Left-sided hepatectomy for hilar cholangiocarcinoma to maximize resection margin

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Lecture : Resection for perihilar cholangiocarcinoma remains a surgical challenge because of complex and demanding nature of hepatectomy, advanced disease nature at initial presentation, and associated cholestasis. Although R0 is the primary goal of resection, positive surgical margin, especially in the proximal bile duct, is often faced even after curative-intended surgery. This involvement is attributed by two factors. One is a gap of the tumor invasion between by gross inspection and by actual histologic assessment, suggesting a safety margin of the duct. Another is the resection line of the proximal duct depends on the type of hepatectomy; namely, the resection line is closely associated with the topological relation with the portal vein that should be to preserve. Therefore, to achieve the goal, optimal hepatectomy should be selected on the basis of tumor staging.

The resection line of the bile duct in left trisectionectomy is usually set just above the right posterior portal vein or behind the right anterior portal vein divided; whereas that in left hepatectomy is set just on the right portal vein. From our study measuring the ductal length in each hepatectomy, the length of the resected right posterior bile duct (B6+7) was significantly longer in left trisectionectomy than in left hepatectomy: 20.7±6.4 vs 13.6±5.2mm ($P<0.001$). Thus, left trisectionectomy provides a 7mm-longer bile duct by sacrificing the right anterior sector and is exclusively applied for Bismuth type IV tumor. In left trisectionectomy, the right hepatic vein does not always form an anatomic landmark for liver transection, the transection plane along the right posterior fissure is vast and steep, and combined vascular resection is occasionally accompanied, indicating a challenging nature of this hepatectomy. In fact, most HBP surgeons conceive left trisectionectomy as the most complex hepatectomy; furthermore, this hepatectomy constantly ranks top in mortality according to Japanese nationwide survey.