presented with abdominal pain and biliary obstruction. ERCP showed a biliary stricture (Image 3); biliary stent was placed. Brush cytology revealed malignant cells of urothelial origin, representative of Uca with metastasis to the CBD.

Image 1:

Cholangiogram from ERCP for Case 1 demonstrating a high-grade sub-hilar biliary stricture

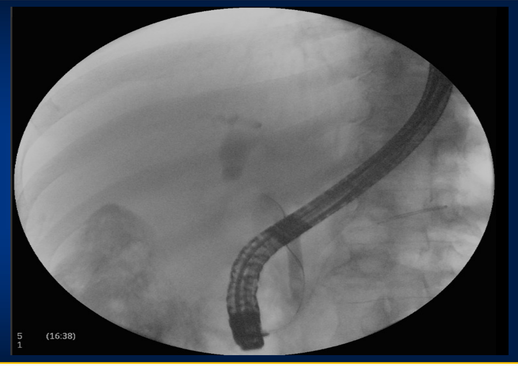


Image 2:

Infiltrating, obstructing duodenal mass with stricture secondary to urothelial carcinoma metastases in Case 2

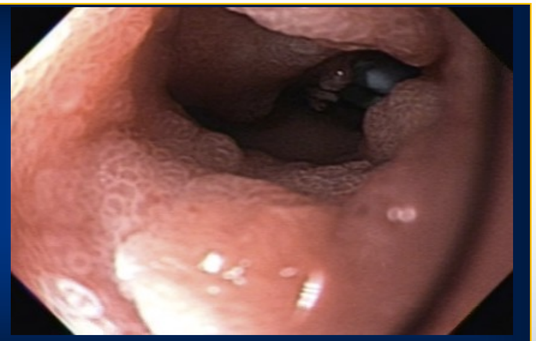
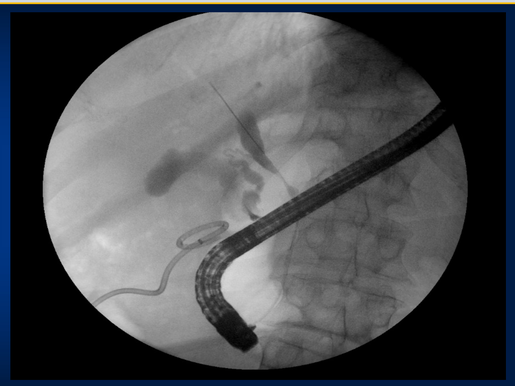


Image 3:

Cholangiogram from ERCP for Case 3 demonstrating a long stricture of the distal CBD and the mid CBD



Discussion:

- Metastatic Uca to the biliary tree and duodenum has been rarely reported.
- GOO from Uca is also unusual but may occur due to retroperitoneal, hepatic flexure or duodenal masses.
- Endoscopic evaluation can be challenging due to altered anatomy.
- This case series emphasizes several important points:
  1. In the appropriate clinical context, non-GI malignancies should be in the differential diagnosis when managing biliary obstruction and GOO.
  2. Role of repeat endoluminal biopsy if initial effort is non-diagnostic.
  3. Role of EUS-FNA for tissue sampling.
  4. Role of ERCP and biliary stenting for palliation of biliary obstruction.
  5. Importance of an accurate pathologic diagnosis in a patient with suspected metastatic malignancy, given management and prognostic implications.

References:

- Siegel RL, Miller KD, Fuchs HE, Jemal A. Cancer statistics, 2022. CA Cancer J Clin. 2022 Jan;72(1):7-33. doi: 10.3322/caac.21708. Epub 2022 Jan 12. PMID: 35020204.
- Shingare et al. Metastatic pattern of bladder cancer: correlation with the characteristics of the primary tumor. AJR. AM J Roentgenol. 2011 Jan,196(1):117-22.
- Hong et al. Bile duct wall metastasis from micropapillary variant transition cell carcinoma of the urinary bladder mimcking primary hilar cholangiocarcinoma. Gastrointest Endosc. 2002. Nov;56(5):756-60.
- *Key statistics for Bladder Cancer*. American Cancer Society. https://www.cancer.org/cancer/bladder-cancer/about/key-statistics.html