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Commentary

Surgical Considerations of Pancreaticoduodenectomy, its Medical Indications and Contraindications

Chen Yim*

Department of Urology, Guangdong Medical University, Zhanjiang, China

DESCRIPTION

The whipple technique, also known as a pancreaticoduodenectomy, is a significant surgical treatment most frequently used to remove malignant tumours from the pancreatic head. Additionally, it is used to treat chronic pancreatitis, duodenal damage, and pancreatic trauma. The duodenum, proximal jejunum, gallbladder, and, occasionally, a portion of the stomach must all be surgically removed in order to remove the head of the pancreas because these organs all share a blood supply in the proximal gastrointestinal tract.

Surgical considerations

Pylorus-sparing pancreaticoduodenectomy in large part to the fact that patients who consent to this procedure frequently experience the development of brittle diabetes, a particularly severe form of diabetes mellitus, total pancreatectomy has not been shown to offer significant survival benefits. The pancreaticojejunostomy may not always hold when the procedure is complete, and the patient may contract an infection. This may result in a second procedure soon after to remove the remaining pancreas (and occasionally the spleen) in order to stop the spread of infection and potential morbidity. The pylorus-preserving pancreaticoduodenectomy (PPPD), sometimes referred to as the Traverso-Longmire surgery or PPPD, has gained favour recently, particularly among european surgeons. The fundamental benefit of this procedure is that it should in principle preserve the pylorus and proper stomach emptying. Data on whether pylorus-preserving pancreaticoduodenectomy increases the likelihood of gastric emptying are contradictory. When the tumour does not involve the stomach and the lymph nodes along the gastric curvatures are not enlarged, a Pylorus - preserving pancreatoduodenectomy (PPPD) should be performed because it improves patients' ability to regain weight after a Whipple's (pancreaticoduodenectomy + hemigastrectomy) procedure. The pylorus preserving pancreaticoduodenectomy technique is related with faster operation time and less intraoperative blood loss, necessitating less blood transfusion, compared to the usual Whipple procedure. The two approaches result in the same post-operative complications, hospital mortality, and survival rates.

Medical indications

Most frequently used as a curative procedure, pancreaticoduodenectomy is used to treat periampullary cancer, which includes cancer of the bile duct, duodenum, ampulla, or head of the pancreas. The en bloc resection of these many components is necessary due to the single blood supply of the pancreas, duodenum, and common bile duct. Chronic pancreatitis, benign pancreatic tumours, cancer that has spread to the pancreas, multiple endocrine neoplasia type 1, and gastrointestinal stromal tumours are a few other reasons for pancreaticoduodenectomy.

Pancreatic cancer: The only possibly curative treatment for pancreatic malignant tumours is pancreaticoduodenectomy. However, about 15%-20% of pancreatic cancer patients are candidates for the Whipple procedure because the majority of patients present with metastatic or locally advanced unresectable disease. Neoadjuvant chemotherapy, which tries to reduce the tumor's size and improve the chances of a full resection, may be followed by surgery. With post-operative mortality rates dropping from 10% to 30% in the 1980s to fewer than 5% in the 2000's, pancreaticoduodenectomy problems and deaths have become less frequent.

Ampullary cancer: The lining of the ampulla of Vater gives rise to ampullary carcinoma.

Duodenal cancer: The duodenal mucosa's lining is where duodenal cancer develops. The second section of the duodenum, where the ampulla is located, is where the majority of duodenal malignancies start to develop.

Contraindications

Metastatic illness in the abdomen or close-by organs is a strict no-no for the operation. These are most frequently located in the liver, on the peritoneum, and on the omentum. Surgeons will inspect the abdomen at the beginning of the procedure after gaining access to see if there are metastases. Another option is to have a diagnostic laparoscopy, which is a distinct surgery that involves inserting a tiny camera through a tiny incision to view the abdomen. This could avoid the patient from having to have a significant abdominal incision if the initial stage of a

Correspondence to: Chen Yim, Department of Urology, Guangdong Medical University, Zhanjiang, China, E-mail:Chenyim@au.cn

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pancreaticoduodenectomy were to be postponed owing to metastatic disease. Major vessel encasement, such as that of the superior mesenteric artery, inferior vena cava, or celiac artery, is another contraindication.