Management of Common Bile Duct Stones

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Symptoms

- Jaundice, RUQ pain
- Fever, leukocytosis
- Complications: cholangitis, pancreatitis
Diagnosis

• CBD stone on ultrasound
• Enlarged CBD on ultrasound (>6-7mm)
• Elevated Tbil/AST/ALT/ALP
• Gallstone pancreatitis

Options: 1. Pre-op ERCP
2. Intraoperative cholangiogram
ERCP

- 80-90% ductal clearance rate
- 40% normal exam
- 5-15% morbidity

- Diagnostic and therapeutic
- MRCP: nontherapeutic, saves ERCP if negative
Intraoperative cholangiogram (IOC)

• Indications:
  – Suspect CBD stone
  – Unclear anatomy

• Interpretation:
  – Need to identify R and L hepatic ducts
  – Need to see contrast emptying into duodenum
    • Morphine – contract sphincter
    • Glucagon – relax sphincter
  – Look for stones
Common Scenario
### Laparoscopic CBD Exploration

<table>
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<tr>
<th>Transcystic</th>
<th>Direct Choledochotomy</th>
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<tr>
<td>• CBD&lt;6mm, dilated cystic duct, small stone, stones in CBD (vs CHD)</td>
<td>1. Clear anterior surface</td>
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<tr>
<td>1. Flush saline + glucagon</td>
<td>2. 3 + 9 o’clock stay sutures</td>
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<td>2. Fluoroscopic basket or balloon</td>
<td>3. 10-20mm longitudinal ductomy with scissors</td>
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<td>3. Choledochoscope</td>
<td>4. Flush w/ 14Fr catheter</td>
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<td>4. Endoloop + clip or suture closure</td>
<td>5. Same as #2 and 3 from transcystic</td>
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<td>6. T tube closure 10 or 14Fr</td>
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<td>– Interrupted absorbable sutures</td>
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To conclude either approach:

• Completion cholangiogram
  • No leak of closure
  • Emptying into duodenum
  • No filling defects
ERC or LCBDE?

- Rogers et al (Arch Surg 2010)
- RCT – 122 patients randomized to either ERC or LCBDE for CBD stones
- CBD clearance (primary endpoint)
  - ERC 98%, LCBDE 88% (p=0.28)
- Time from first procedure to discharge favored LCBDE (55 hours versus 98 hours)
- Professional fees lower for LCBDE ($4,820 versus $6,139)