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Surgeon at work

“Inverted corner” for sleeve gastrectomy

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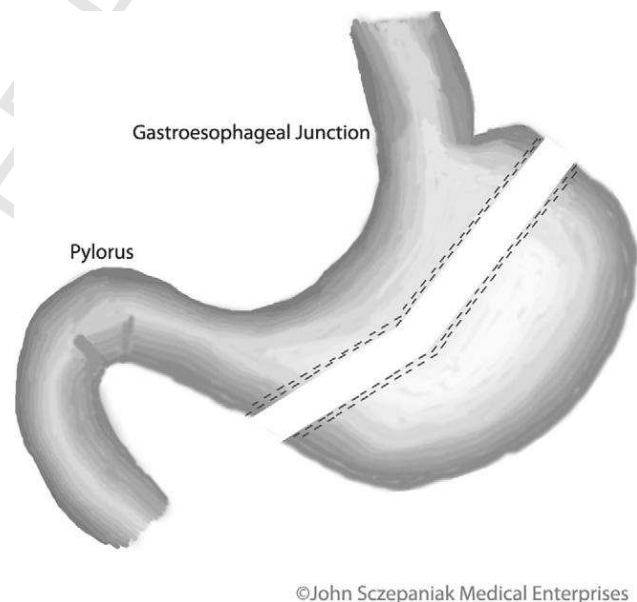
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Sleeve gastrectomy is an appealing weight loss operation. Patients lose approximately 60% of their excess weight in 1 year [1], and weight regain, which is a complication of all procedures, is amenable to a variety of different surgical approaches [2,3]. Moreover, long-term complications, such as bowel obstruction, iron deficiency, and marginal ulcer after gastric bypass or erosion or slippage after adjustable gastric banding, seem unlikely or impossible. Leakage after sleeve gastrectomy occurs in approximately 2% of cases [4,5] and is difficult to treat [6,7]. Heartburn, affecting 25–40% of patients after surgery, is a lesser, but clearly troublesome, side effect of sleeve surgery [7]. We have developed a modification to the usual surgical technique that we believe minimizes both leaks and heartburn.

Approximately 3 of 4 leaks developing after sleeve gastrectomy occur near the gastroesophageal junction [7,8]. The suggested causes include the relative thinness of the stomach wall near the esophagus [9] and the potential for distal obstruction, particularly near the “crow’s foot” [8]. It has been suggested that the gastric transection and staple line should be completed a short distance lateral to the gastroesophageal junction to reduce the occurrence of a leak (Fig. 1) [8,10]. However, this means increasing the sleeve diameter in that area and, according to La Place’s law, the tension on the wall is also increased and, by implication, the likelihood of a blowout and leakage is also increased. We have managed this problem by inverting the corner and sleeve for a length of 2 or 3 in., thereby doubling the thickness of the closure and narrowing the sleeve relative to its more distal diameter (Fig. 2). Because some of the blood supply to the stomach at the left gastroesophageal junction



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Fig. 1. Completed lateral staple line. This results in larger sleeve diameter in region proximal to gastroesophageal junction.

is through the fat pad at that location, we have left it intact whenever the necessity for adequate exposure permitted.

We create our sleeve alongside a 38F bougie and remove the bougie when we are inverting the corner and then reintroduce the bougie afterward to be confident of patency. We invert with a running 2-0 Prolene suture (Ethicon Endo-Surgery, Somerville, NJ) and then oversee the inversion with a second running suture to ensure that the “corner” does not slip out between stitches at some later time.

On radiography, the narrowing appears maximal just below the gastroesophageal junction (Fig. 3). We have had no leaks since initiating this technique, and we have also

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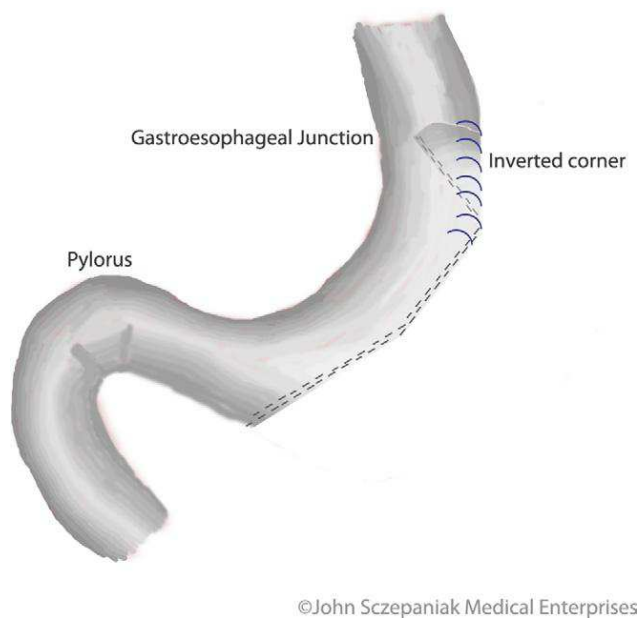


Fig. 2. Corner inversion showing corner of sleeve inverted into lumen of stomach and sewn into place (blue sutures).



Fig. 3. Abdominal radiograph with metal clip indicating gastroesophageal junction and proximal end of suture line. Another clip indicates distal end of suture line (red arrows).

noted a much reduced incidence of heartburn. Dysphagia from the narrowing produced has not been common and, when present, has been transitory and responsive to hyosciamine sublingual tablets.

Disclosures

The authors have no commercial associations that might be a conflict of interest in relation to this article.

Appendix

Supplementary data

The video associated with this article can be found, in the online version, at www.SOARD.org under "Multimedia Library."

Acknowledgment

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