

VIDEO

Needlescopic sleeve gastrectomy: pushing the boundaries of the standard technique

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Abstract

Background Laparoscopic sleeve gastrectomy (LSG) is the most common bariatric surgery performed worldwide. Improvements in LSG have been suggested to achieve better weight loss or to lessen the complications rates. We propose a change in the standard technique to privilege the use of thinner instruments, the needlescopic sleeve gastrectomy (NSG).

Methods A 40-year-old female, BMI 40, with no previous abdominal surgery was selected for a NSG. She was placed in a semi-sitting position with the surgeon standing between the legs. Pneumoperitoneum was created through open laparoscopy; 5 trocars were inserted in standard position for laparoscopic gastric surgery. We have used one 12 mm trocar in the navel for a 5 mm scope and for stapling the stomach; one 5 mm trocar for impedance coagulator and also for the scope during the stapling process, and three 3 mm trocars for liver retraction, left hand manipulation,

and greater curve exposition. Surgical techniques are basically the same as for a standard LSG until the moment of stapling the stomach, when the 5 mm scope is changed to the right hand trocar. Stapling can be done through the umbilical port, parallel to the lesser curvature, in contact with the calibration tube. After stapling, hemostasis was achieved by bipolar coagulation, application of titanium clips, and absorbable suture. The 12 mm umbilical orifice is closed after extraction of the resected stomach.

Results Operative time was 76 min. There was no perioperative complication. Recovery was uneventful and patient was discharged at post operative day 2. Pain was considered minor by the patient. One month after surgery, cosmetic results were very convincing.

Discussion There are several proposed technical modifications in LSG. They can influence complication rates or weight loss like the length of antrum resection, the size of Fouchet tube, or the reinforcement of staple line [1–4]. Besides that other concepts regarding reduction of size or number of trocars have also been applied. LSG has been performed with fewer trocars, using for example special designed internal retractors or even the posterior part of

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the dissected stomach to replace the liver retractor and its trocar [5, 6]. Single port is another well-known possibility [7, 8], but mini-laparoscopy or needlescopic SG is still not well explored in our opinion. We believe that this technical alternative proposed in this video keeps the standards of care and safety of conventional LSG. There is no change in the position of the surgeon, not even the trocars. Specially designed needlescopic instruments show enough strength to be used in bariatrics and allow the surgeon to perform all the routine maneuvers from dissection to suturing. LSG can be done by mini-laparoscopy with a short adaptation period, previewing a short learning curve with no increase in the complications rate.

Conclusion NSG is feasible in selected patients and with few modifications in the standard technique. There might be a benefit in terms of pain. Further studies with large series are necessary to observe these potential benefits.

Keywords Bariatric surgery · Sleeve gastrectomy · Laparoscopy

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Compliance with ethical standards

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