

Surgical Technique

Stapled Roux-en-Y Anastomosis: An Illustrated Technique

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A technique is described to create a wide enteroenterostomy or Roux-en-Y anastomosis.

Key words: Small bowel anastomosis, surgical technique, Roux-en-Y, bariatric surgery, morbid obesity

Introduction

Roux-en-Y anastomosis has been utilized in a number of surgical procedures. The anastomosis can be either hand-sewn or stapled. In either case, there is always a concern about narrowing at the outflow limb. Zollinger described the basic pattern of stapled anastomosis after a small bowel resection.¹ To summarize Zollinger's description, stay sutures are placed at the outer edges, on the anti-mesenteric aspect of the small bowel, at the proposed anastomosis. An opening is created at the end of the small bowel and a GIA linear cutter stapler is fired. The opening in the small bowel, through which the GIA stapler was fired, is then closed using a TA stapler. Similarly, for a side-to-side enteroenterostomy, as well as a Roux-en-Y anastomosis, after placement of the stay sutures, the GIA stapler is fired directed proximally, and the opening of the small bowel is closed utilizing a TA stapler. In the methods described above, the reason for utilizing a TA stapler is to minimize the chance of narrowing the anastomosis.

We hereby describe a method of creating a stapled

Roux-en-Y anastomosis (side to side enteroenterostomy), which is completed utilizing only a GIA linear cutter stapler. The benefits of this technique are that it creates a much larger anastomosis, in addition to being less expensive, since it only utilizes a GIA stapler. In addition, the same technique can be utilized during a laparoscopic procedure. This technique can be used for the jejunojejunostomy anastomosis in a gastric bypass operation.

Technique

We place stay sutures on the outer borders of the proposed anastomosis, on the anti-mesenteric aspect of the small bowel. The small bowel is then opened *in the middle* of the two stay sutures (Figure 1A), unlike the method described by Zollinger which is at the end. A GIA stapler is then fired in one direction (Figures 1B and C). The stapler is then fired in the opposite direction, taking care to assure that the second firing of the stapler crosses the first firing on the back wall of the anastomosis (Figure 1D). We assure this by placing an Alice clamp on the back wall staple-line before firing the stapler in the opposite direction. After firing staplers directed both proximally and distally, the opening in the small bowel wall is grasped with a row of Alice clamps in transverse fashion and the GIA stapler is again fired (Figure 1E). This assures a transverse closure of the staple-lines, which is as wide as approximately twice the diameter of the small bowel lumen (Figure 1F).

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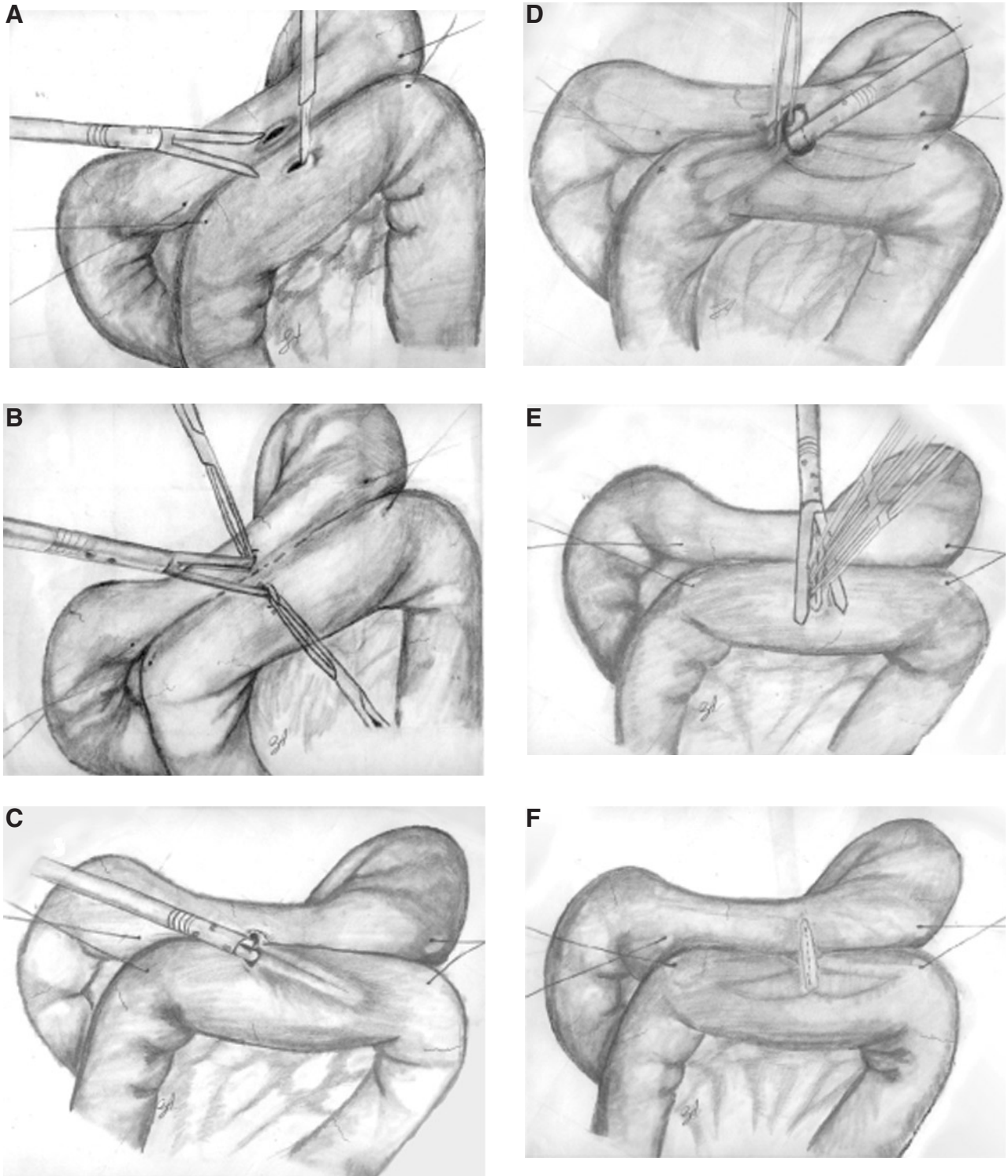


Figure 1. Stapled enteroenterostomy, creating a wide anastomosis. **A.** Stay sutures placed at outer edges of the proposed anastomosis; **B.** Opening created *half-way* between the stay sutures; **C.** Proximal row of staples fired. **D.** Distal row of staples fired. Make sure that the proximal and distal staple-lines cross each other. To assure this, before firing the second staple row (proximal or distal), the first staple-line needs to be grasped by an Alice clamp for the second staple-line to cross it. This is to prevent a gap on the back wall of the staple-lines. **E.** The opening of the anterior wall is grasped between Alice clamps transversely and stapled. **F.** Completed anastomosis.

Comment

We have hereby outlined a way of creating a stapled anastomosis, utilizing only a linear cutter stapler, without compromising the lumen size. Our technique provides a wide anastomosis, and allows transverse closure of the stapler openings without fear of narrowing. We have performed more than 380 cases of open duodenal switch operations, in which we have utilized the above-described technique for our jejuno-ileostomy anastomosis. We have no clinical or radiological evidence of any

obstruction at the anastomotic site. In fact, in the few patients that we have re-operated on later for incisional hernia repair, we have found a widely patent anastomosis.

Reference

1. Zollinger & Zollinger Atlas of Surgical Operations, 7th Edn. 1993: 104-5.

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