

Clinical Science

Routine upper gastrointestinal swallow studies after laparoscopic sleeve gastrectomy are unnecessary



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UGI study

Abstract

BACKGROUND: Laparoscopic sleeve gastrectomy has gained popularity among bariatric surgeons. The purpose of this study was to evaluate the usefulness of early upper gastrointestinal (UGI) contrast studies in the detection of postoperative complications.

METHODS: Radiographic reports were reviewed from April 2006 to January 2013. During that time, 161 patients underwent laparoscopic sleeve gastrectomy. All patients were submitted to UGI examination on postoperative day (POD) 1.

RESULTS: Among the 161 patients who underwent UGI, no contrast leaks were found on POD 1. Three patients (1.9%) developed stapler line leaks near the gastroesophageal junction, which were diagnosed on PODs 3, 4, and 10. Gastroesophageal reflux in 5 patients (3.1%) and delayed gastroesophageal transit in 10 patients (6.2%) were detected.

CONCLUSIONS: The results of this study show that UGI series on POD 1 cannot assess the integrity of the gastric remnant. Early UGI series are not required as routine procedures in all operated patients. Computed tomographic swallow studies should be performed in patients who postoperatively develop clinical signs and symptoms of complications such as tachycardia, pain, or fever.

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In recent years, laparoscopic sleeve gastrectomy (LSG) has been introduced into the armamentarium of bariatric procedures. Several publications have shown a percentage of excess weight loss approaching that attained with Roux-en-Y gastric bypass at short-term and midterm follow-up.¹⁻⁷ The fact that LSG has been considered simple and easy has led to its adoption by a large number

of surgeons. Compared with gastric bypass and biliopancreatic deviation, it may seem to involve less risk, yet its complications can be even more severe than those of other techniques. Because of the long staple line, LSG is associated with several complications.

One of the dreaded complications after LSG is a gastric leak, most commonly occurring at the upper staple line near the gastroesophageal junction. This staple line leak, if not identified and treated immediately and aggressively, may lead to abdominal sepsis, which might progress either to chronic gastric fistula or to multiple-organ failure and potential death.⁸⁻¹¹

Postoperative upper gastrointestinal (UGI) contrast studies after laparoscopic bariatric procedures are often

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performed routinely to evaluate for leaks or stenoses.^{12,13} The purpose of this retrospective study was to assess the usefulness of early UGI examination in the detection of postoperative complications.

Methods

A retrospective review of our prospectively collected database was used to evaluate all patients who underwent LSG between April 2006 and January 2013. LSG was performed laparoscopically using a 4-trocar technique as follows: A 14 mm Hg pneumoperitoneum with carbon dioxide is established. We use a 30° video laparoscope. Using a 5-mm LigaSure (Covidien, Dublin, Ireland) and a 5-mm flexible grasper, the greater curvature of the stomach is mobilized by dividing the gastric branches of the right and the left gastroepiploic vessels close to the stomach. Starting from 6 cm proximal to the pylorus, the gastrocolic and the gastrosplenic ligaments are divided up to the angle of His. The mobilized portion of the greater curvature of the stomach is then taken by a 5-mm flexible grasper and pulled to the right side in the direction of the lower surface of the left hepatic lobe. By lifting the stomach, the liver is automatically pulled up. This retraction of the liver facilitates further exposure of the angle of His. It is important to identify and mobilize the angle of His with exposure of the left crus of the diaphragm to enable the complete resection of the fundus. Retrogastric adhesions are taken down with the LigaSure to allow complete mobilization of the stomach, to achieve a symmetric design of the sleeve, and to exclude the fundus from the gastric sleeve. Once the stomach has been completely mobilized, a 36-Fr orogastric tube is inserted downward into the pylorus and placed parallel to the lesser curvature. This allows for calibration of the size of the gastric sleeve and prevents constriction at the gastroesophageal junction, enabling uniform diameter of the entire stomach. Gastric transection is started 6 cm proximal to the pylorus, leaving the antrum and preserving gastric emptying.¹⁰ A long laparoscopic reticulating 60-mm XL Endo-GIA stapler (Echelon Flex Endopath Stapler; Ethicon Endo-Surgery, Cincinnati, OH) is fired consecutively along the length of the 36-Fr orogastric tube until the angle of His was reached. Two sequential golden 1.8-mm cartridges are used to divide the antrum, followed by 3 or 4 sequential blue 1.5-mm cartridges for the remaining gastric corpus and fundus. The mentioned staple height of the cartridge is the closed height. Care must be taken not to narrow the stomach at the incisura angularis. It is important to inspect the stomach anteriorly and posteriorly to avoid redundant posterior stomach.

Approximately 80% of the stomach is separated. The entire staple line is inspected for bleeding. Bleeding necessitates the prompt placement of clips along the line of bleeding. No intraoperative leak test is used. One closed suction drain is used routinely. The resected stomach is extracted through the umbilical incision without a specimen endobag. The fascial defect is closed with 0/0 absorbable sutures.

A UGI contrast swallow study with water-soluble contrast media (50 mL Gastrografin; Bracco SpA, Milan, Italy) was performed on postoperative day (POD) 1 (Fig. 1), and if the results were negative, the patient was put on a liquid diet for 1 more day. Patients were discharged once they were able to maintain hydration and manage pain with oral analgesics. Patients were routinely placed on proton pump inhibitors (eg, pantoprazole 40 mg) once a day for 1 month. Routine follow-up with attention to electrolyte and vitamin levels was recommended every 6 months after surgery.

Definition and diagnosis of leakage

Determining the time of appearance, leaks were classified according to Csendes et al¹⁴ as being detected early (POD 1 to 3), intermediate (POD 4 to 7), or late (POD \geq 8).

Clinical suspicion of leakage

Gastric staple line leak was suspected if the patient had postoperative clinical signs and symptoms such as tachycardia (heart rate \geq 100 beats/min), pain (visual analogue scale score \geq 5), or fever \geq 38.5°C.

Results

A total of 161 patients (124 women, 37 men) underwent LSG at our institution. The mean age was 46 years (range,

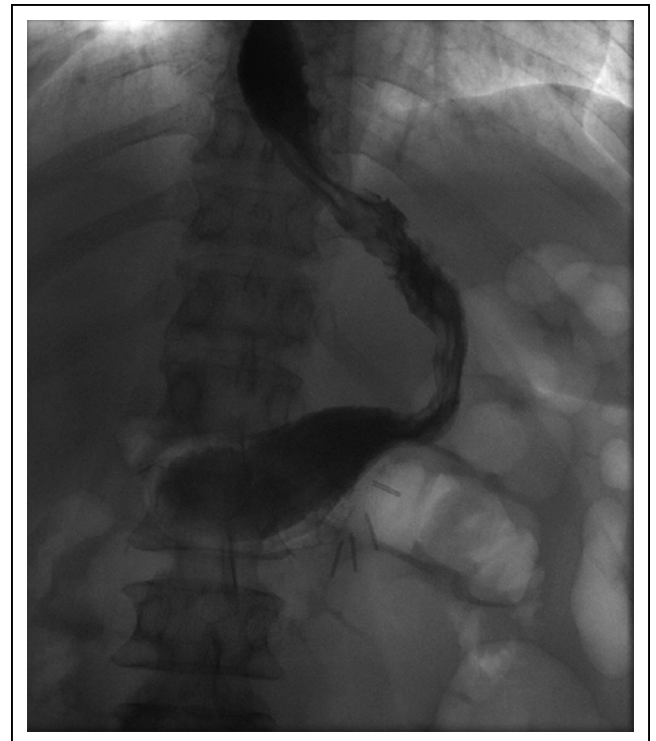


Figure 1 UGI examination with water-soluble contrast media was performed on POD 1.

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