INTRAHEPATIC GLISSONEAN PEDICLE APPROACH FOR LAPAROSCOPIC ANATOMIC LIVER RESECTION OF SEGMENT 7 AND 8

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[Background]
- The most important procedures of laparoscopic anatomical liver resection are the dissection of the Glissonean pedicles and the liver parenchymal transection along the hepatic vein.
- The branching pattern of the Glissonean pedicles running into the segment 7 (S7) and the segment 8 (S8) varies depending on the case.
- The extrahepatic approach to the Glissonean pedicle from the hepatic hilum is very difficult depending on the branching pattern.
- The distance of exposing the secondary branches that are to be preserved becomes longer, and there is an increased risk of biliary leakage and delayed biliary stricture due to excessive traction in laparoscopic surgery.

The points of the intrahepatic Glissonean approach for laparoscopic S7 and S8 segmentectomy

Identifying the targeted Glissonean pedicle intrahepatically after the parenchymal transection along the main hepatic vein or its branch running on the intersegmental plane, referring to the preoperative simulation by 3D imaging.

S7 segmentectomy

- After dividing the G7, the demarcation line emerges, and the posterior aspect of the RHV between S7 and S9 is exposed from the root side to the peripheral side.
- The Glissonean pedicles of S7 (G7) run posterior to the right hepatic vein.
- After the mobilization of the right G7 can be approached from the dorsal side by transecting the parenchyma between the IVC and the right hepatic vein.

S8 segmentectomy

- The parenchyma is transected along the middle hepatic vein (MHV) from the root side to the peripheral.
- G8 is typically located immediately to the right dorsal side of the MHV.
- After the division of the G8, the liver parenchyma is divided along the major hepatic fissure (i.e., the intersegmental plane including the MHV) from the ventral and cranial side using intercostal trocars; here, we referred to the preoperative simulation using 3D imaging and intraoperative ultrasonography.
- After exposing the MHV, the liver parenchymal transection proceed along the MHV from the root side to the peripheral side.

[Short-term outcomes]

<table>
<thead>
<tr>
<th>Type of Procedure</th>
<th>Age, year</th>
<th>Sex</th>
<th>Type of Tumour</th>
<th>Size, cm</th>
<th>Margin</th>
<th>Child-Pugh</th>
<th>Blood loss, mL</th>
<th>Surgical margin</th>
<th>Hospital stay, days</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>S7/8 segmentectomy</td>
<td>68(24-78)</td>
<td>M</td>
<td>HBV - A CRLM</td>
<td>200(&gt;0)</td>
<td>None</td>
<td>7</td>
<td>12(10-15)</td>
<td>Superficial</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S7 segmentectomy</td>
<td>64(45-71)</td>
<td>M</td>
<td>HBV - A HCC</td>
<td>100(&gt;0)</td>
<td>None</td>
<td>7</td>
<td>12(10-15)</td>
<td>Partial</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S7 segmentectomy</td>
<td>69(24-78)</td>
<td>F</td>
<td>HBV - A CRLM</td>
<td>200(&gt;0)</td>
<td>None</td>
<td>7</td>
<td>12(10-15)</td>
<td>Superficial</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S7 segmentectomy</td>
<td>68(24-78)</td>
<td>M</td>
<td>HBV - A HCC</td>
<td>100(&gt;0)</td>
<td>None</td>
<td>7</td>
<td>12(10-15)</td>
<td>Partial</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S8 segmentectomy</td>
<td>78(61-84)</td>
<td>M</td>
<td>HCV + A CRLM</td>
<td>300(&gt;0)</td>
<td>None</td>
<td>8</td>
<td>12(10-15)</td>
<td>None</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S8 segmentectomy</td>
<td>70(55-80)</td>
<td>F</td>
<td>HCV + A HCC</td>
<td>100(&gt;0)</td>
<td>None</td>
<td>6</td>
<td>12(10-15)</td>
<td>None</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S8 segmentectomy</td>
<td>72(55-80)</td>
<td>M</td>
<td>HCV + A HCC</td>
<td>100(&gt;0)</td>
<td>None</td>
<td>6</td>
<td>12(10-15)</td>
<td>None</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
<tr>
<td>S8 segmentectomy</td>
<td>71(55-80)</td>
<td>M</td>
<td>HCV + A HCC</td>
<td>100(&gt;0)</td>
<td>None</td>
<td>6</td>
<td>12(10-15)</td>
<td>None</td>
<td>11(5-11)</td>
<td>None</td>
</tr>
</tbody>
</table>

[Conclusion]

Intrahepatic Glissonean Pedicle Approach for Laparoscopic Anatomical Liver Resection of Segment 7 and 8 is safe and useful.

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*Note: The table data is hypothetical and for example purposes only.*