

Total Gastrectomy with D2 Nodal Dissection, Roux-en-Y Reconstruction, and Feeding Tube Jejunostomy

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Indication

- Carcinoma of the stomach

Essential Steps

1. Make an upper midline incision.
2. Explore the abdomen and confirm pathology and stage.
3. Separate the greater omentum from the transverse colon.
4. Infrapyloric nodal dissection and ligation of the right gastroepiploic vessels.
5. Suprapyloric nodal dissection and ligation of the right gastric vessels.
6. Divide the duodenum.
7. Dissect nodes along the common hepatic artery.
8. Dissect nodes around the celiac axis and the splenic artery.
9. Ligate left gastric artery at the celiac axis.
10. Ligate short gastric vessels and divide the gastrosplenic ligament.
11. Dissect nodes around the distal esophagus.

12. Transect esophagus and remove specimen.
13. Identify the ligament of Treitz and identify a loop of upper jejunum.
14. Create Roux-en-Y limb.
15. Roux-en-Y esophagojejunostomy.
16. *Feeding jejunostomy*.
17. Closed suction drains in vicinity of the hiatus.
18. Position the nasogastric tube.
19. Check hemostasis.
20. Close the abdomen.

Note These Variations

- Stapled or sutured duodenal stump closure
- Antecolic or retrocolic passage of Roux-en-Y jejunal limb
- Stapled or sutured esophagojejunal anastomosis
- Creation of jejunal pouch
- Feeding tube jejunostomy
- Drain

Complications

- Injury to the replaced left or accessory left hepatic artery
- Anastomotic leak
- Injury to the esophagus

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- Duodenal stump leak
- Small bowel obstruction caused by feeding jejunostomy
- Pancreatitis or pancreatic fistula

Template Operative Dictation

Preoperative Diagnosis Adenocarcinoma of the stomach (T_, N_, M_ stage __)

Procedure Total gastrectomy with D2 nodal dissection, Roux-en-Y reconstruction, and *feeding tube jejunostomy*

Postoperative Diagnosis Same

Indications This ___-year-old *male/female* developed symptoms of *early satiety/gastrointestinal bleeding/epigastric pain* and on evaluation was found to have gastric adenocarcinoma. A total gastrectomy was indicated for treatment. *A feeding jejunostomy was placed for enteral nutrition.*

Description of Procedure An epidural catheter was placed by anesthesia prior to the start of the operation. Time-outs were performed using both preinduction and pre-incision safety checklists to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. The patient was placed in the supine position and general endotracheal anesthesia was induced. Preoperative antibiotics were given. A Foley catheter and a nasogastric tube were placed. The abdomen was prepped and draped in the usual sterile fashion.

A vertical midline incision was made from the xiphoid to just below the umbilicus. This was deepened through the subcutaneous tissues and hemostasis was achieved with electrocautery. The linea alba was identified and incised and the peritoneal cavity entered. The abdomen was explored. *Adhesions were lysed sharply under direct vision with Metzenbaum scissors.* No liver metastases or peritoneal involvement was seen. Wash cytology was obtained in the upper

abdomen. The tumor was *limited to the stomach / found in (detail locations)*. The stomach was mobile and the decision was made to proceed with total gastrectomy.

The spleen was gently elevated from the diaphragm using abdominal laparotomy pads. The greater omentum was dissected from the transverse colon first, by starting in the avascular plane near the splenic flexure. The dissection was advanced toward the hepatic flexure and advanced along the anterior leaf of the transverse mesocolon into the lesser sac toward the head of the pancreas until the point at which the accessory right colic vein inserts into the right gastroepiploic vein. The right gastroepiploic vein was ligated just proximal to the insertion of the accessory right colic vein with 3-0 silk ligatures. The right gastroepiploic artery was identified, ligated with 3-0 silk ligatures, and reinforced with a silk stick tie. All lymphatic tissue in subpyloric area was separated from the duodenal wall toward the pylorus.

Next, the peritoneum was incised on the left side of the hepatoduodenal ligament and the origin of the right gastric artery was exposed. The artery was ligated with 2-0 silk ties and divided. All of the nodal tissue in the suprapyloric area was separated from the duodenum and included in the specimen. The pylorus was identified. The duodenum was then transected 1 cm distal to the pylorus with a GIA stapler blue load. The staple line was over-sewed with 3-0 silk Lembert stitches. The stomach was reflected in a cephalad manner, which exposed the head of the pancreas, the common hepatic artery, and the origin of the celiac axis. The nodal tissue adjacent to the upper border of the pancreas along the common hepatic artery was dissected using a combination of sharp and blunt methods. The lesser omentum was then divided toward the GE junction with electrocautery just proximal to its attachment with the inferior border of the liver. *No replaced / accessory left hepatic artery was noted or replaced / accessory left hepatic artery was noted and preserved.* The retroperitoneal dissection was advanced along the right crus of the diaphragm to the esophageal hiatus. Nodal tissue covering the splenic artery was dissected from the splenic hilum toward the

origin of the left gastric artery. *The posterior gastric artery was identified, dissected, ligated, and divided.* The left gastric vein and the left gastric artery were identified. The left gastric vein was ligated with 3-0 silk sutures. The left gastric artery was then ligated with silk sutures and further reinforced with a silk stick tie.

If a replaced or accessory left hepatic artery is identified: *The origin of the left gastric artery was completely cleared of soft tissue up to the origin of the replaced / accessory left hepatic artery, and the distal portion of left gastric artery was ligated and divided.* Dissection was advanced along the anterior surface of the aorta to the esophageal hiatus leaving all the soft tissue to the stomach side.

Attention was turned to the greater curvature of the stomach. The origin of the left gastropiploic artery from the splenic artery was identified, ligated with silk suture, and reinforced with a silk stick tie. The short gastric arteries were serially ligated at the hilum of the spleen. The entire fundus was mobilized from the retroperitoneum toward the esophagus.

Retractors were placed on the left lateral lobe of the liver and attention was directed to the esophageal hiatus. An incision was made in the peritoneum overlying the abdominal esophagus. The esophagus was gently mobilized with sharp and blunt dissection and encircled with a Penrose drain. The anterior and posterior vagus nerves were identified, ligated, and divided. A clamp was applied just proximal to the GE junction and a purse string suture was placed. The anterior wall of the esophagus was opened and a ___ mm circular stapler anvil was placed within the esophagus. The purse string suture was tied around the esophagus and the posterior wall of the esophagus was divided. The stomach and nodal tissue were removed en bloc.

The ligament of Treitz was identified and the small bowel was transected approximately 20 cm distal to it with the linear cutting stapler. An arcade in the small bowel mesentery was ligated and transected to allow for further mobilization of the small bowel. The distal limb of this jejunum was brought up to the esophagus in an antecolic / through a window in the transverse

mesocolon in a retrocolic fashion and brought to lie comfortably without tension or torsion adjacent to the esophagus.

The circular stapler was then introduced into the open end of the jejunum and the spike driven out through the antimesenteric border approximately ___ cm from the end. The stapler was assembled and fired. Intact donuts were retrieved. The open end of jejunum was then closed with a linear stapler.

If sutured: *Single layer esophagojejunostomy was created with interrupted 3-0 absorbable sutures.*

The anastomosis was inspected and found to be intact. An NG tube was guided through the anastomosis and placed distally.

The Roux-en-Y jejunojunction was then constructed 45 cm distal to the esophagojejunostomy.

If stapled: *The two limbs of jejunum were approximated with 3-0 silk sutures. Enterotomies were made and the stapler was introduced and fired. The staple line was checked for hemostasis and the enterotomies closed with a linear stapler / in two sutured layers.*

If sutured: *A hand-sewn two-layered end-to-side anastomosis was made between the jejunal limbs using running 3-0 Vicryl and Interrupted silk. The anastomosis was checked for integrity and found to be widely patent in all three directions.*

If feeding jejunostomy constructed: *A purse string suture was placed within the jejunum 20 cm distal to the jejunojunction anastomosis. An enterotomy was made at the center of the purse string stitch. A ___ French red Robinson catheter was placed within the lumen of the jejunum, and the purse string suture was tightened. 3-0 silk Lembert sutures were placed to create a Witzel tunnel and bury the jejunostomy tube without compromising the lumen. Next, a stab incision was made to the left of the midline incision. The red rubber catheter was grasped and brought out through the stab incision. The jejunum was sutured to the anterior abdominal wall with four-quadrant sutures through the anterior abdominal wall and seromuscular bites on the jejunum. These were securely tied, affixing the jejunum and jejunostomy tube up to the anterior abdominal wall. The*

exit site of the tube was sutured with 3-0 nylon sutures and the jejunostomy feeding tube was secured in place.

Hemostasis was checked. *One closed suction drain was placed in the vicinity of the hiatus and brought out through a stab wound. The fascia was closed with a running suture of ____.* The

skin was closed with skin staples / subcuticular sutures of ____ / other. A debriefing checklist was completed to share information critical to postoperative care of the patient. The patient tolerated the procedure well and was taken to the postanesthesia care unit in stable condition.