



Total Venous Control and Vein-to-the-Right Superior Mesenteric Artery Approach in Robotic Pancreatoduodenectomy

Madeline B. Torres, MD¹, Jessica E. Maxwell, MD, MBA¹, Rebecca A. Snyder, MD, MPH¹, Hop S. Tran Cao, MD¹, Michael P. Kim, MD¹, Ching-Wei D. Tzeng, MD¹, Jeffrey E. Lee, MD^{1,2,3}, Matthew H. G. Katz, MD¹, and Naruhiko Ikoma, MD, MS¹

¹Department of Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX; ²Department of Office of the Chief Operating Officer, The University of Texas MD Anderson Cancer Center, Houston, TX; ³Department of Cancer Network, The University of Texas MD Anderson Cancer Center, Houston, TX

ABSTRACT

Background. Robotic pancreatoduodenectomy is an increasingly accepted alternative for the treatment of pancreatic ductal adenocarcinoma (PDAC).¹ However, the ability to perform a meticulous robotic-assisted superior mesenteric artery (SMA) dissection to obtain a margin-negative resection remains unknown.² PDAC within the head of the pancreas (HOP) that involves the superior mesenteric vein (SMV) and portal vein (PV) requires total venous control (TVC) and a ‘vein-to-the-right’ (or anterior artery-first) approach to SMA dissection to minimize venous congestion and operative blood loss.^{3–5} Here, we demonstrate a robotic pancreatoduodenectomy with TVC and a ‘vein-to-the-right’ approach.

Methods. A 70-year-old woman with cT2N0M0 HOP PDAC with lateral SMV involvement and right gastroepiploic vein occlusion underwent robotic pancreatoduodenectomy after neoadjuvant chemotherapy. After transecting the pancreas, we achieved TVC by dividing the small venous tributaries and encircling the SMV, splenic vein, and PV. We then proceeded with a ‘vein-to-the-right’ approach. The inferior pancreatoduodenal arteries were divided to minimize HOP inflow and decrease specimen bleeding. Once the specimen was dissected off the periadventitial plane of the distal SMA, the SMV dissection was carefully performed using a partial side-wall vein resection using a vascular stapler.

Results. Total operative time was 7.5 h and estimated blood loss was 25 mL. The patient recovered well postoperatively and was discharged on postoperative day 3. Final pathology exhibited a 2.4 cm, moderately to poorly differentiated adenocarcinoma with negative margins (ypT2N1, 2/38 lymph nodes positive).

Conclusion. For tumors with lateral vein involvement, robotic pancreatoduodenectomy can be safely performed via TVC and a ‘vein-to-the-right’ approach.

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N. Ikoma, MD, MS
e-mail: nikoma@mdanderson.org

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