42-Month Preliminary Follow-up of the Silastic Ring Vertical Banded Gastroplasty

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Background: The authors review preliminary experience with silastic ring vertical gastroplasty (SRVG).

Methods: Of 202 patients who underwent SRVG, 191 are more than 3 months postoperation and of these 165 were accessible for review.

Results: Pouch volume could not be readily measured. The TA90BN stapler was occasionally difficult to apply exactly at the angle of His. There was one subphrenic abscess, one gastric bleed, and one dehiscence. Vomiting occurred in eight patients who required reoperation: ring removal, three; cholecystectomy, one; conversion to vertical banded gastroplasty, one; conversion to Roux-en-Y gastric bypass, three. There was no mortality. Weight loss has been satisfactory to 42 months.

Conclusion: SRVG has been a relatively simple operation, with acceptable morbidity and weight loss thus far.

Key words: Morbid obesity, vertical gastroplasty, surgery, silastic ring.

Introduction

In its consensus statement on the role of gastrointestinal surgery for severe obesity, the National Institutes of Health in 1991 suggested that the dietary management of morbid obesity was ineffective and that gastrointestinal surgery could, in selected patients, play a positive role. The development of this surgical approach began in Iowa.

In 1965, during the controversy surrounding the development of the intestinal bypass procedure for the control of morbid obesity, Mason and Ito at the University of Iowa, drawing on the weight loss experience characteristic of the restriction of gastric resection procedures for duodenal ulcer disease, proposed and demonstrated the successful management of a patient with morbid obesity by the use of a gastric bypass operation. Recently Pories in a study of 600 patients for up to 14 years after Roux-en-Y bypass found permanent weight loss of about 100 lbs (45 kg).

During the two decades following his initial experience, Mason went on to refine his approach to morbid obesity with a series of operations culminating in an elegantly simple operation, the vertical banded gastroplasty (VBG). This provided a safe approach for these patients, and at the same time offered effective weight loss, while maintaining a physiologic pathway for nutrition and an easily accessible postoperative stomach (both radiologically and endoscopically). In addition this is a readily reversible procedure.

Various authors, Eckhout, Willbanks, Fabito and Laws worked to perfect a similar operation, making use of the lesser curvature pouch and reinforcing it with a silastic ring rather than a polypropylene mesh. Eckhout demonstrated that if a silastic ring was used but not covered with seromuscular sutures, its problematic erosion was seen infrequently. With these and other modifications, an apparently safe operation, silastic ring gastroplasty (SRVG) was developed. This procedure makes a laparoscopic reversal possible, but makes pouch measurement (a step which Mason has maintained is critical for consistency in these operations) more difficult than with the VBG.

Despite difficulty in measurement of the pouch, the author has found the SRVG to be a satisfactory approach to the morbidly obese in a small community hospital devoted to the operation, in a population of patients who subsequently have traveled considerable distances postoperatively.

Materials and Methods

During the last 42 months the author has used the SRVG in the management of 202 patients suffering...
from morbid obesity. Of the patients 191 were three months or more postoperation and of these 165 were accessible by phone or in person. Their report of weight loss and problems, if any, were collected and represent the substance of this report.

Under general anesthesia, the upper stomach is approached through an upper abdominal midline incision, typically 10 cm in length, passing from the left side of the xyphoid to just above the umbilicus. Exposure of the lesser curvature and gastroesophageal junction was facilitated with the patient in a cruciform/approximately 45% reverse Trendelenberg position. A four-posted Gomez instrument with rubber protected flexible-fingered liver and two lateral body wall retractors is used for exposure. The operation uses a four-row notched TA90BN stapler for the partition. A 2-0 polypropylene suture is passed through the gastric wall on the greater curvature side of the staple line 1 cm cephalad to the lower end of the staple line, it is threaded through a 4.3–4.5 cm length of 10F silastic tubing, and tied down over a 30–32 F bougie. The operation takes between 60 and 100 minutes.

Results

Major intraoperative complications included two instances of unplanned violation of the integrity of the body of the stomach (involving the gastric pouch); these were repaired with a two-layered closure and followed by successful completion of the SRVG. Some problems with the construction of the gastric pouch seem to be more subtle and harder to control. Although purported to achieve a position at the angle of His, positioning of the TA90BN may be problematic due to the required lesser curvature rotation and bulkiness of the bolt end (toe) of the instrument, making final positioning sometimes less than ideal (Figure 1).

Profound patient dissatisfaction developed in three patients postoperatively, associated with protracted vomiting, and prompted ring removal (with the staple line being left intact). The ring in these patients was approached laparoscopically, but in two it was necessary to convert the removal to an open procedure. Three patients developed prolonged vomiting and staple-line disruption and were converted to lesser curvature Roux-en-Y gastric bypass (RYGB). Three patients developed problems with their ring or pouch which were surgically corrected, with maintenance of their

Discussion

The silastic ring vertical gastroplasty has proved to be associated with little perioperative morbidity, and initially, for this surgeon, with an absence of mortality. Weight loss on early analysis appears to be satisfactory. Postoperative vomiting leading to further surgery is a definite problem and may be related to problems in calibration and construction of the gastroplasty pouch (as expressed by Mason). Due to short hospital stays (4 day average), short operative time (75 minute average) and low initial morbidity, it appears that this