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SURGERY FOR OBESITY AND RELATED DISEASES

Video case report

A sleeve gastrectomy blast: how long should the bariatric patient fast?

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The primary site of surgery in bariatric surgery is the stomach, so a preoperative fasting plan can be crucial to prepare the primary site of surgery. Here the authors report a case in which a 12-hour fast was not enough to evacuate the stomach before a sleeve gastrectomy procedure.

A 39-year-old obese diabetic patient was scheduled for a laparoscopic sleeve gastrectomy at the authors' institution after a 12-hour fast. The patient had a body mass index of 43.5 kg/m^2. On entry to the abdomen, it was noticed that the stomach was distended. Dissection was started at the greater curve. Distention of the stomach compromised the working space. Several attempts to evacuate the stomach were attempted but failed. Finally, after completion of the sleeve gastrectomy and on extraction of the resected stomach, it inadvertently burst into the peritoneal cavity leaving food debris. The peritoneal cavity was cleared and irrigated with normal saline. Two drains were placed: one near the gastric pouch and the other in the pelvis.

The patient's postoperative course was stable, with a daily drain output of 300–400 mL of seropurulent discharge. The patient developed fever; however, on day 3, one drain was removed and patient was discharged. Six days later the pelvic drain was removed. The patient had an uneventful postoperative course thereafter. A 12-hour fasting protocol might not be enough before bariatric surgery, particularly in morbidly obese, diabetic patients. Moreover, bag extraction of the resected stomach could be highly recommended in selected cases.

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Sleeve gastrectomy has been gaining popularity, and it has become the most commonly performed bariatric procedure at U.S. academic centers [1]. Patients opting for bariatric surgery are considered to be a special subset of patients, with a high incidence of co-morbid conditions. With the continually increasing obesity epidemic, there has been a hand-in-hand increase in the prevalence of diabetes mellitus (DM) [2,3]. Such co-morbidities in obese patients results in a higher risk for developing gastroparesis [4]. This could potentially have a great impact on gastric emptying before the surgical procedure. In this video, a potential complication that can arise while performing sleeve gastrectomy on a patient with a relatively full stomach is shown. We herein report a case in which a 12-hour fast was not enough to evacuate the stomach before a laparoscopic sleeve gastrectomy procedure.

Case presentation

A 39-year-old male with morbid obesity (138 kg) and a body mass index of 43.5 kg/m^2 was scheduled for sleeve gastrectomy at the surgical department of the authors' institution. The patient had been suffering from hypertension (1 year) and type 2 DM for a long time (8 years). The patient's blood sugar was controlled by oral hypoglycemic drugs. The patient did not express any clinical signs of delayed gastric emptying nor was the patient objectively tested for gastroparesis. After careful preoperative work up, the patient was scheduled for sleeve gastrectomy. Given the patient's history of DM, the patient was instructed to fast for 12 hours.

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Brief description of the procedure

The patient was positioned in a 15° reverse Trendelenburg position with both arms placed in abduction and with a split leg position. The surgeon stood between the legs, the camera operator stood on the right of the patient, and the assistant stood on the left of the patient. Elastic stockings were applied and pressure points were padded. Access to the peritoneum was achieved through a closed pneumoperitoneum technique using a Veress needle with a pressure setting of 14–15 mm Hg. A 5-trocar technique was used, and the trocar placements were as follows: one 10-mm trocar above and slightly to the right of the umbilicus for the 30° laparoscope; one 5-mm trocar in the right upper quadrant at the right midclavicular line for the surgeon's left hand; one 5-mm trocar on the left anterior axillary line 3–4 cm below the costal margin for the surgeon's assistant; one 5-mm trocar below the xiphoid process for liver retraction; and one 10-mm trocar in the left upper quadrant for the surgeon's right hand.

Before access to the peritoneal cavity, the anesthesiologist routinely inserts a nasogastric (NG) tube to deflate the stomach for safe peritoneal access. After NG tube insertion, the anesthesiologist reported a minimal amount of gastric fluids in the bag, thus confirming the correct NG tube placement and complete deflation of the stomach. Once this was confirmed, port insertion was commenced. Upon entry of the abdominal cavity, it was noticed that the stomach was a little inflated; however, the greater curvature mobilization was started and the anesthesiologist was prompted to replace the NG tube with another wide bore tube. The sleeve gastrectomy was then started with complete mobilization of the gastric greater curve using ultrasonic dissection (Sonoscision, Covidien, Norwalk, CT). During the greater curvature mobilization, we started experiencing difficulties in dissection, especially as we got closer to the fundus, and this was due to the fullness of that part of the stomach. After failure of stomach deflation with a wider NG tube, the anesthesiologist inserted the wide bore calibration tube (40Fr) in a final attempt to completely evacuate the stomach and hence facilitate the final dissection of the gastrosplenic ligament. This final attempt did not completely evacuate the stomach. However, it reduced the stomach size allowing complete mobilization of the stomach all the way to the angle of His.

Once mobilization was complete, the stomach was inspected. A perforation was found at the greater curve that was assumed to be due to an excessive traction by one of the graspers or an unnoticed thermal injury. The content coming out of the perforation was thick and viscid. Drainage was attempted by using a 5-mm suction tube through the perforation; however, after a few seconds of suction, it got clogged. We decided to suture the perforation to prevent soiling, and we continued the operation.

The first 2 firing were completed with a linear cutting stapler with 60-mm, 4.8-mm stapler loads (endoGIA, Covidien, Norwalk, CT); 3.5-mm stapler loads (endoGIA, Covidien, Norwalk, CT) were then used to complete the division of the stomach along the calibration tube. No buttress material was used. As we got closer to the fundus, the fullness of the stomach was hindering the proper alignment of the staple line; therefore, a wide perforation was created in the distal part of stomach that was being resected in an attempt to allow insertion of a 10-mm suction tube. Again it did not help much, and it became clogged after a few seconds of suction. Sequential firing of the stapler was completed up to the angle of His. After completion of the stapling, we covered the staple line with a running 3-0 Prolene (Ethicon, Inc., Cincinnati, OH) suture. Finally, inspection of the integrity of the gastric pouch was checked and a leak test using methylene blue was performed.

After completion of the sleeve gastrectomy and on extraction of the resected stomach, the specimen inadvertently burst into the peritoneal cavity leaving food debris and gastric contents. We routinely extract the resected stomach without the use of an endoscopic bag. To our surprise, we noticed full solid particles of undigested food along with plenty of gastric fluids. At this moment, we understood why all our suction attempts failed to evacuate the stomach.

To this point, operative time was 1 hour and 30 minutes. It then took another 3 hours to completely evacuate the abdominal contents of all the food debris that was spread from above the liver and all the way down to the pelvis. We then irrigated the peritoneal cavity with 3 liters of normal saline until all the effluent came out clear. Two drains were then placed: one along the gastric staple line and another in the pelvis. We did not wish to convert the patient to open surgery, because we believed we could easily complete the evacuation of the food debris laparoscopically and thereby reduce the risk of wound infection and its complications.

Postoperative follow-up

The patient was kept on broad spectrum antibiotics and was monitored closely. His postoperative course was stable despite developing fever (38°C) on day 2, although he did have daily drain output of 300–400 mL of seropurulent discharge (pelvic drain). Otherwise, his vital signs were stable. On day 3, one drain (near the gastric pouch) was removed, and the patient was discharged and was instructed to record daily the drain output. Six days later, the patient was seen at the outpatient clinic. Wounds were clean without any signs of inflammation, and he had no fever over the past 5 days. The patient was tolerating well his liquid diet. The pelvic drain had a minimal output of serous fluid and was removed. The patient had an uneventful postoperative course thereafter.

Discussion

Fasting is an integral part in the preparation of patients undergoing elective surgical procedures. The primary

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