

Overview of Laparoscopic Sleeve Gastrectomy (LSG).

Clinical Professor of Surgery, Montreal, QC CANADA
Michel Gagner, M.D. FRCSC, FACS, FASMBS, FICS, AFC(Hon.)

Sleeve gastrectomy (SG) has been a simpler bariatric operation, which shows good resolution of co-morbidities and provides excellent weight loss. Laparoscopic SG was initially performed for high-risk patients (in 2000) to enable increased safety for both operations. However, indications for SG as a primary procedure have been increasing. The Third International Consensus Summit for SG was held in New York City, Dec 2-4, 2010, to evaluate techniques and results.

Methods: A questionnaire was filled out at the Second ICSSG March 19-22, 2009 in Miami Beach and compared to the recent one in NYC in 2010.

Results: Findings are based on 106 questionnaires, representing a total of 14,776 SG. In 86.3%, SG was intended as the sole operation and 81.9% of the surgeons reported no conversions from a laparoscopic to an open SG. Mean \pm SD %EWL: 1 yr 60.7 \pm 15.6, 2 yrs 64.7 \pm 12.9, 3 yrs 61.7 \pm 11.4, 4 yrs 64.6 \pm 10.5, >4 yrs 48.5 \pm 8.7. Bougie size was median 34.0 Fr., (range 16-60). The dissection commenced 5.0 \pm 1.4 cm (median 5.0, range 1-10) proximal to the pylorus. Staple-line was reinforced in 65.1%; of these, 50.9% over-sew, 42.1% buttress and 7% do both. Post-op, a high leak occurred in 1.5% and a lower leak in 0.5%, hemorrhage in 1.1%, splenic injury in 0.1%, and later stenosis in 0.9%. Post-op GE reflux (~3 months) was reported in 6.5% (range 0-83%). Mortality was 0.2 \pm 0.9% (total 30 deaths in 14,776 patients). This year, 5 years results showed a mean of 50% EWL, a higher result than with gastric banding, but comparisons with gastric bypass are still pending. Conclusion: SG for morbid obesity should be recognized as a primary operation.

Rise of Sleeve gastrectomy in Asia

Muffazal Lakdawala

Abstract

Bariatric surgery is an ever evolving field. There have been several discoveries that have changed the way bariatric procedures are carried out. This has led to a lot of enthusiasm within the surgical community. Many of the bariatric surgical procedures have not been able to stand the test of time and have been replaced with newer, simpler and more effective procedures rendering the older ones obsolete.

Sleeve gastrectomy is a relatively new procedure. What was initially started as the first stage of a duodenal switch surgery in super super obese patients has now come of age to have its place as a standalone procedure in bariatric surgery. There is a lot of excitement in the surgical community about this procedure. Its popularity can be attributed to its favourable early results. Hence surgeons from across the world are now offering it to an increasing number of patients. The benefits of sleeve gastrectomy seem to far outweigh its risks. It is a technically easier procedure with a lower learning curve. There are less chances of developing nutritional deficiencies and the remnant stomach is always accessible for examination which is of great significance for stomach cancer endemic countries like Japan and Korea. Asian studies have already suggested better results in terms of weight loss and resolution of co-morbidities after a sleeve gastrectomy. Increasing proficiency of Asian surgeons in Single Incision surgery has led to further increase in the popularity of this procedure in Asia.

The only word for caution for complete adoption of LSG is that long term results are still awaited and leaks from staple lines are difficult to treat.

Long term results of laparoscopic sleeve gastrectomy for Korean

Gangnam CHA medical center, CHA university, Seoul, Korea

Sang-Moon Han

Purpose: In Asia, its types and the main causes are different from than in the western society. Therefore, the treatment plan should be different, and the surgery for morbid obesity should be carefully chosen. Long term results of the isolated laparoscopic sleeve gastrectomy which was performed for the Korean are reported.

Methods: We retrospectively reviewed 168 patients who underwent LSG from January 2003 to January 2011. One hundred thirty nine of these patients had more than 6 months of follow-up, and they are subjects of this report. Sleeve gastrectomy was performed laparoscopically using Endo-GIA stapler to create a lesser curve gastric tube over a 48-Fr bougie. The longest follow up time is 8 year.

Results: Preoperative Body Mass Index (BMI) is 36.7 ± 5.4 (30.0-59.1). The percentage of excess weight loss (%EWL) in the postoperative first, third, fifth, and seventh year was 71.4 ± 22.1 , 66.0 ± 29.9 , 67.8 ± 27.6 , and 60.4 ± 29.3 . The percentage of excess BMI loss (%EBMIL) was 73.1 ± 24.3 , 67.8 ± 31.0 , 73.4 ± 32.1 , and 62.2 ± 29.7 . However, the follow up rate is decreased by postoperative time. The follow up rate in third year is 62.5% and fifth year is 30.2%. There was no 30-day peri-operative mortality. Three major complications (1 delayed bleeding, 2 leakage) occurred.

Conclusion: Isolated laparoscopic sleeve gastrectomy has been an effective weight loss operation in the most of the Korean patients. However, the more follow up rate after LSG is needed.

Sleeve Gastrectomy in Banding country.

Consultant Bariatric Surgeon St George Hospital Sydney

Dr Ken Loi MBBS Bsc (med) FRACS

Laparoscopic gastric banding has been the dominant bariatric procedure in Australia for the last 10 years. Most bariatric surgery are performed in private hospital and there is no database to allow us to examine adequately the trend of different operations. Overall the numbers of bariatric procedures increased from 500 per year to 15000 last year. However, from medicare data documented by government, we are able to estimate there is a decline in numbers of lap band performed and increase in numbers of sleeve gastrectomy. The presentation will examine the possible reasons behind it and illustrate the problems that will be facing Australian bariatric surgeons in the next 5 to 10 years.

Laparoscopic sleeve gastrectomy in Japan

Masayuki Ohta, MD, Seigo Kitano, MD

Department of Surgery I, Oita University Faculty of Medicine, Oita 879-5593, Japan

In Japan, laparoscopic bariatric surgery was introduced in 2000, and laparoscopic sleeve gastrectomy (LSG) has been performed since 2005. Since gastric cancer is a frequently-occurred disease in Japan and the excluded distal stomach after laparoscopic Roux-en-Y gastric bypass (LRYGB) cannot be checked by usual endoscopy, LRYGB is probably not so suitable for Japanese patients. Therefore, a number of LSG is rapidly increasing. Japan Research Society for Endoscopic and Laparoscopic Treatments of Obesity (JELTO) which was organized 5 years ago carried out a nationwide survey on laparoscopic bariatric surgery in 2010. From 2000 to 2009, total 340 laparoscopic bariatric operations were performed by 9 Japanese institutes, and 102 of the operations (30%) were LSG. In 2009, 70 morbidly obese patients underwent laparoscopic bariatric surgery, and 50 of the 70 patients (71%) did LSG. There was no mortality and the postoperative complication rate was 7.8% in the 102 cases. Major complications were staple-line leakage in 4 cases (3.9%) and intra-abdominal bleeding (reoperation required) in 3 (2.9%). Percent excess weight loss after LSG was 66% at 12 months and 68 % at 24 months, respectively. According to the weight loss, 91% of patients with type 2 diabetes achieved remission, hypertension were resolved in 62% of patients, and dyslipidemia were resolved in 53%. This survey showed the safety and effectiveness of LSG in Japanese morbidly obese patients. In addition, LSG has been approved as a special advanced technique in some Japanese institutes by the Ministry of Health, Labour and Welfare since this year, which is partly covered by the government health insurance. Now, LSG has been rapidly spread in Japan and will play an important role in treatments for morbid obesity.

Update in the outcomes of over 800 sleeve gastrectomies with 6 years of followup.

¹Mercy Bariatrics Perth Australia

Leon Cohen¹, Jon Armstrong¹, Harsha Chandraratnah¹

Since 2004 we have performed over 850 sleeve gastrectomies. This is a heterogenous group that includes 770 primary cases and 80 revisional sleeves. The first 107 sleeves were calibrated against a 50fr bougie and the next 680 against a 40 Fr bougie. We are now using a 36 Fr bougie (63) in most cases. Results in our largest series of 618, 40 Fr primary sleeves show an excess weight loss that peaks at 18 months at 74% and is now at 61% out to 4 years. In the earlier 50 Fr series the weight loss peaked at 62 % at 24 months and had fallen to 42 % by 60 months. So far in the earlier 50 fr series 12 of the patients have been re sleeved with their EWL returning to an average of 55 % EWL at 24 months. Only one 40 fr patient has required resleeve so far. Impact of sleeve size , surgical technique, commencement BMI, age and sex on outcomes will be discussed.

Conclusion:

We believe that sleeve gastrectomy produces robust weight loss in the medium term providing an appropriate size bougie is selected. (no more than 40Fr) Late weight regain is in line with the natural history of other bariatric approaches and can be adequately managed by resleeve gastrectomy.

Single Incision Transumbilical Laparoscopic Sleeve Gastrectomy (SITU-LSG), How I Do it?

*Bariatric & Metabolic International Surgry Center, E-Da Hospital, Kaohsiung, Taiwan

†Department of General Surgery, E-Da Hospital, Kaohsiung, Taiwan

‡Department of Chemical Engineering, Institute of Biotechnology and Chemical Engineering, I-Shou University, Kaohsiung, Taiwan

Chih-Kun Huang, MD*†‡, Chi-Hsien Lo, MD*, Jer-Yiing Houg, PhD‡, Yaw-Sen Chen, MD†, Po-Huang Lee, MD†

BACKGROUND: Sleeve gastrectomy has been recently proposed as a sole bariatric procedure because of the resulting considerable weight loss in Asian morbidly obese patients. Traditionally, laparoscopic sleeve gastrectomy requires 5-6 skin incisions to allow for placement of multiple trocars. With the progression of scarless concept, multiple abdominal procedures have been performed using a single incision trans-umbilical (SITU) incision, with good cosmetic outcomes.

METHODS: We retrospectively reviewed our patients receiving sleeve gastrectomy from November 2008 till September 2010 .A total of 27 consecutive patients underwent laparoscopic sleeve gastrectomy with single incision and trans-umbilical approach. Three trocars were inserted via the umbilical incision after pneumoperitoneum.

RESULTS: Of the 27 patients, 19 were women and 8 were men, with a mean age of 32 years (range, 20-46). The mean preoperative body mass index was 35.9 kg/m (range, 32.4-42.3). The mean operative time was 70 minutes (range, 30-170). Intra-operative novel liver suspension tape was used in all patients, and no perioperative or postoperative complications happened. No conversion or need for adding trocar during the procedure was found.No mortality was noted.

CONCLUSIONS: SITU laparoscopic sleeve gastrectomy is safe, technically feasible, and reproducible. Intra-operative modification of liver retraction is the key element in improving surgical field and decreasing operation time.

Possible mechanisms of rapid improvement of glucose tolerance and insulin secretion after laparoscopic sleeve gastrectomy (LSG)

Hiroshi Yamamoto

Departments of Surgery, Shiga University of Medical Science

【Objective】 LSG has been designed as the first of a two-stage procedure for the high-risk, super-obese patient. Recently LSG has been applied as a single-stage procedure because of excellent weight loss and low incidence of complications. More recently, the accumulating data suggested that LSG produces remission or cure of type 2 diabetes mellitus (DM). To investigate the mechanism which LSG improves glucose tolerance, oral glucose tolerance test (OGTT) was performed at preoperative and 3 months after surgery.

【Methods】 We performed LSG on two diabetic patients, one patient with impaired glucose tolerance (IGT) and two non-diabetic patients. Plasma glucose, insulin and Glucagon-like peptide-1 (GLP-1) levels during OGTT were measured. Fasting ghrelin levels were also measured. To assess gastro-intestinal motility during OGTT, we used cine MRI.

【Results】 Diabetic patients discontinued oral hypoglycemic agent or insulin immediately after surgery. HbA1c was improved in diabetic patients. OGTT showed that great improvement of glucose tolerance with enhancement of insulin and GLP-1 secretion in diabetic patients. Area under the curves (AUC) for insulin and GLP-1 were increased after LSG. Fasting ghrelin levels were decreased in all patients. Cine MRI during OGTT revealed that gastro-intestinal motility was remarkably induced after LSG.

【Conclusion】 These results suggest that LSG can lead to rapid improvement of glucose tolerance and insulin secretion. Increased GLP-1 secretion and decreased fasting ghrelin levels may play a role of improvement of glucose tolerance and insulin secretion after LSG. Induced gastro-intestinal motility during OGTT may lead to increased GLP-1 secretion after LSG.

Complications after laparoscopic sleeve gastrectomy for morbid obesity

Akira Sasaki¹, Kazunori Kasama², Toru Obuchi¹, Shigeaki Baba¹, Akira Umemura¹, Go Wakabayashi¹

¹ Department of Surgery, Iwate Medical University School of Medicine, Morioka, Japan

² Department of Weight Loss Surgery, Yotsuya Medical Cube, Tokyo, Japan

Background: Laparoscopic sleeve gastrectomy (LSG) is a quick and relatively simple type of bariatric surgery which shows good resolution of co-morbidities and good weight loss. We report on complications after LSG as a single-stage bariatric surgery and the results of a survey on LSGs conducted by the Japan Research Society for Endoscopic and Laparoscopic Treatments of Obesity.

Methods: Data were collected on all patients undergoing bariatric surgery between January 2005 and December 2009, which included 340 patients from nine hospitals in Japan. We evaluated short-term morbidity in 102 patients undergoing LSG and excluded patients undergoing LSG with duodenojejunal bypass.

Results: A total of 102 LSGs were successfully performed without conversions to an open surgery. In 2004, there were no LSGs reported. In 2009, the most commonly-performed procedures were LSG (50 patients), laparoscopic gastric bypass (8), LSG with duodenojejunal bypass (8), and laparoscopic adjustable gastric banding (4). Approximately 8% of patients had perioperative complications. The most common complications were staple line leaks (4%). Reoperation occurred in seven patients (7%), four with bleedings and three with staple line leaks. No mortalities occurred. In our eight LSG patients, late gastric leak occurred in one patient; and it was treated with an endoscopic mucosal closure after failed attempts to treat the percutaneous abdominal drainage.

Conclusion: The frequency of serious complications among patients undergoing LSG was relatively low. It is a safe single-stage bariatric surgery for Japanese morbid obesity.

Is LSG perfect for Asian?

Ruby Hall Clinic, Pune, Maharashtra , India
Dr. Shashank Shah

Laparoscopic Sleeve Gastrectomy(LSG) was initially introduced as a primary stage in super obese patients to optimize their medical / anaesthesiological fitness and also to ease the surgical technique for the index bariatric operation at a later date. With evolving technique it has become popular stand alone procedure with proven results of an efficient Bariatric operation in terms of effective excess weight loss , co morbidity evolution and improvement in the quality of life. Our center has performed more than 700 LSG till date. The longitudinal data analysis of them is presented at multiple International Bariatric and Metabolic conferences. With Asian peculiarities of high adiposity, prone for type 2 diabetes, high carbohydrate diet ,these studies have highlighted LSG with a favorable effect on hyperglycemia ,with difficulty to monitor or treat nutritional deficiencies. Before we call it as an ideal Bariatric operation, some facets need to be thrown light on: like longevity of the results, recidivism etc. Long term data with the large population and comparative studies with the existent bariatric operations is awaited.