Portal Hypertension and Secondary Biliary Cirrhosis in Post Cholecystectomy Benign Biliary Strictures: What are factors responsible, its Implications and long-term Outcomes

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Introduction

Portal hypertension (PHT) and secondary biliary cirrhosis (SBC) are found in 7-20% patients of post-cholecystectomy benign biliary strictures (BBS), which can lead to significant morbidity and mortality. This study was done to look for factors associated with PHT and SBC in BBS and its effect on perioperative morbidity and final outcomes.

Materials and Methods

• Retrospective analysis of prospectively maintained database of BBS.
• Perioperative factors, morbidity and mortality compared between patients with and without portal hypertension at the time of presentation.
• Outcomes measured with McDonald’s grading and Grade A and B considered as success.

Parameters:

A. Intraoperative
- BBS type
- Liver texture, portal hypertension, internal biliary fistula
- Type of surgery
- Duration of surgery
- Blood loss and transfusion requirements

B. Postoperative
- All morbidity & management
- Drain O/p: nature, amount.
- Bile (anastomotic) leak.
- Liver decompensation
- Mortality

Results

Nineteen patients had PHT out of 613 patients of BBS which were operated. It was seen more commonly in BBS grade III and above (n=12, 63%). The median time to repair in patients with PHT was more than 4 times that of patients without PHT (826 days vs. 210 days). Two patients with PHT had strictured previous primary repair in the form of Roux-en Y hepaticojejunostomy (RYHJ). In all patients RYHJ with liver biopsy was performed. None of the patients required prior porto-systemic shunting. In patients with PHT mean operating time (4.6 ± 2.8 vs. 3.5 ± 2 hours) as well as median blood loss (400 ml vs. 200 ml) was increased but with no significant increase in perioperative morbidity. Median follow up for these patients was 54 months. Success rate for RYHJ was 89% and only 1 patient required a revision RYHJ due to stricture and recurrent cholangitis. There was no significant increase in mortality (p = 0.053)

Table 1.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BBS without PHT</th>
<th>BBS with PHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>39 ± 12</td>
<td>39 ± 13</td>
</tr>
<tr>
<td>Sex (M:F)</td>
<td>476:118</td>
<td>14:5</td>
</tr>
<tr>
<td>Commonest symptom</td>
<td>Jaundice</td>
<td>Fever (cholangitis)</td>
</tr>
<tr>
<td>Failed Prior Repair</td>
<td>10</td>
<td>2 ; p = 0.006</td>
</tr>
<tr>
<td>Median Time to repair (days)</td>
<td>210 (103-520)</td>
<td>826 (265-2190)</td>
</tr>
<tr>
<td>Commonest BBS grade (%)</td>
<td>2 (45%)</td>
<td>3 (42%)</td>
</tr>
<tr>
<td>Mean duration of Sx (Hours)</td>
<td>3.5 ± 2</td>
<td>4.6 ± 2.8</td>
</tr>
<tr>
<td>Median blood loss (ml)</td>
<td>200 (50-300)</td>
<td>400 (75-800)</td>
</tr>
<tr>
<td>Anastomotic leak (%)</td>
<td>37(6.5)</td>
<td>2(10.5), p = 0.58</td>
</tr>
<tr>
<td>Revision Surgery</td>
<td>6</td>
<td>1, p = 0.08</td>
</tr>
<tr>
<td>Mortality</td>
<td>5</td>
<td>1, p = 0.053</td>
</tr>
</tbody>
</table>

Conclusion

Delayed repair, failed primary repair and higher grade of BBS are factors associated with development of PHT in BBS. RYHJ is feasible without need of portal-systemic shunting in all these patients with minimal morbidity and good long-term results.

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