

Gastric Bypass Is Worth the Risks in Some Teens

Near-complete resolution of type 2 diabetes, sleep apnea were among outcomes seen in small study.

BY CHRISTINE KILGORE
Contributing Writer

WASHINGTON — Early experience suggests that the health benefits of bariatric surgery offset the risks for severely obese adolescents, based on the results of small studies reported at the annual scientific sessions of the American Diabetes Association.

Significant metabolic improvements and near-complete resolution of type 2 diabetes and obstructive sleep apnea were among the 1-year outcomes of Roux-en-Y gastric bypass surgery performed in 36 morbidly obese adolescents, aged 13-21, at three pediatric surgical centers participating in the Pediatric Bariatric Study Group.

Severely obese adolescents are developing serious adultlike comorbidities at an unexpectedly high frequency. Limited success with behavioral and lifestyle interventions has left physicians considering more aggressive interventions. "Children who are obese become obese adults," said Dr. Carroll M. Harmon, of the Children's Hospital of Alabama, Birmingham.

Teens were eligible for the surgery at Children's Hospital and the other institutions in the Pediatric Bariatric Study Group (the University of Florida in Gainesville and the Cincinnati Children's Hospital Medical Center) if they had a body mass index (BMI) of at least 40 kg/m² with serious comorbidities like type 2 diabetes and obstructive sleep apnea, or a BMI of 50 or more with less severe comorbidities. They also had to have been deemed "physiologically mature" and "psychologically sound," and had to have tried an intensive, multidisciplinary 6-month medical weight loss program.

The teens in the multicenter cohort had a mean BMI preoperatively of approximately 57. Postoperatively, the mean BMI fell to 36, a 37% reduction.

None of the patients included in the weight loss analysis (9 of the 36 teens in

the cohort were excluded because they did not comply with follow-up requirements) attained normal weight in the year of follow-up; BMI values, in fact, still ranged from overweight to severe obesity.

Still, the postoperative weight loss was significant and consistent with outcomes in adults who undergo bariatric surgery, said Dr. Harmon, professor of surgery in the University of Alabama division of pediatric surgery.

Metabolic measures improved as a result of significant decreases in triglycerides (-65 mg/dL), total cholesterol (-30 mg/dL), fasting blood glucose (-12 g/dL), and fasting insulin (-21.3 μU/mL). Changes in HDL and LDL cholesterol values were not statistically significant.

Mean hemoglobin A_{1c} decreased from 7.3% to 5.6% in the 10 patients diagnosed with type 2 diabetes. At 1 year after surgery, 1 of 10 patients remained on diabetic medications; 9 of 10 were on diabetic medications preoperatively, Dr. Harmon reported.

The adolescents also scored significantly higher postoperatively on various quality-of-life measures than they did preoperatively, he added.

In a separate poster presentation, Dr. Marc P. Michalsky and Dr. Dara Schuster of Ohio State University, Columbus, reported on what they said are similarly good outcomes in five morbidly obese adolescents (BMI of at least 57) who underwent Roux-en-Y gastric bypass surgery at Columbus Children's Hospital.

Serum hemoglobin A_{1c} reached normal values within 20 weeks of surgery in each of the four adolescents with type 2 diabetes. Blood pressures reached normal values within 20 weeks in each of four hypertensive patients, and obstructive sleep apnea resolved after surgery in two of three affected patients. Insulin resistance (as determined by calculating the homeostasis model assessment of insulin resistance) also was reduced by a mean of 66% at 12 weeks post surgery.

"These are superobese kids," and they have the same morbidities as obese adults who qualify for gastric bypass surgery, Dr. Schuster said in an interview. "The question we need to answer is: Do we do them a favor by operating early?"

Long-term follow-up, each of the physicians emphasized, will be necessary to determine both the durability of the patients' improvements and the safety of the surgery. Whether the patients will experience nutritional malabsorption is a question, they noted.

None of the five adolescents treated in Columbus experienced complications during the 20-week follow-up period, but there were complications among the 36 who were followed for a year.

Nine of the 36 patients had "minor" complications with no long-term sequelae (nausea, wound infection, and food obstruction), and 4 had at least one "moderate" complication (persistent iron-deficiency anemia or the need for reoperation).

Two patients, Dr. Harmon reported, had severe complications: One developed severe thiamine deficiency with significant sequelae, and the other, who initially presented with a BMI of 80 and a weight of 630 pounds, died 9 months after surgery due to infectious colitis contracted while undergoing inpatient rehabilitation for osteoarthritis.

The complication profile thus far is similar to that seen in superobese adults who undergo the surgery, Dr. Harmon said. Among adults, 0.2%-2% die from the surgery and more than 15% experience complications.

"The risks are still considerable, but so far in adolescents, just as in adults, these risks seem to be offset by the benefits," said Dr. Harmon. "It's encouraging."

The adjustable gastric banding procedure, which does not involve an intestinal bypass, is getting more attention as a possible "best" operation for adolescents—even though long-term results in adults have not been compared with those of gastric bypass surgery—because it eliminates concerns about nutritional and mineral malabsorption, Dr. Harmon said.

Comorbidities Are Missed in Teens

Dr. Schuster said the "most striking thing" about seeing adolescents referred to her hospital's bariatric surgery clinic is how "many of them didn't have their comorbid conditions diagnosed" before their surgical evaluations.

Hypertension, sleep apnea, diabetes, and other obesity-related comorbid conditions "are underdiagnosed and undermanaged" in obese adolescents, Dr. Schuster and her colleagues said in a poster presented at the annual scientific sessions of the American Diabetes Association.

Of 46 patients who were seen at the Columbus Children's Hospital Adolescent Bariatric Surgery Clinic in 2004 and 2005, 42% received a "new diagnosis" of obstructive sleep apnea and 33% learned they were hypothyroid.

During their initial presurgical evaluation, 25% were first told they had type 2 diabetes, 13% learned they had gastroesophageal reflux disease, and 10% received a new diagnosis of hypertension. Not surprisingly, since insulin resistance is hard to diagnose in most clinical settings, 54% learned for the first time that they were insulin resistant.

The prevalence of comorbidities was similar to, or higher than, the rates recorded among morbidly obese adults presenting at other clinics at Ohio State University in Columbus, reported Dr. Schuster and her associates.

Insurance coverage is variable nationwide and difficult to secure in some locales. "In Ohio, Medicaid has been favorable toward covering these kids so far," Dr. Michalsky said. "We have a high rate of obesity, so the state may be especially attuned [to the problem]."

Roux-en-Y Gastric Bypass Appears Safe for Teens, the Elderly

BY MARY ELLEN SCHNEIDER
New York Bureau

LOS ANGELES — Both seniors and adolescents can be good candidates for Roux-en-Y gastric bypass surgery, according to new research presented at the annual Digestive Disease Week.

In a retrospective analysis of 167 surgical cases at the Mayo Clinic in Rochester, Minn., involving patients aged 60 or older and adolescents aged 12-18 years, researchers found a significant decrease in obesity-related mortality after gastric bypass surgery, and limited morbidity and mortality overall.

The researchers analyzed cases from the Mayo Clinic's 20-year bariatric surgery database and obtained morbidity and mor-

tality rates from medical records. They also sent a questionnaire to all surviving patients.

The older patients had higher rates of adverse events and reported having experienced less dramatic results both in decreases in body mass index (BMI) and self-assessed declines in obesity-related health conditions.

The 155 older patients—aged 60-76 years—had a 6% mortality after 5 years of follow-up, and another 14% had had serious morbidities that delayed their discharge from the hospital following surgery, such as wound infections, bowel obstructions, or cardiovascular events.

Patients reported about a 50% reversal in obesity-related comorbidities, and the average BMI was reduced from 46 to 33

kg/m² at 1 year, according to senior study author Dr. Michael G. Sarr of the Mayo Clinic, Rochester.

Mortality for older patients in this study (0.7%) is significantly lower than the rate in a previous report about Medicare patients who underwent gastric bypass surgery, Dr. Sarr said. That study reported a 30-day mortality of nearly 5% in patients aged 65 and older (JAMA 2005;294:1903-8).

"That is just not our experience at the Mayo Clinic," he said.

But he added that mortality and morbidity post surgery can be high at surgical centers that perform a low volume of these operations, while high-volume centers carry a much lower risk.

Among 12 adolescent patients aged 12-

18 years who underwent the surgery, there were no serious adverse events and no deaths after 3 years of follow-up. The overall morbidity was about 10%, Dr. Sarr said.

The adolescent patients had an average drop in BMI of 55 to 36, and patients reported experiencing an 82% reduction in obesity-related diseases.

The need for the surgery in the adolescent population is clear, he said, so the debate now centers on the appropriate operation in this group. For example, some surgeons favor using a gastric band, which can be adjusted or removed, instead of traditional Roux-en-Y gastric bypass surgery. Dr. Sarr said he expects to see more research in this population in the next 3-4 years.