ASGE Guideline on the Role of Endoscopy in the Management of Malignant Hilar Obstruction

By Cicily Vachaparambil, MD

@EmoryGastroHep

Background

- **Causes:** primary tumors of the biliary tract involving the hilum (Klatskin tumors), local extension of adjacent cancers (gallbladder cancer), and metastatic involvement of lymph nodes with extrinsic hilar compression
- **Presentation:** signs and symptoms of biliary obstruction
- **High Morbidity:**
  - Malignant hilar obstructions have a 5 year survival rate of <10%
  - 73% are unresectable after staging or resection for cure is not achievable
- **Surgical options:** partial hepatectomy or liver transplant

✳ Most patients will need endoscopic drainage for symptom relief (pain, jaundice, etc)

Stent Selection

Unresectable Malignant Hilar Obstruction

Short life expectancy (<3 mos) or prefers avoiding repeat interventions	Optimal drainage strategy not established	Other
		
Suggest metal stents (SEMS)	Suggest plastic stents (PS)	Either SEMS v PS (based on local expertise)

Stent Comparison

- **Advantages of SEMS (self expanding metal stent):** ↑patency rates, ↓reintervention rates, ↑rates of drainage success, and 1 RCT with improved survival
- **Advantages of PS (plastic stent):** Exchanging occluded PSs are easier than restenting an occluded SEMS
- **No △:** insertion success rates, 30-day mortality or cholangitis, AEs, or pancreatitis
- If short life expectancy (<3 mos), SEMSs > PSs given lower rates of reintervention and possibly improved survival
- If unknown which side is best to drain or can't confirm patient is resectable, place PS while final decisions are made, can place SEMS later if needed
- **Considerations:**
  - **Cost:** SEMS>PS but overall, SEMS more cost efficient given ↑stent patency rates and ↓interventions.
  - **Patient Values:** PS>SEMS favored by panel patient advocate given challenge of reintervention on next ERCP, however no formal studies on this
  - **Equity:** No issue because SEMSs are also available in resource-poor settings.

Drainage Strategy

Unresectable Malignant Hilar Obstruction

Suggest bilateral stents

Qumseya BJ, Jamil LH, Elmunzer BJ, Riaz A, Ceppa EP, Thosani NC, Buxbaum JL, Storm AC, Sawhney MS, Pawa S, Naveed M, Lee JK, Law JK, Kwon RS, Jue TL, Fujii-Lau LL, Fishman DS, Calderwood AH, Amateau SK, Al-Haddad M, Wani S. ASGE guideline on the role of endoscopy in the management of malignant hilar obstruction. Gastrointestinal Endoscopy. 2021; 94(2): 222-234. doi.org/10.1016/j.gie.2020.12.035

Drainage Strategy

- In patients with unresectable MHO undergoing palliative endoscopic stent placement, the bilateral stent placement > single unilateral stent
- **Advantages:** Bilateral stent placement ↑survival, ↑duration of patency, ↑successful drainage
- **Disadvantages:** ↓technical success rate
- **No △:** adverse outcomes
- One study showed no △ between stent-by-stent (SBS) v stent-in-stent (SIS) success rates but ↑AEs in SBS>SIS and ↑obstruction rates. Another study showed no difference Therefore, no recommendation on SBS v SIS
- **Considerations:**
  - **Cost:** negligible costs or savings for bilateral v unilateral stents
  - **Patient Values:** bilateral>unilateral favored by patient advocate on the panel because of value placed on stent patency, less frequent interventions, and high emphasis on drainage success which would facilitate initiating chemotherapy
  - **Equity:** no impact on equity, feasibility, or acceptability in bilateral v unilateral
- **Guiding principles:** avoid draining atrophic portions of the liver, minimize injection into nondilated ducts, and attempt drainage of all injected biliary segments

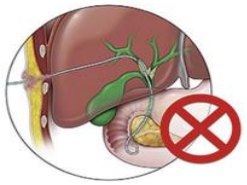
Drainage Modality

- In patients with MHO undergoing pre-op drainage, EBD is preferred
- In patients with unresectable MHO undergoing palliative drainage, either EBD v PTBD based on patient preference, disease characteristics, local expertise
- **Advantages of EBD:** avoid external drainage, ↓peritoneal mets, ↓mortality, ↓survival
- **Disadvantages of EBD:** ↓technical success rate, ↑rates of pancreatitis, cholangitis
- **Considerations:**
  - **Cost:** direct costs are comparable between EBD and PTBD
  - **Patient Values:** EBD>PTBD. Even in failed ERCP, >85% of 313 patients preferred EUS-guided drainage compared with PTBD. Patient advocate notes external drain is a constant reminder of disease and can be difficult to manage
  - **Equity:** no difference in equity, feasibility, or acceptability in EBD v PTBD
- **Guiding Principles:** in patients undergoing liver transplant for MHO, avoid EUS with FNA of the lesion, avoid uncovered SEMSs (which may be difficult to remove surgically), and avoid PTBD because of concern for seeding

Drainage Modality

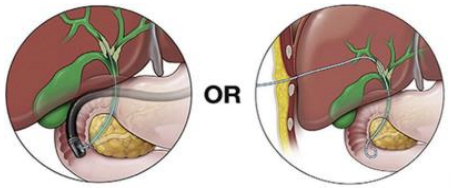
Unresectable Malignant Hilar Obstruction

Potentially operative



Suggest against percutaneous transhepatic biliary drainage (PTBD)

Unresectable/Palliative



Suggest endoscopic biliary drainage (EBD) or PTBD

Management Pearls

Review cross-section imaging, with emphasis on volumetric liver assessment
Discuss case in a multidisciplinary fashion, especially in patients with potentially resectable disease
Limit injection of contrast
Avoid injection and attempted drainage of dilated bile ducts with atrophic liver segments
Attempt drainage of all injected biliary segments
Aim to drain >50% of the viable (nonatrophic) liver volume, which includes the future liver remnant in resectable patients
Consider periprocedure antibiotics, especially if drainage of contrast is believed to be incomplete
May use a stent-in-stent or stent-by-stent approach
Radiofrequency ablation and photodynamic therapy to ablate lesions through self-expanding metal stents can be considered in tertiary centers and research settings

Qumseya BJ, Jamil LH, Elmunzer BJ, Riaz A, Ceppa EP, Thosani NC, Buxbaum JL, Storm AC, Sawhney MS, Pawa S, Naveed M, Lee JK, Law JK, Kwon RS, Jue TL, Fujii-Lau LL, Fishman DS, Calderwood AH, Amateau SK, Al-Haddad M, Wani S. ASGE guideline on the role of endoscopy in the management of malignant hilar obstruction. Gastrointestinal Endoscopy. 2021; 94(2): 222-234. doi.org/10.1016/j.gie.2020.12.035