Laparoscopic Sleeve Gastrectomy

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Indications

- Morbid obesity with body mass index greater than 40 kg/m^2.
- Morbid obesity with BMI greater than 35 kg/m^2 with serious comorbidities.
- Select cases of obesity (BMI 30–34.9 kg/m^2) with serious metabolic disease.
- Super obesity (BMI >50 kg/m^2) as a first stage of the duodenal switch.
- Patients should have been evaluated in a multidisciplinary bariatric surgical program and deemed appropriate for such surgical intervention.

Essential Steps

1. Place the patient in the supine position; split-leg position is optional.
2. Reverse Trendelenburg positioning helps expose the esophagogastric (EG) junction.
3. Initial port placement is through the umbilicus. In some "super" obese patients, placing an optical port under direct vision may be easier than using an open approach. In such patients the initial port placement is about 20 cm below the xiphoid process to the left side of the midline.
4. Place two other ports in the left upper quadrant of the abdomen and one in the right upper quadrant. The operation can be performed with three ports. Additional ports may be needed for difficult cases.
5. Retract the left lateral segment of the liver.
6. Identify the pylorus.
7. Identify the anterior vagal branches along the lesser curvature and crow's feet.
8. Start sealing and dividing all the vessels along the greater curvature of the stomach from a point around 2–6 cm proximal to the pylorus and all the way to the angle of His.
9. Lift the stomach and divide all posterior attachments to the pancreas.
10. Expose the EG junction well to ensure there are no missed hiatal hernias. Excising the EG junction fat pad aids in the exposure.
11. Ask the anesthesiologist to place an orogastric tube or bougie (34–42 Fr) into the esophagus and lying along the lesser curve to the antrum.
12. Alongside the tube, staple and divide the stomach in a vertical fashion aiming to the angle of His. Approximately 60–120 ml of gastric volume should remain.

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13. We recommend firing the first stapler from the right-sided port and the rest from the umbilical port.
14. Use appropriate thickness cartridges as the stomach is thickest in the antrum and decreases in thickness as you proceed toward the cardia.
15. Align these staple lines parallel. Avoid crossed staple lines and avoid twisting. Avoid narrowing the sleeved stomach at the incisura angularis.
16. The last stapler fire at the angle of His is parallel to the esophagus. Avoid leaving a "dog ear," and keep <1 cm of the stomach at this level.
17. Hemostasis at the staple line is improved with staple line reinforcement, oversewing, or clips.
18. Extract the stomach in a bag.
19. Test the "sleeved" stomach by filling it with methylene blue or by intraoperative endoscopy.
20. Close the fascia at the gastric extraction with nonabsorbable sutures.

Note These Variations

- Hiatal hernias can be repaired simultaneous with the sleeve gastrectomy.
- An alternate approach is to perform the stapling and division of the stomach first followed by gastric resection.

Complications

- Bleeding
- Staple line leak with resultant abscess or fistula
- Pulmonary embolism
- Gastroesophageal reflux

Operative Dictation

Preoperative Diagnosis Morbid obesity

Procedure Laparoscopic sleeve gastrectomy

Postoperative Diagnosis Same

Indications This ____-year-old *female/male* had morbid obesity with *BMI above 40 kg/m^2/BMI above 35 kg/m^2 with significant comorbidities* and failure of medical weight loss.

Description of Procedure Time-outs were performed using both preinduction and pre-incision safety checklist 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. The patient received 5,000 units of heparin subcutaneously prior to induction. The abdomen was prepped and draped in the usual sterile fashion. A 20-mm incision was made through the umbilicus and the fascia was exposed. Under direct vision a 15-mm port was placed and CO2 pneumoperitoneum at 15 mmHg was established. Then under direct vision, two 12-mm trocars were inserted in the left upper quadrant along the midclavicular and anterior axillary lines. A 12-mm port was placed in the right upper quadrant at the midclavicular line just above the umbilical level.

The operating table was placed in reverse Trendelenburg position, and the left lobe of the liver was retracted cephalad using a fixed retractor "Nathanson" through a 5-mm subxiphoid incision to expose the esophageal hiatus.

Using an energy device (LigaSure®, Harmonic Scalpel®, or Ultrasonic Shears®), the lipoma of the gastroesophageal junction was excised and the peritoneum overlying the cardia was incised, and the plane between the cardia and left crus of the diaphragm was bluntly opened to expose the left diaphragmatic crus. Then the pylorus was identified, and a point 2–6 cm proximal to the pylorus along the greater curvature of the stomach was marked with cautery. Then all the vessels along the greater curvature and all the short gastric vessels were sealed and divided completely freeing up the greater curvature and the fundus of the stomach. The stomach was lifted up and all posterior attachments to the pancreas were divided sharply. Then a 40-Fr orogastric tube was placed

by the anesthesiologist and oriented toward the antrum snug along the lesser curvature. Alongside the tube the stomach was stapled and divided sequentially in a vertical fashion heading toward the angle of His. We used a total of six cartridges 60 mm in length with 4.8-mm staple height. The staple line was reinforced with a running 2-0 PDS serosa-serosa imbricating sutures. Intraoperative endoscopy revealed no areas of stenosis and no leak along the staple line. The stomach was placed in a plastic bag and was extracted from the umbilical port which was widened a bit. Then the ports and liver retractor were removed under vision. The abdomen was deflated. The fascia at the umbilical port site was closed with three interrupted nonabsorbable sutures. The wounds were closed with 4-0 monocryl continuous subcuticular sutures. A debriefing checklist was completed to share information critical to postoperative care of the patient.

The patient tolerated the procedure well and left the operating room in good condition.