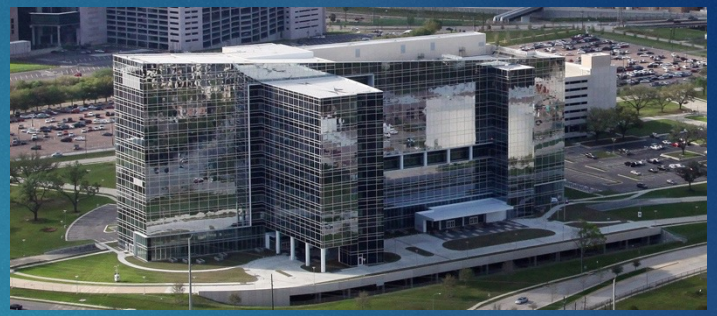
This activity is jointly provided by the University of Cincinnati and the Michigan Gastrointestinal Society (MIGI).
Supported by educational grants from Janssen Biotech, Inc., Mallinckrodt Pharmaceuticals,
Phathom Pharmaceuticals, Inc., and Salix Pharmaceuticals.



Difficult ERCP Cases

MOHAMED OTHMAN, MD
CHIEF, GASTROENTEROLOGY SECTION OF BAYLOR ST LUKE'S MEDICAL CENTER
DIRECTOR OF ADVANCED ENDOSCOPY
ASSOCIATE PROFESSOR OF MEDICINE
BAYLOR COLLEGE OF MEDICINE

Disclosures

Consultant:

- BSC, Olympus, AbbVie, Nestle, Apollo, Creo Medical, Ambu

Research Support:

- ConMed, Lucid Diagnostics

MICHIGAN GI SOCIETY

Case 1:

- 48 years old patient presented to an outside hospital for cholangitis from an impacted CBD stone
- Endoscopist could not remove the stone during emergent ERCP so he decided to place plastic stent and scheduled repeat ERCP in two weeks.
- The patient presented one week later with another episode of cholangitis
- Repeat ERCP showed migrated CBD stent within the CBD

MICHIGAN GI SOCIETY

Case 1: Migrated Metal Stent

- The endoscopist could not remove the migrated CBD stent
- Giving that this was an emergent ERCP for cholangitis, The endoscopist placed a metal stent
- Repeat ERCP in 3 weeks for stone removal showed migrated metal stent within the CBD
- The endoscopist referred the patient to me for ERCP, stents removal and stone removal

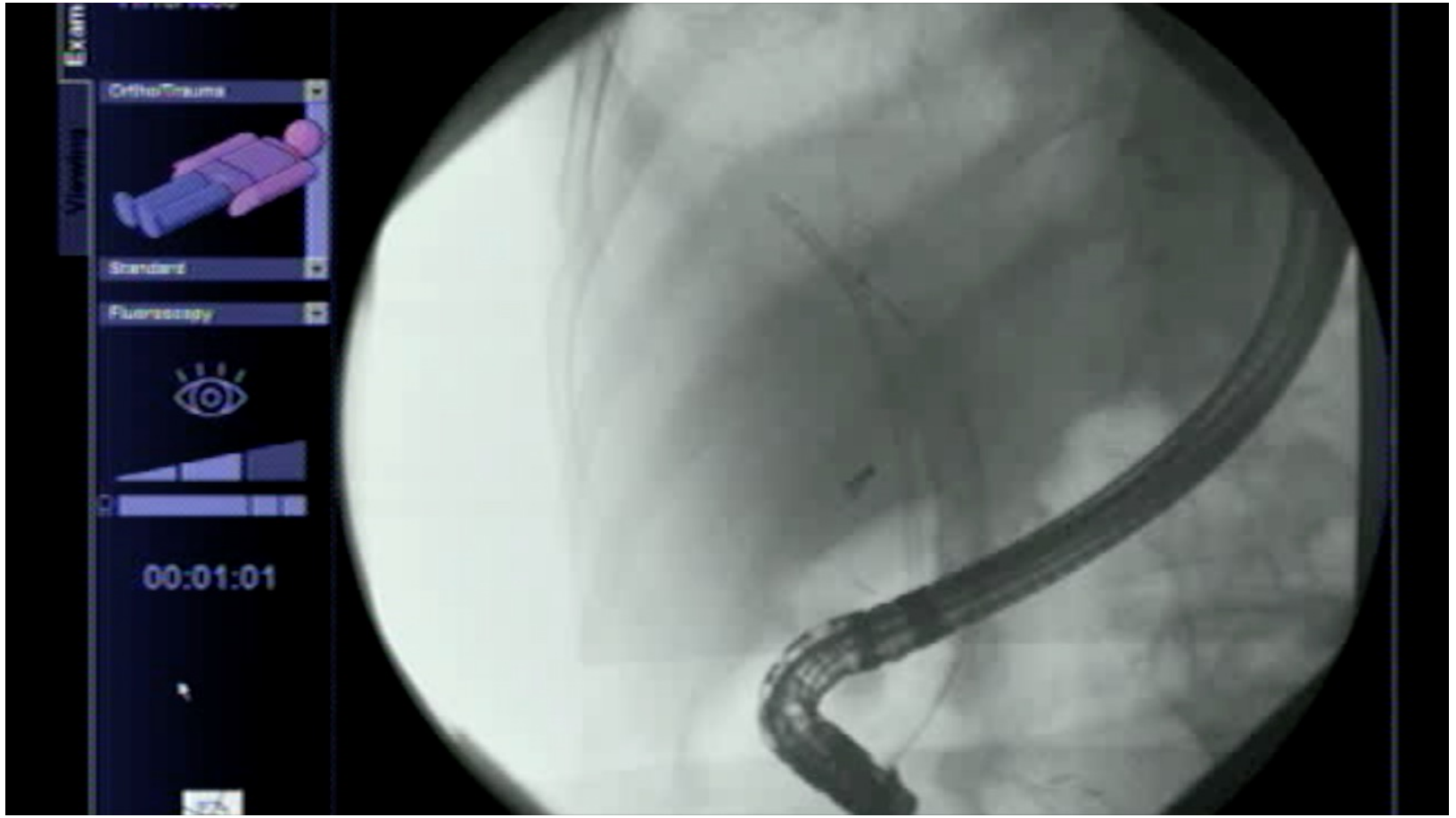
MICHIGAN GI SOCIETY

Case 1: Question:

- How would you manage the migrated stents in this scenario?
  a) Use an extraction Balloon
  b) Use biopsy forceps under fluoroscopy guidance
  c) Use a basket
  d) Advance snare over a wire into the bile duct for a stent extraction

MICHIGAN GI SOCIETY

Case 1: Migrated Metal Stent



MICHIGAN GI SOCIETY

Case 1: Migrated Metal Stent

- Teaching points:
  - Cholangioscopy with biopsy forceps can successfully detach migrated metal stent from the upper CBD to the distal CBD to facilitate complete removal

MICHIGAN GI SOCIETY

Case 2:

- 78 y/o patient s/p whipple surgery for IPMN involving pancreas and bile ducts
- The patient presented two years later with elevated alkaline phosphatase and dilated intrahepatic ducts
- Patient was referred for ERCP

MICHIGAN GI SOCIETY

Case 2:

- What is the most likely explanation of the patient's presentation:
  a) Anastomotic stricture at hepatico-jejunostomy
  b) Intrahepatic duct stone formation
  c) Disease recurrence in the intrahepatic ducts
  d) Afferent limb syndrome

MICHIGAN GI SOCIETY

Case 2:

MICHIGAN GI SOCIETY

Case 2: IPMN Recurrence in the CBD

- Teaching point
  - Cholangioscopic examination of the CBD allows accurate localization of the extent of the disease to tailor further treatment.

MICHIGAN GI SOCIETY

Case 3:

- 37 years old patient with no prior medical history presented to the ED with sever abdominal pain
- CT scan showed dilated pancreatic duct with a possible 1 cm mass obstructing the duct at the level of the body of the pancreas

MICHIGAN GI SOCIETY

Case 3:

- What is the most likley cause of the CT finding and the patient's abdominal pain:
  a) IPMN of the main Pancreatic duct
  b) Pancreatic adenocarcinoma
  c) Pancreatic duct stone
  d) Annular pancreas

MICHIGAN GI SOCIETY

Case 3: Pancreatic Duct Stone

MICHIGAN GI SOCIETY

Case 3: Pancreatic Duct Stone

- Teaching point:
  - ERCP with cholangioscopy can asset in the evaluation of pancreatic duct lesions
  - Pancreatic duct stones can be successfully managed with ERCP with spyglass and laser lithotripsy

MICHIGAN GI SOCIETY

Case 4:

- 62 years old patient presented with jaundice and CBD stricture
- ERCP showed mid CBD stricture, brushing was obtained and it did not show atypical cells.
- Plastic stent was placed and the patient was referred to me for ERCP with spyglass

MICHIGAN GI SOCIETY

Case 4:

- In regards to management of indeterminate CBD stricture, which is the following have the highest sensitivity and specificity in differentiating benign from malignant stricture?
  a) Cholangioscopy images
  b) Duct brushing
  c) Cholangioscopy with biopsy
  d) EUS FNA of the lesion

MICHIGAN GI SOCIETY

Case 4: Malignant CBD Stricture

MICHIGAN GI SOCIETY

Case 4: Malignant CBD Stricture

- Teaching points
- Cholangioscopy with biopsy is important in evaluating indeterminate biliary stricture

MICHIGAN GI SOCIETY

Case 4: Malignant CBD Stricture

- Aspiration Fluid Cytology as an Adjunct for Cholangioscopy with Targeted Biopsy

Atypical cells as benign	Cholangioscopic biopsy with Aspiration fluid cytology (n= 35)	Brush cytology (n=9)	Cholangioscopic biopsy (n=35)
Sensitivity	**80%**	66.6%	**66.6%**
Specificity	100%	100%	100%
PPV	100%	100%	100%
NPV	86.95%	85.7%	80%

MICHIGAN GI SOCIETY

Munot K, Raijman I, Othman MO. *Cytopath*. 2021.

Case 5: Malignant CBD Stricture

- 85 years old patient with cholangiocarcinoma of the CBD with frequent visits for stent exchanges
- The patient is refusing any chemo-radiotherapy treatment and he is high risk for surgery

MICHIGAN GI SOCIETY

Case 5: Malignant CBD Stricture

- What else we can offer the patient with endoscopy which is proven to decrease the frequency of stent exchange?
- Percutaneous biliary (PTC) drain
- Antibiotics covered stents
- CBD ablation prior to stent placement
- Partially covered metal stent

MICHIGAN GI SOCIETY

Case 5: Malignant CBD Stricture

MICHIGAN GI SOCIETY

Case 5: Malignant CBD Stricture

- Teaching point
  - ERCP with cholangioscopy can assess the extent of CBD involvement with cholangiocarcinoma directing RFA therapy
  - ERCP with cholangioscopy can assess the effectiveness of CBD ablation and ensure the complete ablation of the entire involved segment.

MICHIGAN GI SOCIETY