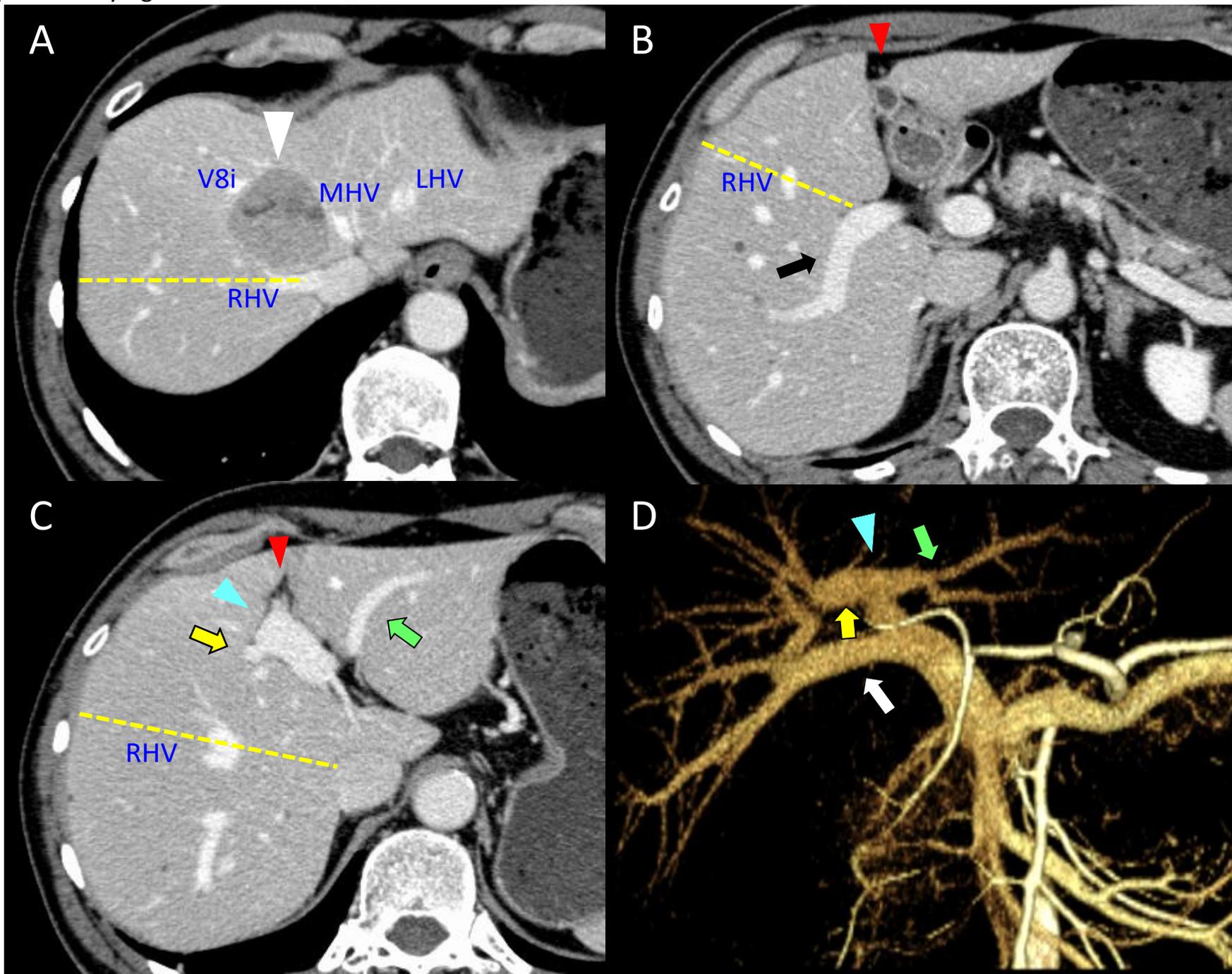


Supplementary figure 1

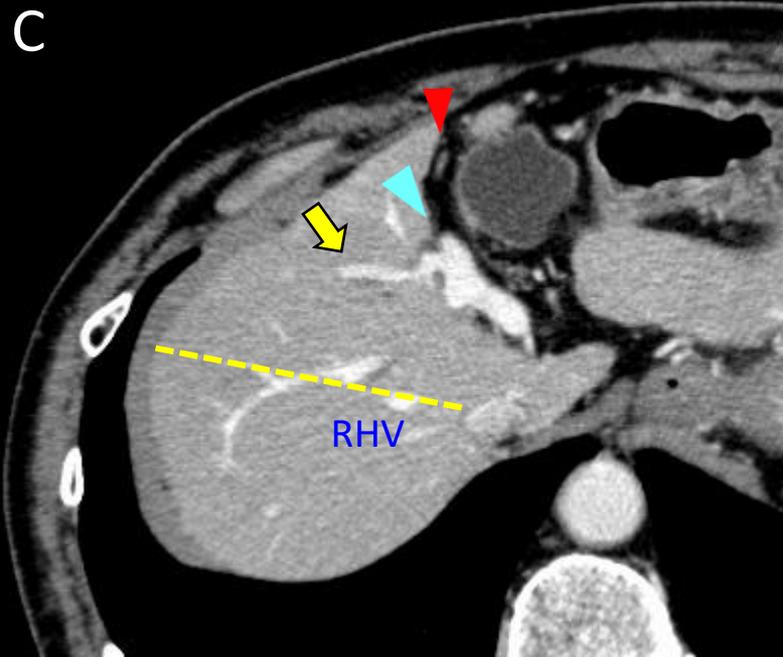
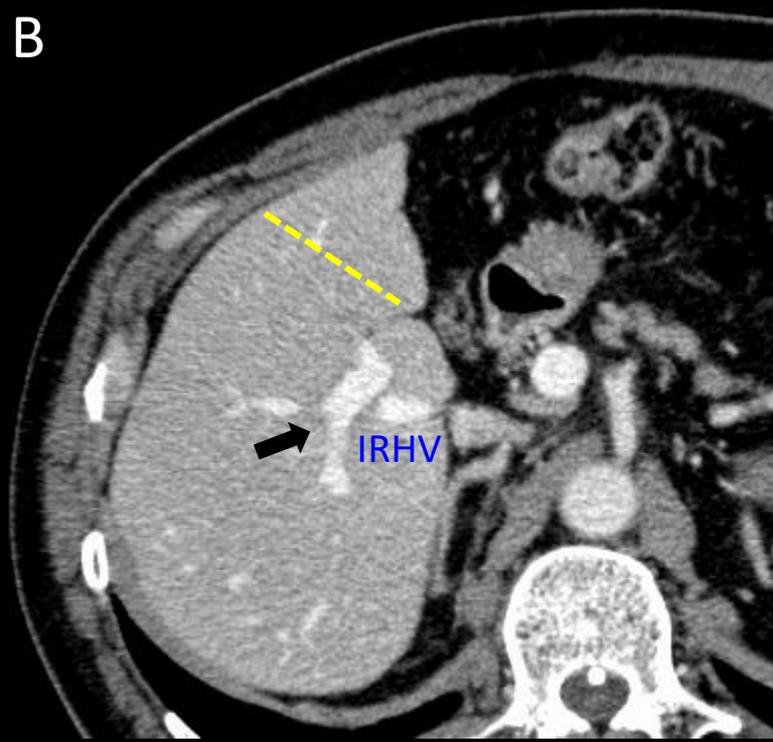
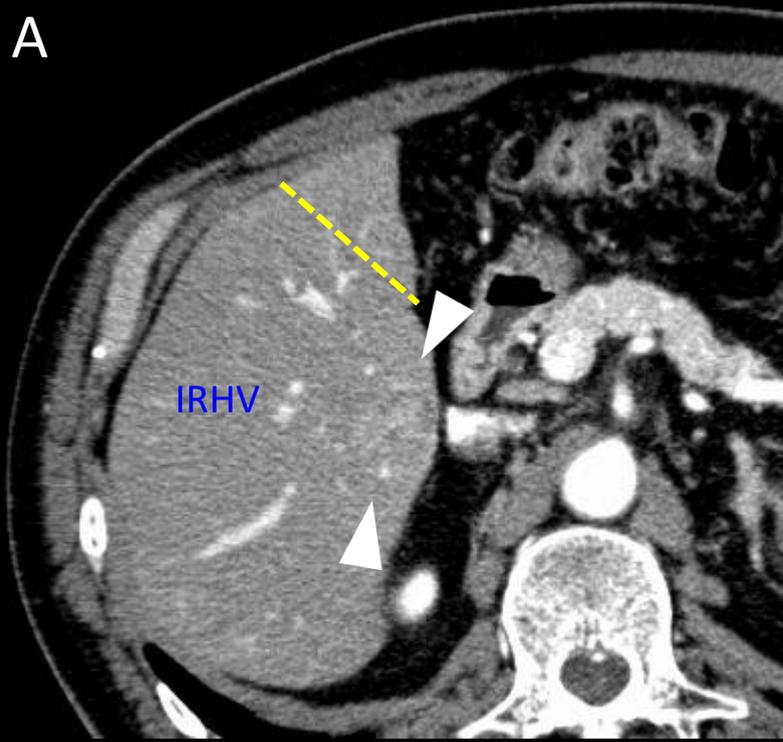


Supplementary figure 1 (Case 1 in table 1)

A: A hepatocellular carcinoma located in S8 (white arrowhead) between the middle and right hepatic veins. The yellow dotted line denotes the boundary between the anterior and the posterior section.

B, C: The posterior portal vein ramified independently (black arrow), followed by the anterior portal vein ramification (yellow arrow) from the umbilical portion (blue arrowhead). The red arrowheads and green arrows indicate the right-sided round ligament and the left portal vein, respectively.

D: Portal vein ramification on 3D imaging. The posterior portal vein is denoted by a white arrow.



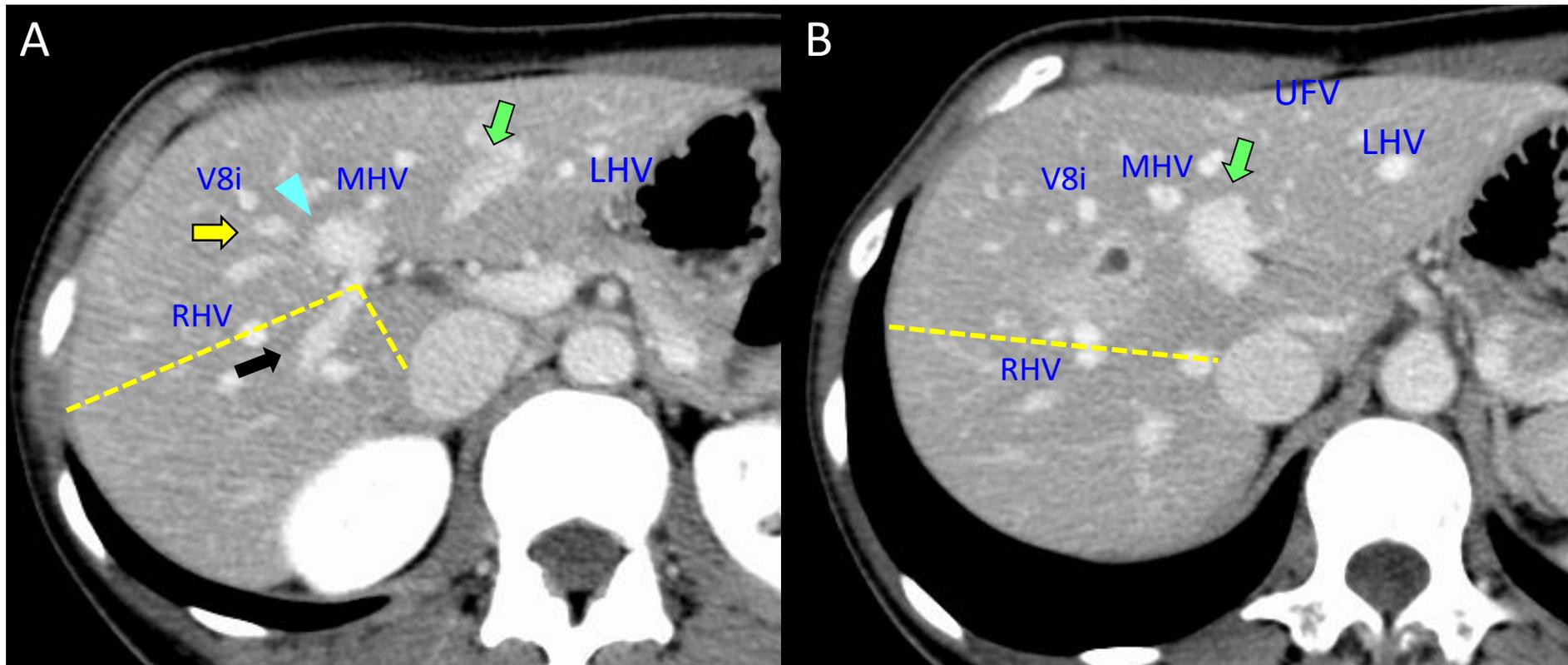
Supplementary figure 2 (Case 2 in table 1)

A: A hepatocellular carcinoma located in S6 (white arrowheads).

B, C: The posterior portal vein ramified independently (black arrow), followed by the anterior portal vein ramification (yellow arrow) from the umbilical portion (blue arrowhead). IRHV: inferior right hepatic vein.

D: Portal vein ramification on 3D imaging. The posterior portal vein is denoted by a white arrow.

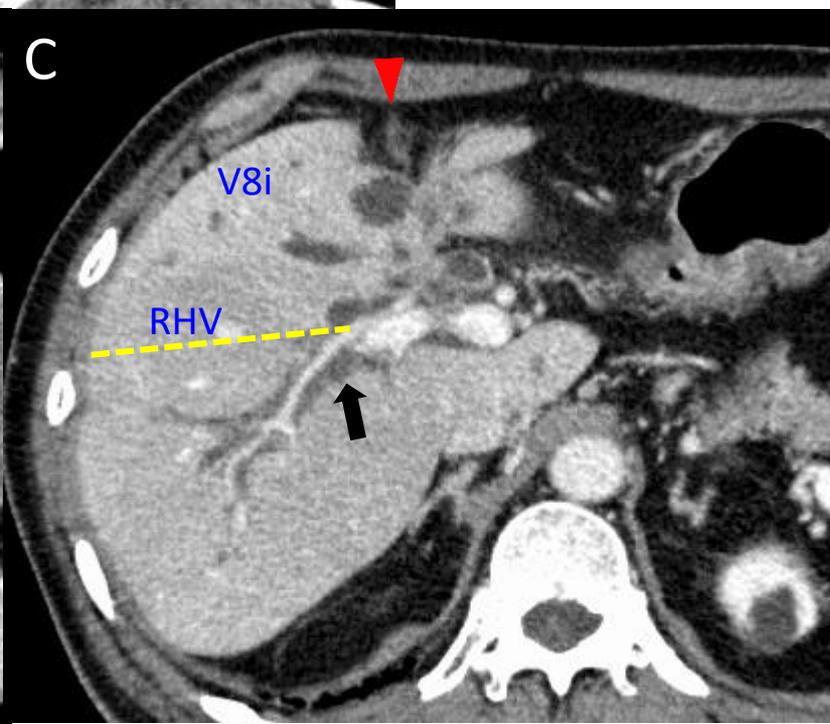
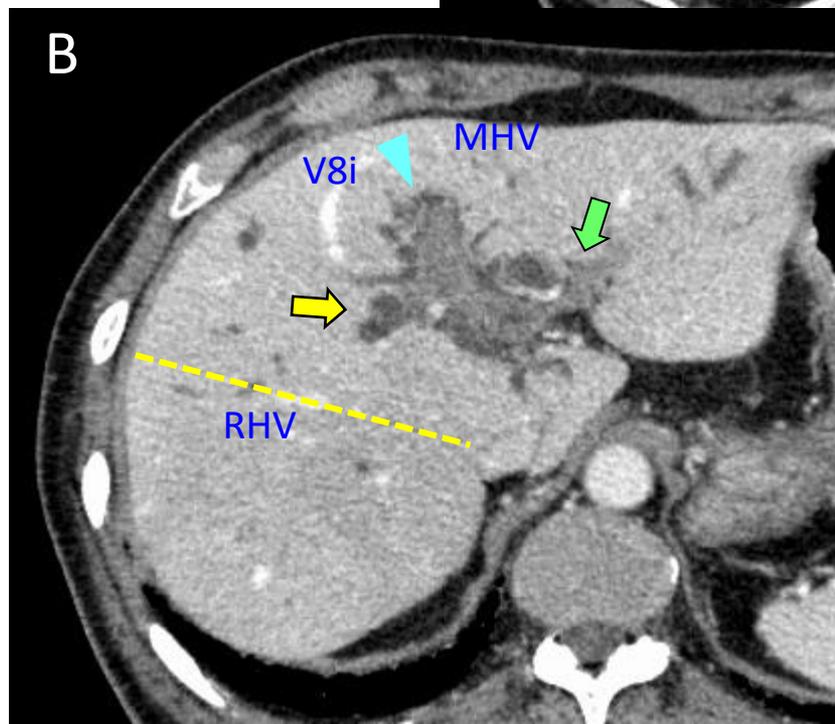
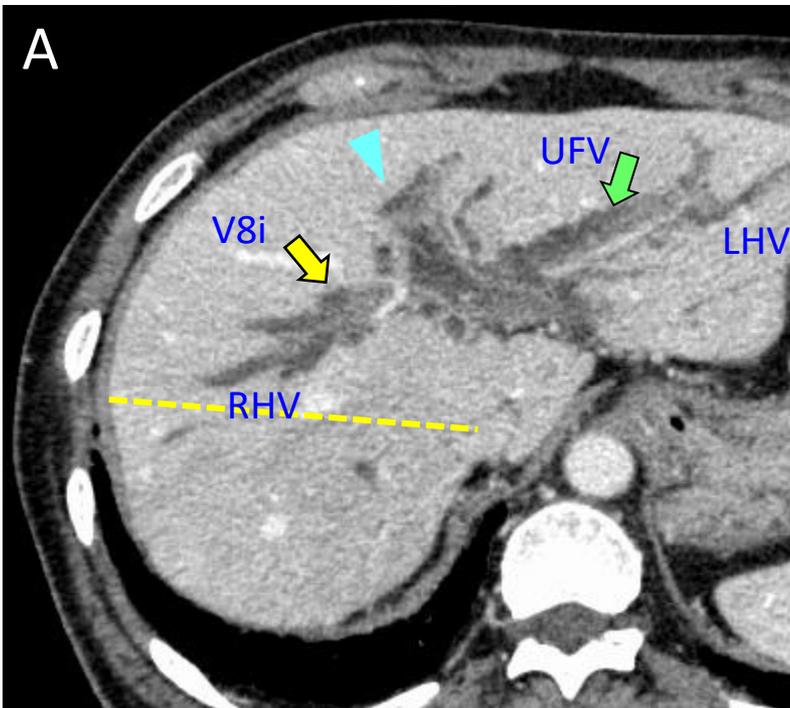
Supplementary figure 3



Supplementary figure 3 (Case 3 in table 1)

A, B: The main portal vein diverged to the right and the left portal veins (P-bifurcation type).

Supplementary figure 4

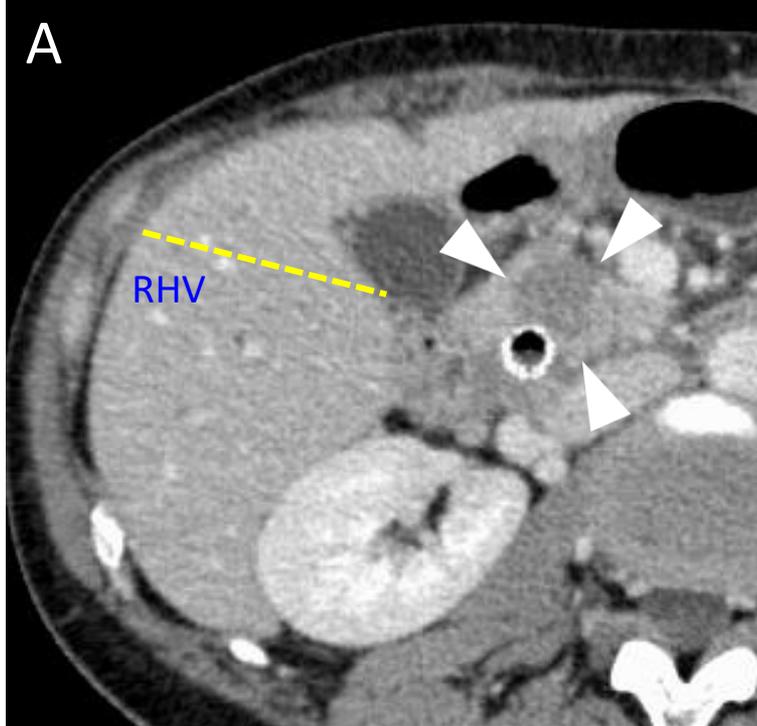


Supplementary figure 4 (Case 4 in table 1)

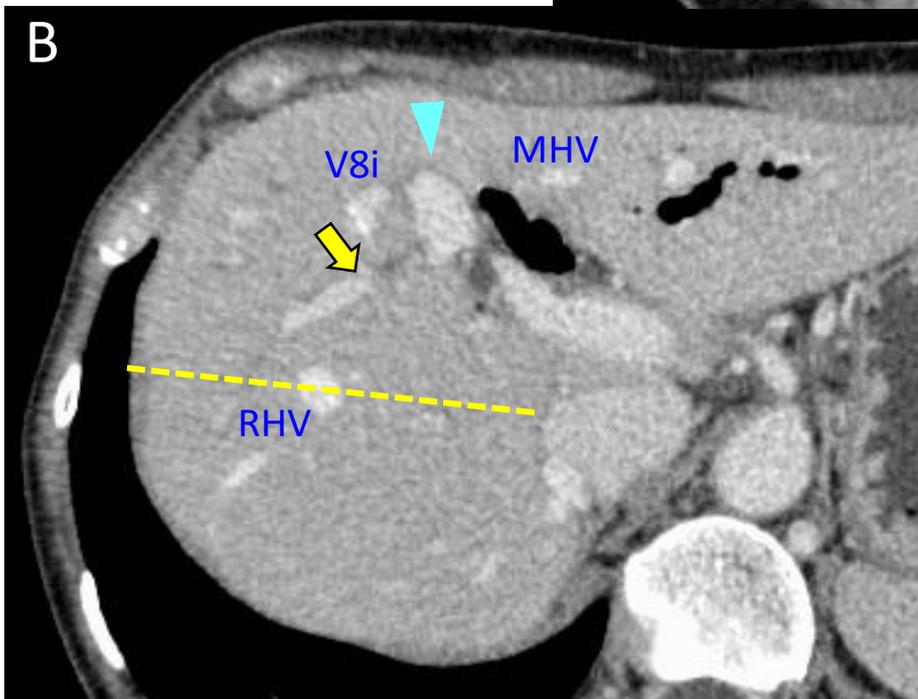
A, B, C: The anterior and the left portal veins were occluded by benign bile duct stenosis. The intrahepatic bile duct was dilated throughout the liver.

Supplementary figure 5

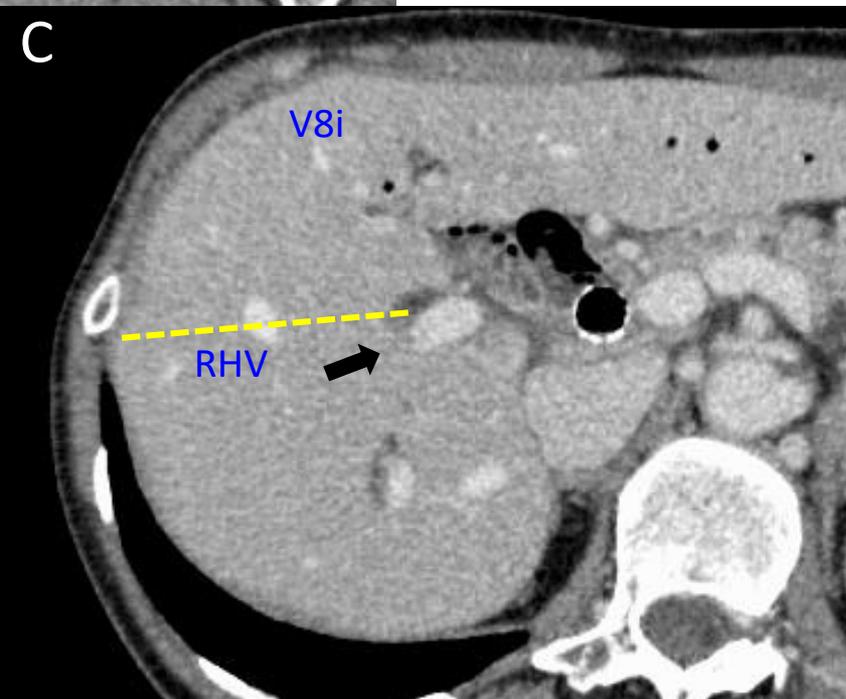
A



B



C



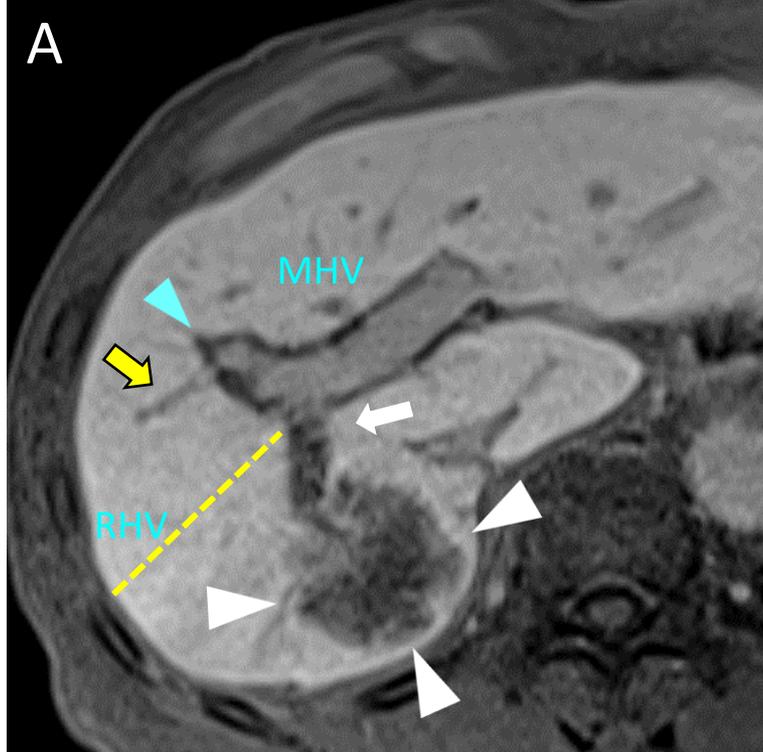
Supplementary figure 5 (Case 5 in table 1)

A: A pancreatic tumor located in the pancreatic head (white arrow heads).

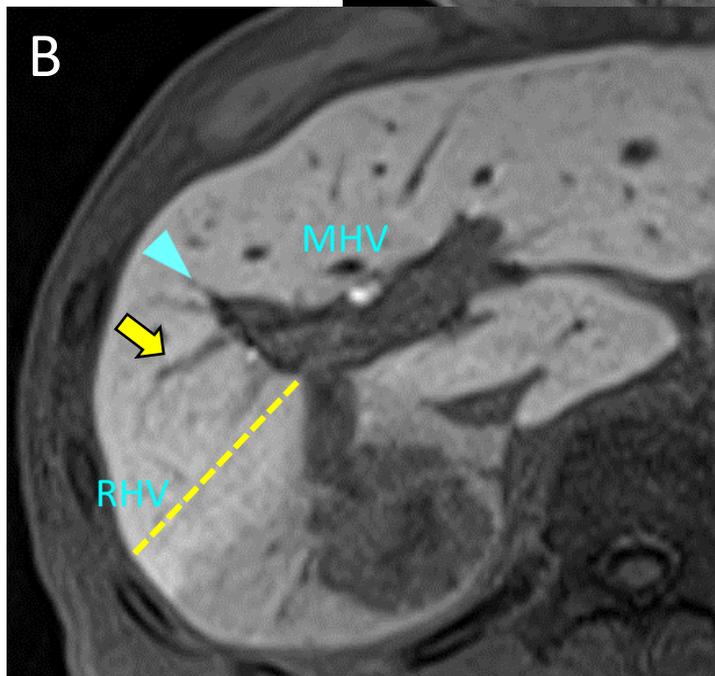
B, C: The posterior portal vein ramified independently (black arrow), followed by the anterior portal vein ramification (yellow arrow) from the umbilical portion (blue arrowhead).

Supplementary figure 6

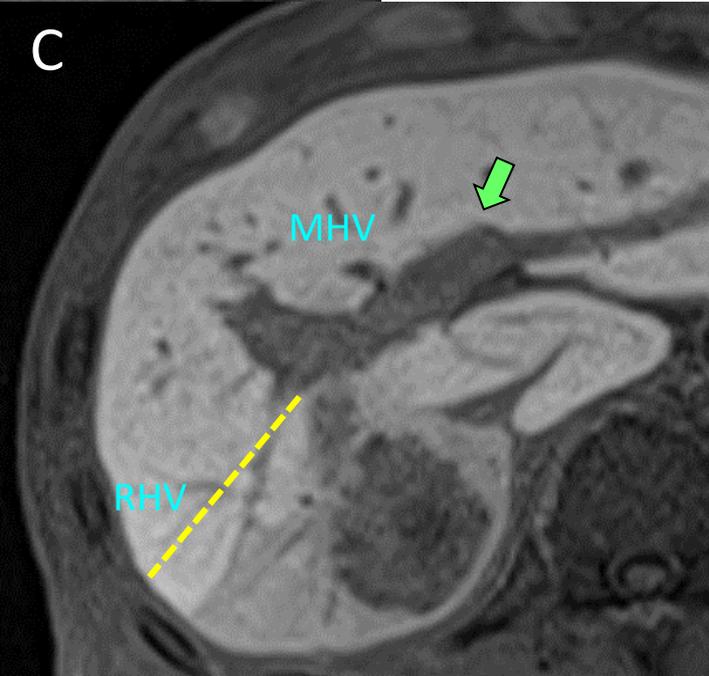
A



B



C



Supplementary figure 6 (Case 7 in table 1)

A: Magnetic resonance imaging of a combined hepatocellular cholangiocarcinoma (white arrowheads) with a portal vein tumor thrombus extending to the posterior portal vein (white arrow, P-bifurcation type).

B, C: Anterior portal branches (yellow arrow) ramified from the umbilical portion (blue arrowhead).