PORTAL SUPPLY TO CAUDATE LOBE AND QUADRATE LOBE OF LIVER
K. Maheswari

ABSTRACT: The precise knowledge of intra hepatic branching pattern of portal vein to caudate lobe and quadrate lobe is important for Gastroenterologist during hepatic segmental and subsegmental resection. The study was done in 47 adult human liver specimens. In this study methods like Manual dissection and Contrast study were used. During this study the portal branches to caudate lobe, Quadrate lobe and accessory branches to segment IV in addition to its branches were observed. The results were compared with previous studies.

KEYWORDS: Portal supply, Caudate lobe, Quadrate lobe, Accessory portal branches.

INTRODUCTION: The knowledge of portal branches to caudate lobe and Quadrate lobe are important while planning for Hepatic surgery like Segmental and Subsegmental resection. Caudate lobe has three parts are Right portion, Left portion of caudate lobe and Caudate process.

Right portion of caudate lobe receives portal branches from Right branch, Left branch of portal vein and portal trunk.

Left portion of caudate lobe receives portal branches only from Pars transversalis part of left branch of portal vein.

Caudate process receives portal branches from Right branch of portal vein and from portal trunk.

The different types of portal supply to caudate lobe and caudate process were observed in the present study1,2,3 (Elias & Petty 1952, Michel 1955, Gupta et al 1977).

Quadrate lobe received portal supply from right side of Left branch of portal vein3,4 (Gupta et al 1977, Osamu Matsui et al 1977)

ACCESSORY BRANCHES: In the present study, for Quadrate lobe, accessory branch was also observed from Right anterior segmental branch in addition to its portal branch from Left branch of portal vein. (Osamu Matsui et al 1977 by Helical computed tomographic hepatic arterioprtography).

MATERIALS AND METHODS: This study was done in 47 adult liver specimens. The methods like Manual dissection and Contrast study were used.

OBSERVATIONS: CAUDATE LOBE: Portal branches to caudate lobe: In all 47 liver specimens the branches arose from Right branch, Main portal trunk and parstransversalis part of Left branch of portal vein were observed. (Fig. 1)
Right Portion of Caudate Lobe: Received branches from;
- Parstransversalis part of Left branch of portal vein – in 63.8%.
- Right branch of portal vein – in 8.5%.
- Portal trunk – in 27.7%.

In one specimen a branch arose from portal trunk divided into two branches, one to supply Right portion of caudate lobe and other to caudate process. (Fig. 2)

Caudate Process: All 47 liver specimens received portal branches from;
- Right branch of portal vein – in 70%.
- Portal trunk – in 30%.

Left portion of caudate Lobe: In all 47 liver specimens it received its branches only from Parstransversalis part of Left branch of portal vein. (Fig. 3)

QUADRATE LOBE: In all 47 liver specimens, the quadrate lobe received its branches from right side of Left branch of portal vein. In four specimens (three by manual dissection and one by contrast study), it was observed that the quadrate lobe received accessory branch from Right anterior segmental branch in addition to its branch from Left branch of portal vein. (Fig. 4) (Osamu Matsui et al).

DISCUSSION: In the present study the portal branches to caudate lobe and Quadrate lobe were observed. The study was discussed with previous study done by corrosion cast in Table I. Apart from its usual branches the accessory branch to quadrate lobe was also observed in this study. In the previous study, found accessory branches from right branch of portal vein to segment IV by helical computed tomographing arterioprtography in patients. The precise knowledge of this portal branches are clinically important for the operating Gastroenterologist before planning for hepatic segmental and sub segmental resection.

REFERENCES:
Figure 1: Portal branches to Caudate Lobe. 1. From right branch of Portal vein, 2. From Portal trunk 3. From Left branch.

Figure 2: Branches to right portion of Caudate Lobe. 1. Branch from portal trunk divided into two. 2. Left branch of Portal vein.

Figure 3: Branch to left portion of Caudate Lobe.
Figure 4: Accessory Branch to Quadrate Lobe. 1. From left branch of portal vein 2. From right anterior segmental branch of right branch of portal vein.

<table>
<thead>
<tr>
<th>Site of origin</th>
<th>Caudate Process</th>
<th>Right portions of Caudate lobe</th>
<th>Left portions of Caudate lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gupta et al.,</td>
<td>Present study</td>
<td>Gupta et al., Present study</td>
</tr>
<tr>
<td></td>
<td>No. of casts %</td>
<td>No. of specimens %</td>
<td>No. of casts %</td>
</tr>
<tr>
<td>Right branch of portal vein</td>
<td>61 72%</td>
<td>33 70%</td>
<td>12 14%</td>
</tr>
<tr>
<td>Transverse portion of left branch of portal vein</td>
<td>10 12%</td>
<td>_ _</td>
<td>58 68%</td>
</tr>
<tr>
<td>(Pars Transversalis)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Portal Trunk</td>
<td>14 16%</td>
<td>14 30%</td>
<td>15 18%</td>
</tr>
<tr>
<td>Total</td>
<td>85 100%</td>
<td>47 100%</td>
<td>85 100%</td>
</tr>
</tbody>
</table>

Table I: Comparison of portal branches to caudate lobe between the study of Gupta et al., and present study

AUTHORS:
1. K. Maheswari

PARTICULARS OF CONTRIBUTORS:
1. Professor & HOD, Department of Anatomy, Meenakshi Medical College & RI, Enathur, Kancheepuram.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. K. Maheswari, Professor & HOD, Department of Anatomy, Meenakshi Medical College & RI, Enathur, Kancheepuram-631552.
E-mail: kannappam.maheswari@gmail.com

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