The Overall Poor Specificity of MRCP in the Preoperative Evaluation of the Jaundiced Patient will Increase the Incidence of Non-Therapeutic ERCP

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The overall poor specificity of MRCP in the preoperative evaluation of the jaundiced patient will increase the incidence of nontherapeutic ERCP

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Disclosure Statement of Financial Interest

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Nothing To Disclose
Background: Gallbladder Disease

- Cholecystectomy - approx. 750,000 annually in U.S.
- 10-20% of those with symptomatic cholelithiasis have choledocholithiasis
- Work up: Labs, US, MRCP, Cholecystectomy + IOC

**Research question**
Does MRCP yield an obvious benefit over IOC, the previous gold standard, in diagnosis of choledocholithiasis?
Choledocholithiasis: Diagnostic Imaging Modalities

Intraoperative Cholangiogram

Mourot J., https://slideplayer.com/slide/10261403/²

Magnetic Resonance Cholangiopancreatography

Methods

• Retrospective single institution study at Mission Hospital, 15-month period from 2017 to 2018

• Criteria: Adult inpatients who underwent laparoscopic cholecystectomy

• 460 patients total

• 146 underwent either MRCP or IOC
  • 76 MRCP
  • 70 IOC
## Results

### Preoperative MRCP (N=76)

<table>
<thead>
<tr>
<th>Presence of Choledocholithiasis</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31</td>
<td>45</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ERCP Presence of Choledocholithiasis</th>
<th>Positive</th>
<th>Negative</th>
<th>Positive</th>
<th>ERCP Not Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>11</td>
<td>2</td>
<td>56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MRCP</th>
<th>IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>97%</td>
</tr>
<tr>
<td>Specificity</td>
<td>80%</td>
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</table>

### Intraoperative Cholangiogram (N=70)

<table>
<thead>
<tr>
<th>Presence of Choledocholithiasis</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
<td>58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ERCP Presence of Choledocholithiasis</th>
<th>Positive</th>
<th>Negative</th>
<th>Positive</th>
<th>Negative/Not Done</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MRCP</th>
<th>IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Predictive Value</td>
<td>65%</td>
</tr>
<tr>
<td>Negative Predictive Value</td>
<td>96%</td>
</tr>
</tbody>
</table>
Conclusions

• MRCP and IOC have unique advantages and disadvantages
• MRCP has greater sensitivity, but appears to result in more unnecessary ERCPs at our institution
• The use of MRCP as a screening tool for CBDS resulted in increased ERCP procedures, with potential for associated morbidity and greatly increased costs to the patient
• There are other factors that account for decision-making for diagnostic modality of choice: surgeon comfort, lab values, patient comorbidities, patient goals, available resources
Next Steps

• Expand patient population to multicenter analysis
• Assess nuances that influence choice of MRCP vs. IOC
• Review long term outcomes for complications s/p IOC or ERCP for risk stratification
References


Questions?