Malignant Biliary Stricture: Endoscopic Management

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Malignant Biliary Stricture

Biliary Neoplasia (CholangioCarcinoma)

Biliary Compression from extrinsic Neoplasia

- Pancreatic adenoK
- Lymphoma
- Lymphnodes compression
- MTX compression
Malignant Biliary Stricture

Biliary Neoplasia (CholangioCarcinoma)

Biliary Compression from extrinsic Neoplasia

- Pancreatic adenocarcinoma
- Lymphoma
- Lymphnodes compression
- MTX compression
### Cholangiocarcinoma (CCA): Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Anatomical description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrahepatic CCA</td>
<td>Proximal to the 2nd branches of the left and right hepatic ducts.</td>
</tr>
<tr>
<td>Perihilar CCA</td>
<td>Between the 2nd branches of the right and left hepatic ducts and the common hepatic duct proximal to the cystic duct origin</td>
</tr>
<tr>
<td>Distal CCA</td>
<td>Tumors of the common bile duct (CBD); not including the ampulla Vater</td>
</tr>
</tbody>
</table>

![Image of liver with classification of CCA](image)

**ENDOSCOPIC MANAGEMENT ALLOWED**

Blechacz B. *Gut and Liver* 2017
Malignant Biliary Stricture (MBS) & Biliary drainage

For jaundice drainage
the location of the stricture
matters!!
Role of endoscopy in MBS drainage
Role of endoscopy in MBS drainage

Distal MBS

Hilar MBS
Role of endoscopy in MBS drainage

6.1.1. Tumor assessment and patient referral

**RECOMMENDATION**

No therapy if no diagnosis

*Weak recommendation, low quality evidence.*

6.1.2. Preoperative drainage of malignant hilar strictures

**RECOMMENDATION**

ESGE suggests against routine preoperative biliary drainage in patients with malignant hilar obstruction. The indication and route for preoperative biliary drainage should be decided by the multidisciplinary hepatobiliary team.

*Weak recommendation, low quality evidence.*

**Multidisciplinary team**

**RECOMMENDATION**

ESGE recommends placing a small-bore stent in malignant hilar strictures.

*Strong recommendation, moderate quality evidence.*

**High volume centers**
Hilar Cholangiocarcinoma

Bismuth Classification

RECOMMENDATION
ESGE suggests palliative drainage of malignant hilar strictures by means of ERCP for Bismuth types I and II, and PTBD or a combination of PTBD and ERCP for Bismuth types III and IV, to be modulated according to local expertise.

«.... technically similar to that of extrahepatic biliary strictures....»

Bismuth H. *Ann Surg* 1992
Blechacz B. *Gut and Liver* 2017
Dumonceau JM, et al. *Endoscopy* 2017
Palliative biliary decompression - ENDOSCOPY

UNILATERAL VS. BILATERAL

No consensus...!
Palliative biliary decompression - ENDOSCOPY

TARGETED STENT PLACEMENT

- Stenting of dominant liver lobe
- Stenting of ducts draining an atrophic liver lobe

Kozarek RA. GIE 2010; 72, No. 4:

Asia-pacific recommendation for HCCA jgh 2013
Zhang R et al Scand J Gastroenterol 2013
Palliative biliary decompression - ENDOSCOPY

Any contrasted obstructed segment MUST be drained

UNILATERAL VS. BILATERAL

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Early cholangitis</th>
<th>30-d mortality</th>
<th>Survival (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>32</td>
<td>6%</td>
<td>0%</td>
<td>145</td>
</tr>
<tr>
<td>B</td>
<td>29</td>
<td>0%</td>
<td>3%</td>
<td>225</td>
</tr>
<tr>
<td>C</td>
<td>37</td>
<td>32%</td>
<td>30%</td>
<td>45</td>
</tr>
</tbody>
</table>

133 patients (excluded Bismuth type I): bilateral 66 vs unilateral 67

**Conclusions:** Unilateral and bilateral drainage strategies by using SEMSs had similar technical success rates, but bilateral drainage resulted in fewer reinterventions and more durable stent patency in patients with inoperable high-grade MHBs. (Clinical trial registration number: NCT02166970.) (Gastrointest Endosc 2017;86:817-27.)
Hilar CCA: what type of stent?

718 patients with hilar malignant obstruction: SEMS 378 vs. PS 340

- SEMSs had a lower 30-day occlusion rate than PSs
- SEMSs had a lower long-term occlusion rate
- Incidence of cholangitis was statistically lower with SEMSs
Palliative biliary decompression - ENDOSCOPY

PLASTIC vs. SEMS

More cost-effective

Patients > 4-6 months survival

Undefinitive decision about palliation
Endoscopic biliary stenting: indications, choice of stents, and results: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline – Updated October 2017

RECOMMENDATION
ESGE recommends uncovered SEMSs for palliative drainage of malignant hilar obstruction. Strong recommendation, moderate quality evidence.
Hilar type I CCA

M, 85 yrs  CCA Type I
Hilar type II CCA

F, 70 yrs CCA Type II
Hilar CCA biliary drainage: what if ERCP fails?

Endoscopic biliary stenting: indications, choice of stents, and results: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline – Updated October 2017

ESGE recommends restricting the use of EUS-guided biliary drainage to cases where biliary drainage using standard ERCP techniques has failed.
Strong recommendation, low quality evidence.

Dumonceau JM, et al. Endoscopy 2017
Hilar CCA types III and IV: Biliary drainage

9 studies, 546 pts with Bismuth types III and IV

Pooled OR for successful biliary drainage in PTBD versus EBD: 2.53

OR for overall adverse effects in PTBD versus EBD groups: 0.81

OR for 30-day mortality rate in PTBD group versus EBD group: 0.84
Role of endoscopy in MBS drainage
Distal MBS: Biliary drainage

Endoscopic biliary stenting: indications, choice of stents, and results: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline – Updated October 2017

RECOMMENDATION
ESGE recommends that decompression of malignant extrahepatic biliary obstruction be performed via endoscopic retrograde cholangiopancreatography (ERCP) rather than by surgery or percutaneously.

Strong recommendation, moderate quality evidence.
Distal MBS: biliary drainage

Prognostic impact of type of preoperative biliary drainage in patients with distal cholangiocarcinoma

- EBD group (n=63)
- PTBD group (n=25)

Patients who underwent PTBD had poorer overall survival

Incidence of liver metastasis:
PTBD 32.0% vs. EBD 13.3% P = 0.034

Distal MBS Biliary drainage: what type of stent?

Endoscopic stenting for inoperable malignant biliary obstruction: A systematic review and meta-analysis

13 articles, 1133 patients

SEMS vs plastic stent

- lower overall stent dysfunction compared to PS
- fewer reinterventions
- with no difference in complications
- Higher mean survival rate
- Higher patency

Endoscopic biliary stenting: indications, choice of stents, and results: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline – Updated October 2017

**RECOMMENDATION**

ESGE recommends SEMS insertion for palliative drainage of malignant extrahepatic biliary obstruction. Strong recommendation, high quality evidence.

Dumonceau JM, et al. *Endoscopy* 2017
## Distal MBS Biliary drainage: what type of stent?

### Biliary Self-Expandable Metal Stents Do Not Adversely Affect Pancreaticoduodenectomy

<table>
<thead>
<tr>
<th>Variable</th>
<th>SEMS n = 71</th>
<th>PES n = 149</th>
<th>NS n = 289</th>
<th>p-value</th>
<th>SEMS vs PES p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (% or Median (range))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operative duration</td>
<td>279 (142 - 506)</td>
<td>253 (101 - 597)</td>
<td>241 (78 - 594)</td>
<td>&lt;0.001</td>
<td>0.030</td>
</tr>
<tr>
<td>Estimated blood loss (ml)</td>
<td>500 (100 - 2500)</td>
<td>500 (50 - 5000)</td>
<td>400 (0 - 3500)</td>
<td>0.028</td>
<td>0.806</td>
</tr>
<tr>
<td>Positive Margin</td>
<td>6 (8.5%)</td>
<td>24 (16.3%)</td>
<td>29 (10.2%)</td>
<td>0.129</td>
<td>0.143</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>8 (5 - 63)</td>
<td>8 (4 - 63)</td>
<td>8 (4 - 88)</td>
<td>0.305</td>
<td>0.740</td>
</tr>
<tr>
<td>Any complication</td>
<td>45 (63.4%)</td>
<td>82 (55.0%)</td>
<td>148 (51.2%)</td>
<td>0.180</td>
<td>0.307</td>
</tr>
<tr>
<td>Grade 3 or higher complication</td>
<td>12 (16.9%)</td>
<td>30 (20.1%)</td>
<td>73 (25.3%)</td>
<td>0.234</td>
<td>0.714</td>
</tr>
<tr>
<td>Pancreatic anastomotic leak</td>
<td>5 (6.9%)</td>
<td>19 (12.6%)</td>
<td>41 (14.1%)</td>
<td>0.266</td>
<td>0.182</td>
</tr>
<tr>
<td>Biliary anastomotic leak</td>
<td>0 (0.0%)</td>
<td>1 (0.7%)</td>
<td>6 (2.1%)</td>
<td>0.478</td>
<td>1.000</td>
</tr>
<tr>
<td>Wound infection</td>
<td>22 (31.0%)</td>
<td>19 (12.8%)</td>
<td>18 (6.2%)</td>
<td>&lt;0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>30 day mortality</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>4 (1.4%)</td>
<td>0.460</td>
<td>NE</td>
</tr>
</tbody>
</table>

SEMSs do not compromise R0 resection!
Distal MBS Biliary drainage: what type of stent?

Higher quality of life after metal stent placement compared with plastic stent placement for malignant extrahepatic bile duct obstruction
a randomized controlled trial

QUALITY OF LIFE

Several meta-analyses assessed **UCSEMSs** versus **FCSEMSs**:  
• no differences in stent patency or patient survival  
• conflicting results in terms rates of complications

**Covered vs. uncovered self-expandable metal stents for malignant distal biliary strictures: a systematic review and meta-analysis**

**No Benefit of Covered vs Uncovered Self-Expandable Metal Stents in Patients With Malignant Distal Biliary Obstruction: A Meta-analysis**

**Authors**
Alberto Tringali¹, Cesare Hassan

No consensus...!

Tringali A et al, *Endoscopy* 2018
Almadi MA et al, *Clin Gastroenterol Hepatol* 2013
CONCLUSIONS

Hilar MBS

- Treat only Type I-II
- Stenting of dominant liver lobe
- Bilateral better
- SEMSs better than plastic stents

Distal MBS

- ERCP better than PTC
- SEMS better than plastic stents
- Still debate on UnSEMSs vs FCSEMSs
THANK YOU FOR ATTENTION