

Use of self-locking knots in running intestinal bariatric sutures

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Abstract

Bariatric suturing is a complex part of most bariatric operations. Self-locking sliding knots and Aberdeen-De Cushieri knots are very important tools to facilitate suturing.

Introduction

Laparoscopic bariatric surgery, the making of various types of anastomosis is often complex. We present a standard way of realizing the knots that shortens the operative time using continuous running suture and self-locking sliding knots.

Objective

Our philosophy in complex laparoscopic bariatric surgery is to divide any hollow organs with staplers and make anastomosis always manually. We use six ports (Figure 1), only one of them 12 mm in right para-rectal and allows each of the three surgeons involved to do one of the three sutures manually.

Hand suturing is a complex maneuver that must be performed carefully, with appropriate instruments and provides security in the preparation and/or reinforcement of anastomosis and space closure, using monofilament sutures to reduce the cost and time of intervention and a correct preparation of the threads facilitate implementation.

Method

The scrub nurse makes a simple running noose [1,2] sliding knot (Figure 2), which passes into the abdomen and by simply pulling

the thread the knot is made. For many years we have been using the self-sliding knot in all type of sutures, in all type of tissues, both in open closures of fascias and in surgery of hollow organs, open and laparoscopic, without any incident or failure.

The Aberdeen -De Cushieri knot [3], that we already present in the SECO-2004 Meeting Valladolid, ends all suture lines. They use running continuous sutures, either to reinforce staple lines or to perform complete anastomosis.

This Videos shows how both type of knots are made in the following conditions: 1) Over-suture of duodenal stump in the Duodenal Switch (LDS); 2) Over-suture of the staple-line in the Sleeve-forming gastrectomy (SFG), 3) Jejunum-jejunal anastomosis of the LDS; 4) duodenal-ileal anastomosis in the LDS and is also used to close the mesenteric defects.

1. <https://www.youtube.com/watch?v=mh5gDPF5zhg>

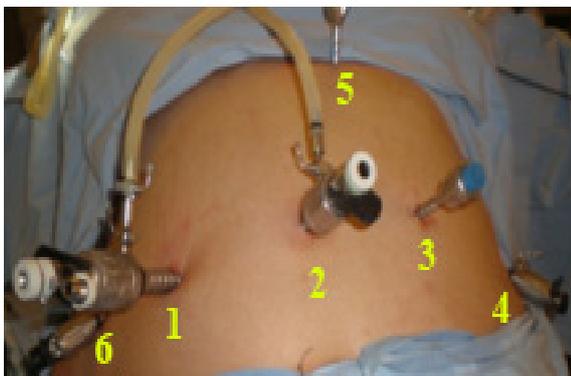


Figure 1. Situation of the ports.

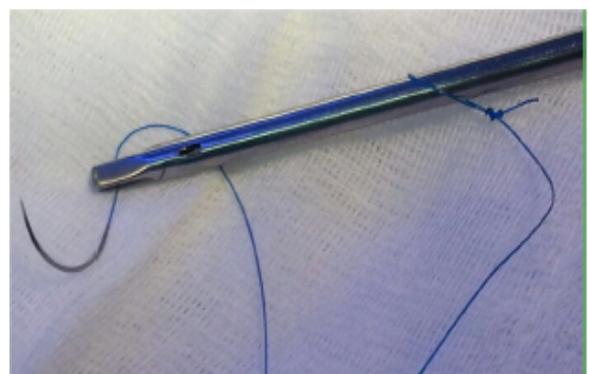


Figure 2. Needle-holder with the knot already made.

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2. <https://www.youtube.com/watch?v=g0MV16pVNeg&feature=youtu.be>

3. https://www.youtube.com/watch?v=pUh2_MO-96Q&feature=youtu.be

Discussion

Protecting the SFG staple line to avoid bleeding and leakage is very important. Ferrer [4] cites our original work of 2005 [5,6] as we used a continuous monofilament suture to reduce the possibility of leakage and bleeding. We used to initiate the starting point with a double knot at the end of the thread, with two clips, that helped on the radiological control post-op. We were avoiding this high intra-abdominal knots in an awkward area.

We start the division of the stomach at the pylorus level. We devascularize at least 1 cm distal on the duodenum, and this allows us to 1) Have a free duodenum and the use the first stapler on the pylorus; 2) Pulling pylorus with a clamp that goes from right upper quadrant and aligns all to the lesser curvature above the incisura angularis and 3) This clamp is re-applied progressively in the smaller curvature in a straight line up to the esophagus gastric junction (EGJ) avoiding twists and leaving a very narrow, but straight sleeve from pylorus to the EGJ.

Daes [7] was the first to describe in 2013, and should have the credit, the use of a preformed sliding but not self-locking knot suture and Albanopoulos [8] copied the idea but the preformed knot was a non-sliding. Baltar [9] and Ferrer [10] have published work on the continuous knotted suture.

The work of our team [1,2] is the first to our knowledge that uses the self sliding-locking knot that is easily tied and it seems very appropriate to Daes [11]. We also use the greater omentum to cover the entire staple line with two purposes: 1) Cover a possible leak in the EGJ and 2) Avoid sleeve torsion anywhere on its route.

An interesting experimental study by Rogula [12] of this year shows that the continuous running suture has greater resistance to sleeve punctures and leaks. Sroka [13] has also found that the continuous suture has a lower incidence of bleeding.

Sánchez-Santos [14] has already shown that weight losses were higher with Antrectomy. Obeidat [15] demonstrated in a prospective study this year that weight loss is greater when Antrectomy is added.

Conclusion

These Videos show how to perform the self-sliding locking-knot

to initiate continuous running sutures and the use of the Aberdeen-De Cuschieri knot to finish them.

References

- Serra C, Pérez N, Bou R, Baltasar A (2014) Sliding self-locking first stitch and Aberdeen knot in suture reinforcement with omentoplasty of the laparoscopic gastric sleeve staple line. *Obes Surg* 24: 1739-1740. [Crossref]
- Baltasar A, Bou R, Bengochea M, Serra C, Pérez N (2015) Laparoscopic gastric sleeve, subtotal antrectomy and omentoplasty. *Obes Surg* 25: 195-196. [Crossref]
- Stott PM, Ripley LG, Lavelle M A (2007) The ultimate Aberdeen knot. *Ann R Coll Surg Engl* 89: 713-717. [Crossref]
- Ferrer-Márquez M, Belda-Lozano R, Ferrer-Ayza M (2012) Technical controversies in laparoscopic sleeve gastrectomy. *Obes Surg* 22: 182-187. [Crossref]
- Baltasar A, Serra C, Pérez N, Bou R, Bengochea M, et al. (2005) Laparoscopic sleeve gastrectomy: a multi-purpose bariatric operation. *Obes Surg* 15: 1124-1128. [Crossref]
- Serra C, Pérez N, Bou R, Bengochea M, Martínez R, et al. (2006) [Laparoscopic sleeve gastrectomy. A bariatric procedure with multiple indications]. *Cir Esp* 79: 289-292. [Crossref]
- Daes J (2013) Self-locking first stitch in suture reinforcement of the laparoscopic gastric sleeve. *Obes Surg* 23: 794-795. [Crossref]
- Albanopoulos K, Flessas I, Zografos G, Leandros E (2013) Self-locking first stitch in suture reinforcement of the laparoscopic gastric sleeve. *Obes Surg* 23: 796-797. [Crossref]
- Baltar J, Baamonde de la Torre I (2013) Letter to Self-locking stitch in suture reinforcement of the laparoscopic gastric sleeve. *Obes Surg* 23: 2109. [Crossref]
- Ferrer M, Solvas MJ, Belda R, Moreno PM, Ferrer MA (2013) The noose. A new resource in intra-corporeal laparoscopic suturing. *BMI* 1.1.5: 17-19. [Crossref]
- Daes J (2014) Letter to Sliding Self-Locking First Stitch and Aberdeen Knot in Suture Reinforcement with Omentoplasty Of The Laparoscopic Gastric Sleeve Staple Line. *Obes Surg* 24: 10. [Crossref]
- Rogula T, Khorgami Z, Bazan M, Mamolea C, Acquafresca P, et al. (2015) Comparison of Reinforcement Techniques Using Suture on Staple-Line in Sleeve Gastrectomy. *Obes Surg* 25: 2219-2224. [Crossref]
- Sroka G, Milevski D, Shteinberg D, Mady H, Matter I (2015) Minimizing Hemorrhagic Complications in Laparoscopic Sleeve Gastrectomy-a Randomized Controlled Trial. *Obes Surg* 25: 1577-1583. [Crossref]
- Sánchez-Santos R, Masdevall C, Baltasar A, Martínez-Blázquez C, García Ruiz de Gordejuela A, et al. (2009) Short- and mid-term outcomes of sleeve gastrectomy for morbid obesity: the experience of the Spanish National Registry. *Obes Surg* 19: 1203-1210. [Crossref]
- Obeidat F, Shanti H, Mismar A, Albsoul N, Al-Qudah M (2015) The Magnitude of Antral Resection in Laparoscopic Sleeve Gastrectomy and its Relationship to Excess Weight Loss. *Obes Surg* 25: 1928-1932. [Crossref]