Left hepatic trisectionectomy with combined vascular resection for advanced perihilar cholangiocarcinoma

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Perihilar cholangiocarcinoma still remains the most difficult challenge for the hepato-biliary surgeons. Vascular invasion has been the major cause of irresectability of perihilar cholangiocarcinoma. However, the advancement of surgical techniques during the recent large experiences of live-donor liver transplantation has made it possible to resect and reconstruct the involved portal vein and hepatic artery with low morbidity and mortality. Left hepatic trisectionectomy (LTS) is the most extended hepatic resection. Liver insufficiency is still the dangerous problem in extended resections. Recent studies have clearly shown that it is the size of the remnant liver that correlates with perioperative morbidity and mortality. Japanese groups have addressed the use of preoperative portal vein embolization (PVE) to increase both volume and function of the future remnant liver. Because morbidity and mortality is highest when LTS is combined with the associated procedures (morbidity of 66% versus 33% in LTS alone), the broad application of PVE, ie, if the functional liver volume is < 40%, should be considered at least before those patients in whom the need for vascular reconstruction or other operative extensions is most likely.

Case Presentation

49 year-old Korean female was referred with mild cholangitis symptom. Jaundice was not shown, but AST/ALT were 108/43 IU/L, WBC was 12,500/mm3. Preoperative MRC and 3-D CT revealed that 7cm-sized large heterogeneous mass in S4 and 1.2 cm-sized mass in S3 was compressing the hilum with obliteration of left PV, resulting dilation of B2, B3, part of B4. Right PV was abutted at its proximal portion to the tumor. The bifurcation of left and right HA was invaded by turmor, 3-cm in length. The 1st order branch of right hepatic duct was invaded by tumor. Pre-operative diagnosis was mass-forming intrahepatic cholangiocarcinoma with intrahepatic metastasis in S3, hilar invasion to the bifurcation of BD, PV and HA. Preoperative PVE to anterior PV was performed. Preoperative biliary decompression was not needed. Left trisegmentectomy with caudate lobectomy, BDR, PV resection with left renal vein interposition graft reconstruction, HA resection with gastro-duodenal artery inflow reconstruction was performed. Operation time took 12 hours and blood loss was minimal.