

Totally Laparoscopic Pancreaticoduodenectomy: Technical Notes

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Abstract

Introduction: Laparoscopic pancreaticoduodenectomy is still rarely adopted due to its inherent complexity. We hereby present our experience of laparoscopic pancreaticoduodenectomy focused on technical notes.

Technical description: A 5 trocars technique is used. Vision is provided by a 30° scope with 4K technology for the demolitive phase and 3D for the reconstructive phase. The right colic flexure is mobilized and an extensive Kocher maneuver is carried out exposing the inferior vena cava and left renal vein. The gastric antrum is resected with a mechanical stapler. The common hepatic artery is identified behind the superior pancreatic margin; lymphadenectomy of stations 7, 8, 9, 12 a and b is performed, until the gastroduodenal artery is cleared from the lymphatic tissue; a bull-dog clamp is placed to interrupt the arterial flow through the gastroduodenal artery, in order to exclude aberrant vascularization of the liver from the SMA. The common hepatic duct is transected just above the cystic duct. The pancreas is sectioned with monopolar energy, dividing the main pancreatic duct 2-3 mm distal to the parenchymal transection line with cold scissors, as to leave a stump that will facilitate the duct-to-mucosa anastomosis then the first jejunal loop is sectioned. A complete dissection of the mesopancreas is performed, moving from a caudal to cephalad fashion. Prior to perform the pancreatico-jejunal anastomosis, a fistula risk score based on pancreatic parenchymal texture, tumor type, Wirsung diameter, intraoperative blood loss is assessed. The pancreatico-jejunal anastomosis is carried out using prolene and pds sutures. The end-to-side hepaticojejunosomy is performed about 10 cm distant from the pancreaticojejunostomy. The side-to-side gastrojejunosomy is performed using a 60 mm linear stapler.

Conclusion: Laparoscopic pancreaticoduodenectomy is a demanding procedure affected by high morbidity rates. The standardization of the technique could lead the way to reduce such rates and favor its adoption.

Key words: total laparoscopic pancreaticoduodenectomy, laparoscopic pancreaticoduodenectomy, advanced minimally invasive surgery, pancreatic surgery, pancreatic cancer