# Chart Predicts Long-Term Bariatric Outcomes

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GRAPEVINE, TEX. — The use of a standardized longitudinal weight-loss chart reliably permits identification of underperforming patients within the first month after bariatric surgery, according to a data analysis of more than 1,200 patients.

"This project was inspired by the utility of pediatric growth charts. They allow monitoring of height and weight for any given age," Dr. Lindsey S. Sharp explained at the annual meeting of the American Society for Metabolic and Bariatric Surgery.

The gastric bypass surgery weight-loss chart can be used to target patients for interventions aimed at boosting their long-term outcomes. The chart was derived through retrospective analysis of prospectively collected data on 1,274 patients who underwent primary Roux-en-Y gastric bypass at Duke University, Durham, N.C., between 2000 and 2007.

The percentage of excess weight loss was determined for each patient at follow-up clinic visits scheduled for 1, 3, 6, 12, and 36 months. The purpose was to define the normal pattern of weight loss following gastric bypass, use that information to generate weight-loss nomograms, and then learn whether early weight loss predicts long-term success. It turns out that it does, according to Dr. Sharp of Duke.

According to the chart, a 12%-15% excess weight loss at the 1-month postoperative visit places a patient in the second quartile. The third quartile is a 16%-18% excess weight loss, while more than 18% excess weight loss is the fourth quartile.

At 12-month follow-up, most patients remained in the same weight-loss quartile they were in at 1 month post surgery. Being in the first weight-loss quartile at 1 month, with a 0%-11% excess weight loss, had a 39% positive predictive value for being in the first quartile at 12 months. The negative predictive value was 81%. Sixty-one percent of patients in the first quartile at 12 months, with a 15%-53% excess weight loss, were in the first or second quartile at 1 month.

Moreover, 72% of patients in the fourth quartile at 12 months, with a greater than 70% excess weight loss, were in the third or fourth quartile at 1 month. These trends continued at 36 months.

"The take-home message here is that, in general, patients who do well initially are likely to continue along that path, and those who have first-quartile weight loss at the first postoperative visit are at risk of having continued poor weight loss," Dr. Sharp explained.

Further analysis showed that an excess weight-loss velocity of 2% or more per week between the 1- and 3-month postoperative visits had a specificity of 90% for being above the first quartile for excess weight loss at 1 year.

"Our suggested algorithm for follow-up includes assessment of excess weight loss at the first postoperative visit. If patients are found to be in the first quartile, then they should be assessed for dietary, exercise, and psychological factors that could be modified. Frequent follow-up between the first- and third-month postoperative visits can be used to assess the success of the interventions using the excess weight-loss velocity. Hopefully, patients will improve their weight loss. In continuing to follow them, if they again drop down to the first quartile, you can institute new interventions," Dr. Sharp said.

He added that he and his Duke coinvestigators are designing a structured intervention protocol that includes pharmacotherapy, psychological support, treatment of comorbid anxiety or depression, exercise modification, and dietary management. The efficacy of the protocol will be examined in clinical trials.

Audience members hailed the surgical weight-loss nomograms as "a brilliant concept" and "excellent work," but they wondered whether the charts will perform equally well in their own patients. They noted that the charts were developed at a single center and haven't yet been validated in other populations. Dr. Sharp said that can be accomplished using existing gastric bypass surgery databases.

The charts will eventually be published in the journal Surgery for Obesity and Related Diseases. ■

# *Single-Incision Laparoscopic Banding Safe, But Not Suitable for All Patients*

GRAPEVINE, TEX. — Performing adjustable gastric band surgery entirely through a single laparoscopic incision is both technically feasible and safe. But does it offer any clinical advantages over the conventional five-port laparoscopic technique?

The answer is unclear. And it will have to come from a prospective randomized clinical trial, Dr. Ninh T. Nguyen said at the annual meeting of the American Society for Metabolic and Bariatric Surgery.

"Going from open surgery with a midline operation to laparoscopy is a huge jump with significant clinical benefit to the patient. When we jump from laparoscopy to single incision, I think the benefit is significantly less: a possible reduction in postoperative pain—not proven—and probably improved cosmesis," observed Dr. Nguyen of the University of California, Irvine, Medical Center.

Dr. Nguyen, who began doing adjustable gastric banding through a single 4-cm incision in the spring of 2008, presented a comparative study involving 23 patients who underwent the novel surgery and an equal number of controls who had conventional laparoscopic adjustable gastric banding (LAGB), the second most widely performed bariatric operation after gastric bypass.

The two groups in the study were matched for age, sex, and body mass index. Participants had a mean BMI of 40 kg/m$^2$. Operative time averaged 66 minutes in the conventional LAGB patients and 65 minutes in the single-incision group. Blood loss and length of stay were very similar as well. There were no early or late complications in either group. However, three patients (13%) in the single-incision group were converted intraoperatively to conventional LAGB, while none in the standard LAGB group were converted to another bariatric procedure.

"I have a low threshold for conversion to conventional laparoscopy if visualization is technically difficult," the surgeon explained.

Weight loss is the same in the two groups at this early point, with maximum follow-up of less than a year.

Dr. Nguyen emphasized that single-incision LAGB isn't for all patients. He won't offer it to patients with a history of any primary abdominal surgery, a hiatal hernia detected on his required preoperative upper GI study, an android body habitus, or superobesity.

**Exclude patients with primary abdominal surgery, a hiatal hernia, an android body habitus, or superobesity.**

**DR. NGUYEN**

The objective in single-incision gastric banding is to perform the entire operation through the standard 4-cm incision needed to place the bands in the abdomen, eliminating the other four conventional ports. It's technically demanding surgery. He considers single-incision laparoscopic appendectomy and cholecystectomy easier procedures to start with.

"You've got to get your instrumentation right. You've got to learn the hand-eye coordination. Single-site surgery is completely different from doing a conventional laparoscopic operation. There's instrument sword-fighting, and you have to find ways to avoid that," he explained.

He also provided practical tips in getting started with single-incision LAGB for audience members who said they're under growing pressure from patients and equipment reps to offer the procedure.

He recommended starting out by taking a single-incision endoscopy course—the American Society for Metabolic and Bariatric Surgery offers an excellent one, he noted—then doing a preceptorship with a surgeon who's accomplished in the procedure, followed by a proctorship, in which an experienced surgeon visits the trainee's practice and assists in several cases.

Dr. Nguyen disclosed that he is a consultant to Covidien and Gore & Associates Inc. ■

# Lap Banding Effective Even in Superobese

GRAPEVINE, TEX. — Proponents of other types of bariatric surgery often question whether laparoscopic adjustable gastric banding is a sufficiently potent weight-loss procedure in superobese patients, but outcomes at one bariatric surgery center attest to its effectiveness.

Among 2,909 patients who underwent LAGB at New York University Medical Center in the past 7 years, substantial, and indeed nearly identical, weight loss was achieved and maintained over time across all baseline body mass index categories, Dr. George Fielding reported at the annual meeting of the American Society for Metabolic and Bariatric Surgery.

The study population as a whole had a mean 37.6% excess weight loss at 1 year in this retrospective study, increasing to a maximum of 53% at 3 years, then falling back modestly to 47% excess weight loss at 6 years, according to Dr. Fielding, codirector of the New York University Program for Surgical Weight Loss.

Patients with a baseline BMI below 40 kg/m$^2$ had a mean 49% excess weight loss at 6 years. Those with a baseline BMI of 40-49, who comprised 61% of the total cohort, had a mean 45.9% excess weight loss. The 18% of patients with a baseline BMI of 50-59 had a mean 47.5% excess weight loss, as did the 5% with a BMI of 60 or greater.

Complications consisted of band slippage in 4.5% of the patients, port-related problems such as leak or abscess in 3.3%, band intolerance or malfunction in 1.6%, and band erosion in 0.2%.

This study didn't track changes in comorbidities over time. However, the high baseline prevalence of major medical comorbidities in the study population is worth noting. After all, bariatric surgery is the only treatment for severe obesity with demonstrated long-term efficacy, and substantial improvement in obesity-related comorbidities often occurs 1-2 years after LAGB, Dr. Fielding noted.

Dr. Fielding disclosed serving as an adviser to Allergan Inc. and Ethicon Endo-Surgery Inc. ■