Surgical treatment for bismuth type I or II hilar cholangiocarcinoma

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Introduction

Local or hilar resections is often performed for Bismuth type I and II tumors; however, reported outcomes have been unsatisfactory with a high recurrence and low survival rate. To improve survival, some authors have recommended right hepatectomy. However, the clinical value of this approach has not been validated. In this lecture, we outline our experiences with surgical resection for Bismuth type I and II hilar cholangiocarcinomas and clarify the optimal surgical strategy for this type of tumors.

Patients and methods

We retrospectively reviewed the medical records of just 100 patients with Bismuth type I or II hilar cholangiocarcinoma who underwent surgical resection from January 1977 to September 2012. There were 63 men and 37 women, with a mean age of 64±10 years (range, 39 to 83 years). Of these, 96 (96.0%) patients underwent preoperative biliary drainage, including percutaneous transhepatic biliary drainage in 64, endoscopic naso-biliary drainage in 29, endoscopic biliary stent in 2, and self-expanding metallic stent in 1. Our strategy was in principle as follows: through 1996 (n=24), bile duct resection or the smallest necessary hepatic segmentectomy was performed; after 1997 (n=76), choice of resection was based on the cholangiographic tumor type. For nodular or infiltrating tumor, right hepatectomy was indicated; for papillary tumor, bile duct resection with or without limited hepatectomy was chosen.

Results

Through 1996, type of resection was bile duct resection without hepatectomy in 11 patients, right hemihepatectomy in 5, left hemihepatectomy in 2, and other hepatectomies in 6. After 1997, bile duct resection was performed in only 5 patients. The most common procedure in this period was right hemihepatectomy in 56, followed by left hemihepatectomy in 9, left trisectionectomy in 2, right trisectionectomy in 1, and other hepatectomies in 3. Overall, right sided hepatectomy was performed in 5 (20.8%) of the 24 patients through 1996 and was done in 57 (75.0%) of the 76 patients after 1997 (P <0.001). Combined pancreatoduodenectomy was performed in 34 patients, combined portal vein resection in 23, and combined hepatic artery resection in 3.

Two (8.3%) patients died of postoperative complications in the earlier period, and 3 (3.9%) did in the later period.

In patients without pM1 disease, R0 resection was achieved more frequently in the later period than in the earlier period (63/68 = 92.6% vs. 13/20 = 65.0%, P <0.001), which lead to better survival in the later period (overall 5-year survival, 58.1% vs. 25.0%; 10-year survival, 50.6% vs. 8.3%, P <0.001). In the 65 patients with nodular or infiltrating tumor who tolerated surgery and did not have pM1 disease, survival was better in patients who underwent right hepatectomy (n=44) than in those who did not (n=21) (5-year survival, 75.8% vs. 31.8%, P <0.001). In cases of papillary tumor, bile duct resection with or without limited hepatectomy was sufficient to improve long-term survival.

Conclusion

The surgical approach to Bismuth type I and II hilar cholangiocarcinomas should be determined according to cholangiographic tumor type. For nodular and infiltrating tumors, right hepatectomy is in principle essential; for papillary tumor, bile duct resection with or without limited hepatectomy is adequate.