

# Laparoscopic gastrectomy for distal gastric cancer

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**Abstract:** This video presents a standard D2 laparoscopic-assisted gastrectomy for distal gastric cancer. The lymph node dissection of each station is performed as required in the standardized procedure of distal gastrectomy, followed by the Billroth II anastomosis through a small incision.

**Key Words:** Laparoscopy; radical gastrectomy; lymph node dissection



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Laparoscopic radical gastrectomy is indicated in patients with early gastric cancer. Laparoscopic-assisted D2 radical gastrectomy is the standard surgical approach in the management of such condition, particularly in early gastric cancer. For lymph node dissection, the second station should also be included during the treatment of early gastric cancer.

The patient is a 54-year-old man admitted for “repeated epigastric pain for one year which worsened for one week”. Physical examination revealed no positive signs or palpable lymph node enlargement. Laboratory tests showed no abnormalities in the blood testing. Gastroscopy showed a 1 cm ulcer at the gastric angle, and indicated reflux esophagitis. Gastroscopic pathology showed mucosal erosion at the gastric angle complicated with high-grade intraepithelial neoplasia, and localized cancer.

In this video (*Video 1*), as the early gastric cancer is not readily located via palpation with laparoscopic instruments, an additional astroscope is used to identify the lesion and mark it with Hemo-lock on the gastric wall. After the tumor is located, the greater omentum is separated from the middle part of the transverse colon using an ultrasonic scalpel along the left half of the transverse colon towards the splenic flexure. After the omentum at the splenic flexure is divided, the separation is continued towards the splenic hilum, and the left omental vessels are clamped at the roots with Hemo-lock clips and cut. Station number 4sb lymph nodes are dissected, and the gastrosplenic ligament is then divided with Ligasure. The first branches of the short gastric vessels are transected, and station number 4sa

lymph nodes are dissected. The greater omentum is then separated along the greater curvature. Station number 4d lymph nodes are dissected. After dissection of the left side, the greater omentum and the right half of the anterior lobe of the transverse mesocolon are separated towards the right side to expose the gastrocolic trunk, and the right gastroepiploic vein at the root is transected. This process is completed with caution to avoid injury to the anterior superior pancreaticoduodenal vein. Following separation of the right omental vein, the right omental artery is divided upwards along the surface of the pancreatic head. The head of the pancreas is located at a significantly higher position in this patient, so caution is needed to avoid mistaking the pancreas for lymph nodes during dissection. Therefore, the posterior wall of the duodenum and the pancreatic capsule are first separated to expose the gastroduodenal artery before dividing the right gastroepiploic artery. The right gastric artery is transected at the root, and station number 6 lymph nodes are dissected. The division is continued towards the anterior edge of the pancreas along the surface of the gastroduodenal artery to expose the common and proper hepatic arteries. With further division in the space over the surface of the gastroduodenal artery using separation forceps, the right gastric vein is cut with an ultrasonic scalpel. The right gastric artery is then exposed at the anterior region of this space and transected. Station number 12a lymph nodes are dissected. Station number 8a lymph nodes are dissected along the surface of the common hepatic artery. The celiac trunk and the splenic artery are



**Video 1** Laparoscopic gastrectomy for distal gastric cancer

exposed, and stations number 9 and 10 lymph nodes are dissected. The gastric coronary vein and the left gastric artery are cut at their roots. Station number 7 lymph nodes are then dissected. Tissue in the posterior pancreatic space is divided along the upper edge of the pancreas. Fat and lymph nodes posterior to the common and proper hepatic arteries are dissected, and stations 8p and 12p are removed en bloc. After the hepatogastric ligament is separated along

lower edge of the liver, the tissue over the surface of the proper hepatic artery is divided through to the upper edge of the duodenum. Stations number 5 and 12 lymph nodes are dissected. Stations 1 and 3 are then dissected along the lesser curvature. The duodenum is transected using an ENDO-GIA stapler. A central incision of 6 cm is made to the upper abdomen, and the gastric wall 5 cm away from the ulcer is transected. Billroth II anastomosis of the stomach to the jejunum is conducted.

Postoperative pathology showed moderately to poorly differentiated adenocarcinoma at the gastric angle (superficial depressed type), with invasion to the submucosa. No tumor tissue was present in the surgical margin. Metastases were found in lymph nodes of the lesser curvature (2/11), but not in those of the greater curvature (0/5). No metastasis was detected in the other lymph nodes (0/6). pTNM stage: (T1bN1M0, IB).

The patient got off the bed after the gastric tube was removed the second day after surgery, and began normal diet from the third day. He was discharged on the sixth day after surgery.

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