The noose. A new resource in intra-corporeal laparoscopic suturing


Surgical Service. Torrecárdenas Hospital. Almería. Manuferrer78@hotmail.com

Summary: Bariatric surgery requires significant training and advanced laparoscopy domain mainly in the intra-corporeal anastomosis. We present the resources used by our group is a "noose" that takes place at the beginning of the thread and allows early suture quickly and safely.

Keywords: Bariatric Surgery; continuous Suture; Noose

Over the years, many techniques have emerged for the treatment of morbid obesity: restrictive, malabsorptive and mixed. Possibly, at present, in bariatric surgery the most commonly used our country are laparoscopic vertical gastrectomy (LVG) (or gastric sleeve) and Roux-en-Y-gastric bypass Roux (RYGB). The use of minimally invasive surgery in the treatment of obesity has brought many benefits to maintain the same results in terms of weight loss: earlier recovery, less postoperative pain, and a drastic reduction of parietal complications in the immediate and late postoperative periods [1-3].

The training of bariatric surgeons requires significant training in advanced laparoscopic surgery [4] (mainly when performing mixed or malabsorptive techniques). To the difficulty of the technique itself, difficulties of suturing and intra-corporeal anastomosis in morbidly obese patients are added by the thickness of subcutaneous adipose tissue that often limits the movement of the ports, large steatosis livers most patients have that shrinks good field exposure, the thickness of the mesos, the risk of bleeding while displacing mesentery and omentum, etc. Hence, some authors consider that there is a long learning curve (of over 100 cases) during which intra-and postoperative morbidity may be increased [5-7].

Due to the patient inherent conditions and the difficulty of the surgical technique, there are two learning areas attributable to laparoscopic surgery: first, you need to have experience in the treatment of obese patients, and secondly, and the surgeon must have experience in advanced techniques of reconstructive laparoscopic surgery [8]. In 1993 the American Society for Metabolic and Bariatric Surgery (ASMBS) advised that "laparoscopic obesity surgery should be performed only by experienced surgeons in advanced laparoscopic surgery techniques, and familiar with the technical complexity of obesity surgery and treatment experts obese patients".

The Spanish Surgical Association of (ACS) through its section of Morbid Obesity and the Spanish Society for Surgery of Obesity and Metabolic Diseases (SECO) have collaborated in developing a training program establishing certain requirements to be met by a surgeon for obtaining such competition diploma program. This program began in 2009 and consists of 5 phases which include theoretical, practical and professional experience supervised [9].

Possibly the technique that requires higher skill in performing bariatric surgeries are intracorporeal anastomosis and sutures. Despite that laparoscopy started years ago and is a standard technique in many interventions of surgical practice (cholecystectomy,
gastro-esophageal reflux disease, appendectomies, colectomies or anterior resections even ...), there are very few that require the handling intracorporeal sutures. Hence, the majority of laparoscopic surgeons who are not dedicated to bariatric surgery, have no special skill in handling this type of sutures techniques.

Training in bariatric surgery the domain of advanced laparoscopic surgery techniques, such as intracorporeal anastomosis is a must. The beginning of a continuous suture, in the suture reinforcement, as in the preparation of an anastomosis, begins with the completion of a first knot.

We have used different resources for suturing, since the beginning of our experience, aiming for the safest, effective, efficient and easily reproducible: a single starting point at the beginning of the continuous suture, a fixed loop created at the end of thread, on the barbed suture makes it unnecessary to perform knots at the ends, or add a clip to the end of the suture. Among all the approaches used, the one offer more benefits is the realization of a “noose”. This resource is used routinely at the beginning of the continuous running suture, facilitating the fixation of the suture and providing a secure and watertight both at the LVG or LRYGB as:

- In LVG, after performing gastrectomy, we use from the beginning an inverting running suture. Although not all authors advocate its use [10]), our team, like Baltasar et al [11], routinely perform a running sero-serous suture with 2-0 monofilament, with the idea of controlling bleeding and reduce the rate of gastric fistulas without increasing the cost of the process.
- In RYGB the suture is used for the realization of the gastro-enteric anastomosis and entero-enteric. Both are latero-lateral and Tri-staple endo-staplers used. A running inveeting 2-0 monofilament suture is used to close both inlets.
- The scrub nurse is responsible for carrying out those noose-knots and have them ready for suturing time. We routinely use the 2-0 monofilament, which facilitate the displacement of the node as explained below. The first step is to accurately measure the length of yarn we need (about 12 cm) (Fig. 1a).

Once the length is measured, at one end three row eyelets will be performed, one of which is larger than the rest (Fig. 1b). The opposite end of the thread is inserted through the three eyelets (Fig. 1c). Once the whole thread pass, between the thumb and index finger, and through the larger eye and is pulled at both ends (Fig. 1d).

In this way the suture thread has a noose in the end. Intra-operatively the eye of the loop can be expanded to facilitate the passage of the needle (Fig. 1e). Once past, pulled from both ends so that the loop is closed and sealed (Fig. 1f).

For better understanding see an instructional video on http://coloprocto.wordpress.com/2012/04/02/sutura-continua-y-nudos-en-cirugia-laparoscopica/.

The advantages offered by this application are: 1) It facilitate the initiation of the suture as it avoids the need to make a knot at the beginning of areas where sometimes the visibility is poor or too the allow mobility to tying a regular knot; 2) It maintains the predetermined length of thread (in regular tying the surgeon may pull a hand too much and fall short on the other for the rest of the suture; 3) Maintains a proper seal to allow closure of the loop when pulled from both sides, this knot is ideal for working in parallel, if port placement is not in a suitable angle.
The “noose” is another resource to be considered in bariatric surgery [12,13] as well as other specialties requiring advanced laparoscopic surgery, as it facilitates the beginning of intra-corporeal sutures securely.

**Bibliografía**


