The goal: bariatric surgery without the surgery

Stitching Up to Help Patients Slim Down

By Todd Neff

Stuart Amateau is taking the fight to the American obesity epidemic by moving the bariatric from the laparoscopic to the endoscopic.

Amateau, MD, PhD, is a University of Colorado School of Medicine assistant professor of Gastroenterology and the director of Bariatric Endoscopy and Tissue Apposition at UCH. He arrived in August 2012 from a fellowship at Johns Hopkins University, and with rare expertise in a new type of surgery – or perhaps better, minimally invasive stitching – of the digestive tract using tools delivered via a centimeter-thick endoscope. As part of University of Colorado Hospital's multidisciplinary Weight Loss Center, which he is helping to develop, Amateau has been using the technique to help those who have begun to gain weight again years after bariatric surgery. He is the only one in the Rocky Mountain region able to do it.

Before you haul out your medical dictionary, Laurel Clark's story can help explain what Amateau does.

Clark weighed about 300 pounds when she had bariatric gastric bypass surgery in mid-2004. The surgery, done laparoscopically through small abdominal incisions, divides the stomach unevenly, with a much smaller portion left to accept incoming food. The rest, plus the top part of the small intestine, called the duodenum, exists thereafter mainly to channel the products of liver, gallbladder and pancreas to digestion deeper in the small intestine.

The pouch, as the bit of useful stomach is called, holds about three ounces, quelling appetite while leading the way to significant weight loss. The surgical narrowing of the gap between the pouch and the surgically reattached small intestine helps, too. Clark lost 140 pounds, dropping her to what she weighed in high school.

What goes up… But over time, the pouch can stretch. Sometimes bariatric surgery patients distend the elastic tissue by relapsing into consistent overeating. In Clark's case, a series of medical challenges put pressure on the pouch. As it stretched – in her case doubling in volume – the connection between pouch and small intestine widened from about a centimeter in diameter to perhaps four times as far.

"I just had the sensation that I could eat as much as I wanted, which made me nervous," Clark said. "I went through this procedure, but I was gaining weight and not wanting to exercise as much."
Her story was familiar to Amateau, who recognized Clark as an ideal candidate for an endoscopic procedure called bariatric revision. Such candidates have lost a great deal of weight, but then have gained back up to about 40 pounds, Amateau said.

The procedure involves what amounts to a tiny sewing machine at the end of an endoscope delivered down the patient’s throat. Amateau uses the tool (the OverStitch, by Austin, Texas-based Apollo Endosurgery, Inc.) to simultaneously tighten pouch tissue and narrow the gap between pouch and intestine. It takes four to five stitches, he said.

Amateau has refined his technique – which he learned from Sergey Kantsevoy, MD, PhD, a pioneer in the field – and reduced the surgery time from two-and-a-half hours to about an hour in recent years.

Ten down. Amateau performed Clark’s bariatric revision on Aug. 9. She went home that day wondering, “I have literally no pain. Shouldn’t there be something?” Less than a month later, Clark had lost 10 pounds of the 40 pounds Amateau anticipates she will shed.

The surgery helps patients who otherwise would have limited options: either change behaviors proven to be powerful enough to have pushed them past 400 pounds in the first place, or undergo another surgical bariatric procedure, which can keep them away from work for a month to six weeks. The endoscopic procedure seems to have an emotional impact, too, Amateau added.

“It gets them back on the right track,” he said. Among other things, they tend to restart exercise programs and pay more attention to what they’re eating, he said.

“This is a jump start,” Clark said. “Almost like maintenance on a car.”

The procedure is avant-garde enough that Amateau is still explaining to insurers what it is and how much long-term value it can bring in terms of reduced costs associated with diabetes, hypertension, orthopedic problems and other enduring consequences of obesity. In Clark’s case, her insurer ended up creating a new code, she said.

**New alternatives.** Bariatric revision, though, is only the beginning, Amateau said. He and others are experimenting with techniques using endoscopic stitching to partition a stomach pouch in an effective and enduring way. The technique might be ready for clinical trials within a year, he said. In combination with a medical device like the EndoBarrier – an experimental plastic sleeve that prevents the duodenum from absorbing nutrients – endoscopic stomach stitching could act as a low-cost alternative to bariatric surgery, and one with fewer potential complications, he said.

Hugo Rosen, MD, head of the School of Medicine’s Division of Gastroenterology and Hepatology, said that given the scope of the U.S. obesity epidemic, hospitals and providers are in dire need of multiple approaches, including the minimally invasive and the complementary. Amateau is also applying his endoscopic skills to repairing minor damage in the wake of traditional bariatric surgery.
Plus, not everybody is up for bariatric surgery.

"Many have comorbidities that make them poor candidates for surgery," Rosen said, his own patients with fatty liver disease being good examples. "What I'm hoping to see is that Stuart can develop regional expertise in this area to obviate the need to have major abdominal surgery."