Strategies for Treatment of Invasive Ductal Carcinoma of the Pancreas and How to Obtain No Mortality for Pancreaticoduodenectomy - Techniques and Significance of the Extrapancreatic Nerve - Plexus Resection

Department of Gastroenterological and General Surgery (First Department of Surgery), Yamagata University School of Medicine, 2-2-2 Iida-Nishi, Yamagata City Yamagata 990-9585, Japan

Wataru Kimura

Although various therapeutic modalities for carcinoma of the pancreas are available, "curative resection" is most important. Thus, the aim of surgery for carcinoma of the pancreas is local complete resection of the carcinoma.

Carcinoma of the head of the pancreas invades through the pancreatic parenchyma, following the arteries, veins and especially nerves between the parenchyma and fusion fascia, and then spreads horizontally toward the superior mesenteric artery or celiac axis.

We suggest techniques for resection of the extrapancreatic nerve plexus in the head of the pancreas during a Whipple procedure for carcinoma of the pancreas from the perspective of surgical anatomy and pathology, for "curative resection". Our two suggestions are: 1. En bloc resection of the right side of the superior nerve plexus and the first and second nerve plexus of the pancreatic head should be performed. With this technique, it is possible to avoid cutting these nerves. It is easy to perform this procedure as follows. First, the superior mesenteric artery and vein are encircled with tape. Next, the superior mesenteric artery should be moved to the right side of the superior mesenteric vein under this vein (The Kimura's Technique). 2. The entire cut end of the nerve plexus should be investigated during the operation using frozen specimens and confirmed to be negative for cancer. If the cut end is positive for cancer, additional resection of the nerve plexus should be performed to achieve curative resection. Because, it is impossible to completely investigate positive or negative carcinoma in the cut end of the nerve plexus after surgery, since the cut end is long and some specimens are deformed by formalin fixation; thus, it is difficult to identify the true surgical cut end.

With regard to reconstruction, we perform a modified Child method with pancreatico-jejunostomy; end to side, choledochoduodenostomy; also end to side, and gastrojejunostomy with Braun's anastomosis. The greater omentum is set around the pancreatico-jejunostomy to prevent

the spread of pancreatic juice in the abdomen. The management of the intraabdominal drainage tubes after the operation is very crucial.

As the outcome of such operation and postoperative controls described above, operative mortality was zero in all of the consecutive 150 cases in our series who underwent pancreatico-duodenectomy.

Key Words: curative resection, horizontal spread. En bloc resection, nerve plexus, modified Child method, The greater omentum around PJ, Operative mortality