

## FOCUS ON BARIATRIC SURGERY

## Bariatric Surgery Cuts Mortality, MI, Stroke

BY MITCHEL L. ZOLER

FROM THE ANNUAL MEETING OF THE AMERICAN SOCIETY FOR METABOLIC AND BARIATRIC SURGERY

ORLANDO – Patients undergoing bariatric surgery had a significantly reduced rate of subsequent myocardial infarctions and strokes and significantly increased survival, compared with similar, morbidly obese patients who had other types of surgery, in a retrospective cohort study of more than 9,000 U.S. patients.

The results “add to the growing evidence that bariatric surgery plays a role in temporizing the risk factors for major cardiovascular events. We believe our

analysis builds on prior reports and takes them a step further by evaluating actual events,” Dr. John D. Scott said at the meeting.

In his study of bariatric surgery patients in South Carolina during 1996-2008, the combined rate of MIs, strokes, and deaths was 52% below the rate in patients undergoing gastrointestinal surgery, and 28% below the rate of those who had orthopedic surgery – both statistically significant differences. The results also showed significant drops in each component of the combined end point (MIs, strokes, and deaths).

“Previous literature demonstrated that cardiovascular risk declined after bariatric surgery. [This study

looked] at the rate of actual cardiovascular events, which significantly declined after bariatric surgery,” said Dr. Scott, a bariatric surgeon at University Medical Center Greenville (S.C.) Hospital System.

The new study used hospital in-patient records collected during 1996-2008 through the South Carolina Office of Research and Statistics, and death data collected by the South Carolina Department of Health and Environmental Control. The analysis included morbidly obese patients aged 40-79 years who underwent non-emergency surgery (4,747 patients who had any form of bariatric surgery, 3,066 who had joint replacement or spinal surgery, and 1,327 who had a cholecystectomy, hernia repair, or lysis of GI adhesions). Those with a prior MI or stroke were excluded. Patients were followed for an average of 14 months after bariatric surgery, 25 after orthopedic surgery, and 26 months after GI surgery.

In a multivariate analysis that controlled for age, sex, race, hypertension, dyslipidemia, diabetes, coronary artery disease, obstructive sleep apnea, and a history of transient ischemic attack, patients undergoing bariatric surgery had a significant 41% reduced rate of first MI, compared with the orthopedic surgery patients, and a significant 51% lower rate than the GI surgery patients.

Mortality in the bariatric surgery patients dropped by a significant 19% and 55% relative to the orthopedic and GI patients, respectively, and the stroke rate was also significantly lower after bariatric surgery compared with the rates in each control group.

Notably, bariatric surgery “reduced cardiovascular events, as opposed to obesity-drug treatments that may actually increase the risk for cardiovascular events,” he noted. “Bariatric surgery has been rigorously tested and [proved] over the past 20 years, and it has a dramatic effect on all aspects of patient health. [Most] medical treatments for obesity don’t have 20 years of data, and some medications actually cause heart problems. We don’t know how bariatric surgery reduced MI and stroke, but it’s probably several factors: weight loss, and resolution of diabetes, hypertension, and sleep apnea.

Dr. Scott has been a speaker for Gore Medical. ■

## Control-Group Issues Complicate Comparisons

Dr. Scott and his associates have attempted to address a quintessential question about bariatric surgery: Does it reduce the long-term mortality associated with obesity? About 10 prior reports in the literature have also attempted to address this.

All of these studies have weaknesses, mostly involving the control group. Because nonsurgical patients who received medical management typically are used as the control group, this often raises the question of whether the control patients were sicker than the surgical patients.

Dr. Scott’s study avoided this weakness by comparing bariatric surgery patients with other

surgery patients. This eliminated the bias of greater sickness, as all patients in the study were healthy enough to undergo elective surgery. It also eliminated any bias stemming from access to surgical and medical care.

Despite this, the bariatric surgery and control groups differed in demographics and comorbidities. It seems as though the between-group differences were too extensive to allow for adequate adjustment by a multivariate analysis. In addition, the study included no information on body mass index, so no adjustment was possible for this variable.

The impact of bariatric

surgery can only be reliably tested in a randomized, controlled trial. The biases embedded in databases cannot be fully eliminated; the only way to address this question objectively is with a randomized trial.

PHILIP SCHAUER, M.D., is director of the bariatric and metabolic institute at the Cleveland Clinic. He made these comments as the designated discussant of Dr. Scott’s paper. He has received teaching grants from Allergan and Covidien; consulting fees as a member of the advisory board of and research support from Bard/Davol and Ethicon Endo-Surgery; consulting fees from Baxter Healthcare, Cardinal Health, and Stryker Endoscopy; and support from RemedyMD.



VIEW ON THE NEWS

## Laparoscopic Sleeve Gastrectomy Shown to Be Safe

BY BRUCE JANCIN

FROM THE ANNUAL MEETING OF THE AMERICAN SURGICAL ASSOCIATION

BOCA RATON, FLA. – At 1 year after surgery, laparoscopic sleeve gastrectomy is linked with morbidity and effectiveness rates between those of laparoscopic adjustable gastric band and laparoscopic Roux-en-Y bypass procedures, according to the first report from the American College of Surgeons – Bariatric Surgery Center Network accreditation program.

The ACS project collected prospective, longitudinal, standardized data from 109 hospitals for this initial report on laparoscopic sleeve gastrectomy, a newer bariatric procedure that’s being performed with increasing frequency.

“This is an observational study that reflects the cases now being done. Right now we don’t know the ideal candidates for this operation. But we can show that it’s a safe operation, and it’s approved by the different societies,” Dr. Matthew M. Hutter said at the meeting.

Included in the analysis were 1-year outcomes for 944 patients who had laparoscopic sleeve gastrectomy, 12,193 who underwent the laparoscopic adjustable gastric band procedure, 14,491 who had laparoscopic Roux-en-Y gastric bypass, and 988 who had an open Roux-en-Y gastric bypass. Morbidity, readmission, and reoperation/intervention rates were lowest with the gastric band procedure and highest with open Roux-en-Y. Differences in 1-year mortality did not reach statistical significance. Additional years of careful follow-up are planned, according to Dr. Hutter of Massachusetts General Hospital, Boston.

The absolute reduction in body mass index at 1 year was smallest in the laparoscopic adjustable gastric band group at 6 kg/m<sup>2</sup>, greatest with open or laparoscopic Roux-en-Y bypass at 15 kg/m<sup>2</sup>, and intermediate at close to 12 kg/m<sup>2</sup> with laparoscopic sleeve gastrectomy.

Discussant Dr. Carlos A. Pellegrini called the study a landmark in surgical history. “It captures a novel procedure as it launches into general practice, assessing

both safety and effectiveness of sleeve gastrectomy at a time when case reports and case series by advocates dominate the literature,” said Dr. Pellegrini, professor and chairman of the department of surgery at the University of Washington, Seattle.

Although the operation appears to be safe and have a low risk profile, addi-

tional years of follow-up will be important in gauging the procedure’s effectiveness. European surgeons report that the stomach can dilate over time, which may reduce laparoscopic sleeve gastrectomy’s effectiveness, he said.

Dr. Hutter reported having no financial conflicts. ■

## Comparative Bariatric Surgery 1-Year Outcomes

	Laparoscopic sleeve gastrectomy (n = 944)	Lap. adjustable gastric band (n = 12,193)	Lap. Roux-en-Y (n = 14,491)	Open Roux-en-Y (n = 988)
<b>Morbidity</b>	5.61%	1.44%	5.91%	14.98%
<b>Adjusted OR</b>	1	0.29	1.06	2.55
<b>Mortality</b>	0.21%	0.08%	0.34%	1.11%
<b>Adjusted OR</b>	1	0.53	1.77	4.29
<b>Readmission</b>	7.63%	4.05%	11.66%	16.3%
<b>Adjusted OR</b>	1	0.57	1.64	2.14
<b>Reoperation/intervention</b>	5.51%	4.59%	13.56%	14.07%
<b>Adjusted OR</b>	1	0.92	2.73	2.58

Source: Dr. Hutter  
Note: OR=odds ratio