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Liver Surgery Case VIII

Hepatic Arterial Variation (Replaced Right Hepatic Artery Arising from the Superior Mesenteric Artery)

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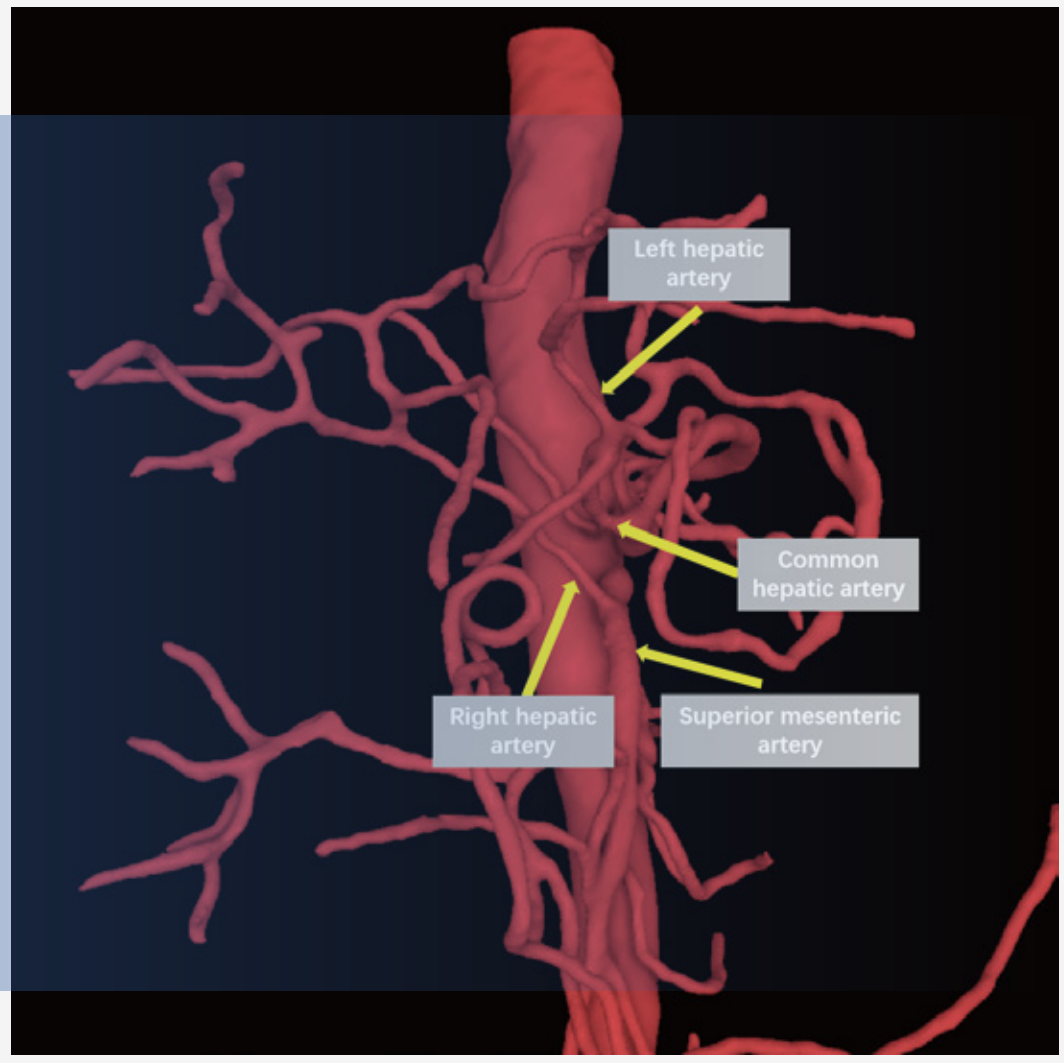
In this patient, the right hepatic artery (RHA) is replaced and arises from the superior mesenteric artery (SMA); there is no RHA branch from the proper hepatic artery. Thus, arterial inflow to the right hemiliver is supplied directly via the SMA-derived RHA.



Surgical implications:

- Right hemihepatectomy: The RHA cannot be divided at the usual hilar landmark. It must be separately identified, isolated, and divided along its aberrant course.
- Biliary procedures: The RHA runs to the right of the bile duct (normally on the left). During Calot's (hepatocystic) triangle dissection, carefully confirm the cystic artery before division to avoid injuring the RHA. When dissecting the extrahepatic bile duct, continuously assess the artery–duct relationship to prevent arterial injury.
- Pancreaticoduodenectomy: Because of variant SMA branching supplying a replaced RHA, meticulously identify all SMA branches during dissection to avoid inadvertent division of critical branches—particularly the replaced RHA that perfuses the right liver.

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