

LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS WITH SINGLE TRANSUMBILICAL INCISION - GELPOINT®

Bypass gástrico laparoscópico por incisão única transumbilical – Gelpoint®

João Caetano **MARCHESINI**, João Batista **MARCHESINI**, Giorgio A. P. **BARETTA**,
Gustavo R.A. **CASTRO**, José Alfredo **SADOWSKI**, Wagner H. **SOBOTTKA**, Rafael **FEISTLER**

From Marchesini Clinic, Curitiba, PR, Brazil

Correspondence:

João Caetano D. Marchesini
E-mail: jcmarchesini@gmail.com

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INTRODUCTION

The innumerable advantages of laparoscopic gastric bypass have stimulated the development of new and less invasive laparoscopic techniques, such as single-incision laparoscopic surgery (SILS). This novel approach provides the introduction of multiple laparoscopic instruments through a single incision at the umbilicus or at a place near the operated structure.¹

SILS performed via an umbilical incision produces a better cosmetic outcome than does the traditional (five to seven ports) laparoscopic gastric bypass and probably improves postoperative outcome, because it may diminish trauma to the abdominal wall and peritoneum^{2,3}. Recently, SILS has been gradually adopted in bariatric surgery. Saber et al. reported the first series of patients treated with single-incision laparoscopic sleeve gastrectomy.⁴⁻⁶

CASE REPORT

The case involved a 50-year-old female patient, with a body mass index of 41 kg/m² and previous abdominal cosmetic surgery, underwent single-incision gastric bypass via a “transumbilical” approach.

The patient was placed in the supine decubitus position with arms abducted on a split-leg operating table, with the surgeon between the legs and the assistant on the right side of the patient. She received prophylactic antibiotics (Cefalexin – 2g IV), deep venous thrombosis prophylaxis with intermittent pneumatic compression boots and low-molecular weight heparin. The procedure commenced with open entry into the abdomen through a 2.5 cm umbilical incision, and a

GelPoint® (Applied Medical, Rancho Santa Margarita, CA, USA) was inserted. The device consisted of two principal components: GelSeal® and an Alexis® wound retractor (Applied Medical, Rancho Santa Margarita, CA, USA). GelSeal® is a silicon cover that prevents CO₂ leaks with an inflation port, and its shape allows a better mobilization between the ports and laparoscopic instruments. The wound retractor has an internal ring, external ring and a plastic sleeve that holds the wound open. Three laparoscopic ports of 12 mm, 10 mm and 5 mm were inserted through the GelSeal® (Figure 1); another two ports of 2 mm were inserted through the abdominal wall (epigastric and upper left quadrant), for retraction of the left segment of the liver and traction of the greater curvature of the stomach.



FIGURE 1 – Single port with GelPoint®

The procedure was undertaken with a 10 mm, 45°, Karl Storz Hopkins II® endoscope (Karl Storz Endoskope, Tuttlingen, Germany). With the patient in steep reverse Trendelenburg position for visualization of the hiatus. The first step is the creation of an 8 cm gastric pouch, measured from the esophagogastric angle. A perigastric dissection was carried out with the use of the SonoSurg® (Olympus Optical, Tokyo, Japan) and in this case with the preservation of the branches of the vagus nerves (Latarget). Once the opening was made, a 45 mm blue-cartridge Endo Gia® (Covidien, Norwalk, CT, USA) was fired and the first transverse section of the stomach was done. A 32 Fr orogastric probe (Fouchet) was brought

forward filling the pouch and was used for calibration; the stapler was applied as close as possible to the probe to ensure the small volume of the pouch made with the use of two 60 mm Endo Gia®; the final appearance was a long (8 cm) and narrow pouch.

The intestinal step of the surgery was made with a biliary limb 120 cm long and alimentary limb of 100 cm. An enteroenteric anastomosis was made with a 45 mm white cartridge Endo Gia®, and the final closure of the gap was performed with a hand-made continuous suture with PDS II 3.0® (Ethicon, Somerville, New Jersey, USA). The mesenteric gap was closed with a hand-made suture with Ethibond Excel 2.0® (Ethicon, Somerville, NJ, USA). A gastroenteric anastomosis was made with a 45 mm blue cartridge Endo Gia® and the hole was closed with a hand-made, double-layer suture with PDS II 3.0®.

Finally, the patency and the tightness of the gastroenteric anastomosis were tested with methylene blue, showing no extravasations. The umbilical fascia was closed with Vicryl 1® (Ethicon, Somerville, NJ, USA) and the skin with Monocryl 4.0® (Ethicon, Somerville, NJ, USA). Final aspect is showed in Figure 2.



FIGURE 2 – Incision final aspect

The procedure was completed without any complications. The patient was extubated and transferred to the recovery area in stable condition. The surgical time was 94 minutes. The patient was discharged after 48 h, on liquids.

DISCUSSION

Was describe here the first laparoscopic Y-en-Roux gastric bypass via single transumbilical port with GelPoint performed in Latin America^{4,6,7}.

Merchant et al.⁷ related the true disadvantages of single-incision laparoscopic surgery, the leak of triangulation between the ports, the leak of pneumoperitonium and the collision of the laparoscopic instruments. The GelPoint® offers a better external platform, just like the abdominal wall, allowing

triangulation of the laparoscopic instruments. It also offers the possibility of unlimited articulation of the instruments, making it possible to use conventional laparoscopic instruments.

The potential advantages of this technique derive from the use of a single incision, thereby reducing trauma to the abdominal wall.¹ Placing the single port at the umbilicus eliminates any visible scar. Contrary to Notes, no deliberate viscerotomy is created, eliminating the need for visceral closure and potential associated complications. SILS follows the same surgical principles of standard open or laparoscopic procedures, offering similar results and outcomes with the advantage of reduced trauma to the abdominal wall or any other abdominal viscera.

De la Torre et al.⁸ say that there have been no reports showing diminished postoperative pain or even faster recovery compared to conventional laparoscopic surgery. Probably, those findings are due to excessive fascia traction, resulting in similar pain as in conventional laparoscopic surgery. It's believed that with the GelPoint®, fascia traction is not involved, resulting in less postoperative pain.

Huang et al.⁹ report that tissue retraction has been an obstacle in the development of single-incision surgery and efforts are being made to create various materials and techniques to overcome that difficulty. Many authors have described techniques to retract the liver with sutures or drains which may damage hepatic tissue^{6,9}. It is described here the use of a 2 mm port with a live retractor because it was considered a safer method, avoiding possible hepatic lacerations and bile leaks. For that same reason, another 2 mm port was used to retract other abdominal structures.

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