

3

CT

1

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: CT 3 CT- (avascular zone) ,

: 15 CT 3

, (avascular zone)가

: 13 3 10 (77%) 3 (23%) 3 2 13 11 (85%) 1 (8%) 4 26 ° 64 ( 47.5 ) 1 (8%) (8%) 3 (trifurcation), 1

: 3

Couinaud Bisthmus 가 .

(1-2). 가 1996 1 8 1996 5 CT 26-64 가 2

(3) 가 2 15 51 가 13 가 2

(4-6) ,

(4, 6). 3 CT 5-F (5-F Yashiro Catheter; Terumo, Tokyo, Japan) CT CT Somatom Plus S 40B (Sie-mens, Erlangen, Germany) , Ultravist 300 (Schering, Berlin, Germany), Optiray 320 (Malinckrodt Medical Inc, Quebec, Canada) 2-3ml

1 1998 10 13 1999 7 16

100-120 ml  
Inc, Pittsburgh, USA)  
breath hold CT  
8mm/sec,  
CT  
II  
tion; MIP)  
30 °  
3  
CT

MCT plus (Medrad  
47 single  
5mm,  
3 mm  
Somaris  
(Maximal Intensity Projec-  
CT

: 3 CT

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3  
2). 3 (23%) 2  
2  
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(Fig. 1), 3 (23%)  
(Fig.  
(Fig. 3) 1  
가 13  
11 (85%)  
(Fig. 4), 1 (8%)

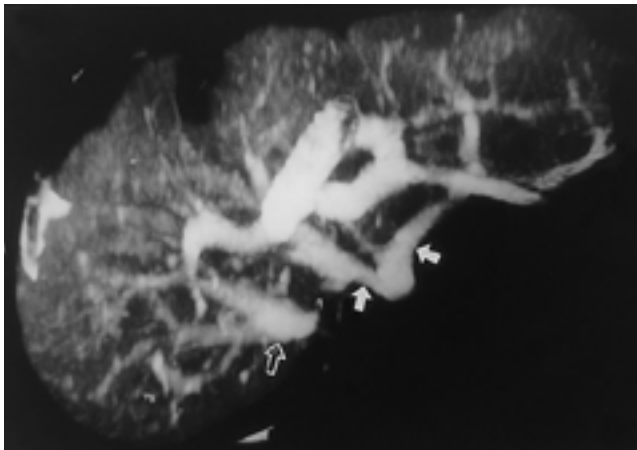


Fig. 1. Axial projection angiogram show conjoined middle and left hepatic vein (solid arrows) before drain into IVC. Right hepatic vein (open arrow) drains separately to IVC.

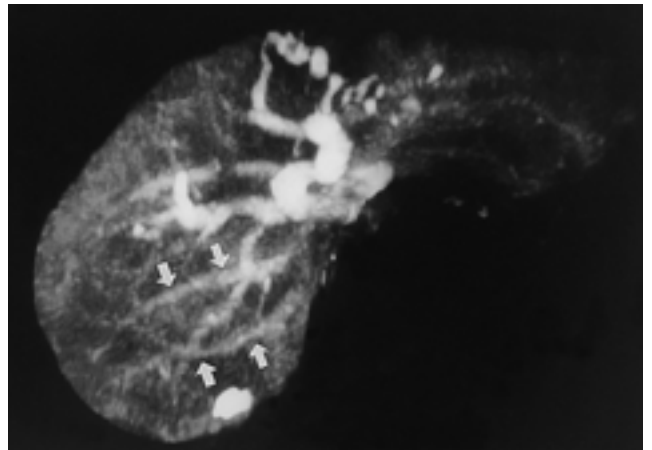


Fig. 3. Axial projection angiogram shows two right hepatic veins (arrows) of similar diameter.

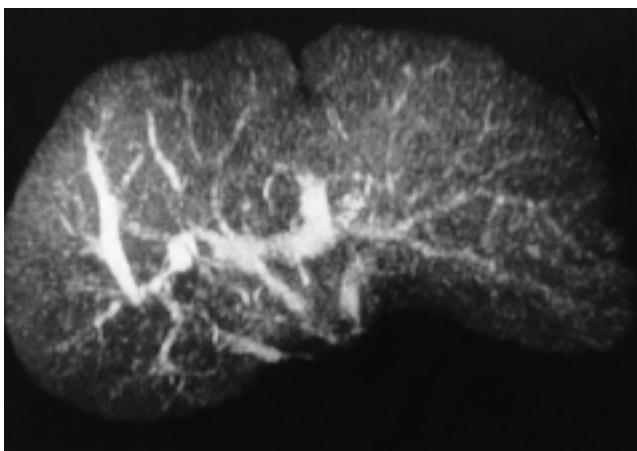


Fig. 2. Axial projection angiogram shows three hepatic veins drain into IVC separately.

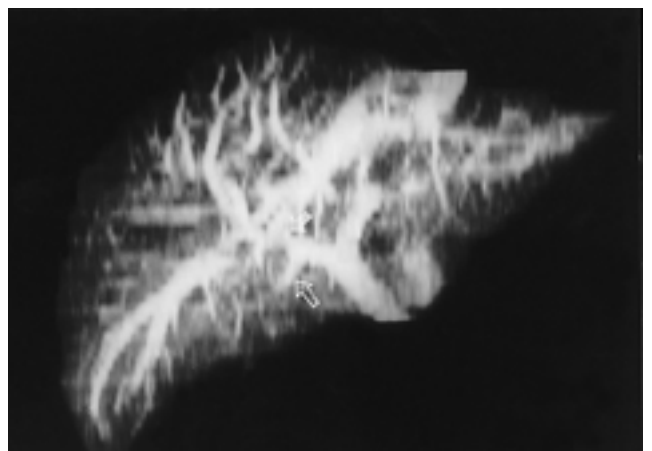


Fig. 4. Frontal projection angiogram shows classical branching pattern of right portal vein into anterior (solid arrow) and posterior (open arrow) segmental branches.

2  
가 2 (4-7).  
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(8-9)  
Slab editing 3  
가 2  
가  
가  
26 ° 64 47.5 9  
Leeuwen  
31.2 4), 58.4 5)  
가  
3

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## Intrahepatic Venous Anatomy on Three-Dimensional Spiral CT during Arterial Portography<sup>1</sup>

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**Purpose:** To evaluate the intrahepatic anatomy of the hepatic vein and right portal venous system, as seen on 3-D CTAP, and to assess the avascular zone between the anterior and posterior segments of the right lobe in relation to the right hepatic vein.

**Materials and Methods:** Fifteen patients in whom nodular hepatocellular was suspected underwent spiral CTAP. 3-D images of the portal and hepatic vein were obtained using the maximal intensity projection technique. We examined the portal venous branching pattern and the draining pattern of the hepatic venous system to the inferior vena cava, as well as variation of the right hepatic vein and the avascular zone between the anterior and posterior segments of the right lobe.

**Results:** In 13 patients, three hepatic veins were clearly visualized, and in ten, the middle and left hepatic veins conjoined before draining to the IVC. In three patients, three hepatic veins drained separately into the IVC. Two right hepatic veins were seen in three patients. The right portal venous system was clearly visualized in 13 patients a classical branching pattern in 11, trifurcation in one, and four simultaneous branching patterns in one.

Lateral projection showed that the angle of the avascular zone declined posteriorly by  $26^{\circ}$  to  $64^{\circ}$  ( $47.5^{\circ}$ ) in relation to the right hepatic vein.

**Conclusion:** We observed the drainage pattern of the hepatic vein and variation of the right portal venous system on 3-D image, and confirmed that since the avascular zone declined posteriorly, the right hepatic vein is an inappropriate landmark for right hepatic segmentation.

**Index words :** Liver, CT

Liver, anatomy

Computed tomography (CT), angiography

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