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Feasibility and safety of bisegmentectomy 7–8 while preserving hepatic venous outflow

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Purpose: Preserving maximal future liver remnant is one of the most important goals to be achieved in liver resection. For tumors located between segments 7 and 8, determining the optimal extent of resection is difficult. We evaluated the feasibility and safety of bisegmentectomy 7-8 (S7-8) with a thick inferior right hepatic vein (IRHV) or right hepatic vein (RHV) reconstruction.

Methods: Twenty patients undergoing S7-8 between 2010 and 2017 were evaluated and compared with 22 patients undergoing right posterior sectionectomy (RPS), with a similar resection volume but without hepatic vein resection. In the S7-8 group, 14 patients with a significant IRHV (median 6 mm, range 3.6–8.8 mm) underwent S7-8 without hepatic vein reconstruction. RHV reconstruction was performed for 6 patients with no IRHV, consisting of direct end-to-end anastomosis of the RHV in 5 patients and reconstruction using the cryo-preserved iliac vessel in 1 patient.

Results: Liver cirrhosis was more frequent in the S7-8 group than in the RPS group ($p=0.023$). Other baseline characteristics did not differ between the groups. Two patients undergoing RHV reconstruction had early anastomosis obstruction; eventually, a metallic stent was inserted. They recovered without sequelae. No differences in surgical characteristics or outcomes were observed between the two groups.

Conclusion: S7-8 can be performed safely in select patients with a thick IRHV. If there is no obvious IRHV, RHV reconstruction can maximize the future liver remnant.