

Diabetes control and lessened cerebral cardiovascular risks after gastric bypass surgery in Asian Taiwanese with a body mass index <35 kg/m<sup>2</sup>

<sup>1</sup>Cardiovascular Department of internal Medicine, Min-Sheng Hospital, Taoyuan, Taiwan, ROC <sup>2</sup>Department of surgery, Min-Sheng Hospital, Taoyuan, Taiwan, ROC

Jih-Hua Wei<sup>1</sup>, Wei-Jei Lee<sup>2</sup>, Shu-Chu Chen<sup>2</sup>, Yi-Chih Lee<sup>2</sup>, Yen-How Su<sup>2</sup>

Background: Morbid obese patients with type 2 diabetes mellitus (T2DM) and a body mass index (BMI) >35 kg/m<sup>2</sup> benefit greatly from Roux-en-Y gastric bypass surgery (RYGB). Whether the patients with T2DM and a body mass index (BMI) <35 kg/m<sup>2</sup> also profit from this surgical procedure is not known. In Asian Taiwanese, the risks associated with T2DM and cardiovascular diseases occur at a relatively lower BMI levels. We examined the safety and efficacy of RYGB in Asian Taiwanese patients with T2DM and a BMI of 22-35 kg/m<sup>2</sup> in a referral medical center. Methods: A total 62 consecutive patients with T2DM and a BMI of 22-35 kg/m<sup>2</sup> underwent RYGB between 2003 and 2009. The data were prospectively collected before surgery and at 3, 6 and 12 months after operation. Results: Of the 62 patients, 15 were men and 47 were women (age 40.1 ± 10.1 years). Their preoperative characteristics were BMI 30.2 ± 3.2 kg/m<sup>2</sup>, body weight 81.8 ± 11.8 kg, waist circumference 100.6 ± 10.4 cm, and duration of T2DM 5.9 ± 6.0 years. There was no mortality, major surgical morbidity, or excessive weight loss experienced. The BMI decreased postoperatively by 20%, from 30.2 ± 3.2 kg/m<sup>2</sup> to 24.0 ± 2.8 kg/m<sup>2</sup> (P < .001). The fasting blood glucose level decreased from 194.7 ± 70.4 mg/dL to 99.8 ± 28.4 mg/dL (P < .001), and the hemoglobin A1c decreased from 9.1% ± 1.7% to 6.0% ± 0.9% (P < .001). The 10-year cerebral and cardiovascular disease risk was estimated with UKPDS risk engine before and after RYGB. The risk for fatal and nonfatal stroke and coronary heart disease decreased essentially. Conclusion: RYGB safely and effectively remits T2DM in Asian Taiwanese with a BMI <35 kg/m<sup>2</sup>. It also lessens the 10-year cardiovascular cerebral disease risks. More larger, longer term, prospective and randomized studies are needed to confirm these effects.

Prevalence of nonalcoholic steatohepatitis (NASH) in morbidly obese Japanese patients who underwent bariatric surgery

Yosuke Seki

Yotsuya Medical Cube

1) Division of weight loss surgery, Department of minimally invasive surgery, Yotsuya Medical Cube, Tokyo, Japan

2) Department of Medicine and Molecular Science, Gunma University Graduate School of Medicine, Gunma, Japan

Yosuke Seki<sup>1)</sup>, Kazunori Kasama<sup>1)</sup>, Satoru Kakizaki<sup>2)</sup>, Hideharu Shimizu<sup>1)</sup>

#### **Background:**

Non-alcoholic fatty liver disease (NAFLD) is increasingly being recognized to occur more commonly in the obese with a clinicopathologic entity that extends beyond uncomplicated steatosis to steatohepatitis (NASH), advanced fibrosis, liver failure and hepatocellular carcinoma. In our previous report, we showed that racial difference between Japanese and Western people in terms of NAFLD and related liver dysfunction. There are few reports investigating the prevalence of NASH in morbidly obese Japanese.

#### **Methods:**

Twenty-eight consecutive morbidly obese Japanese who underwent bariatric surgery in Yotsuya Medical Cube from October 2009 to July 2010 were enrolled. There were 16 females and 12 males (mean age:  $40.3 \pm 11.2$ ). Mean pre-operative weight was  $114.4 \pm 22.3$ kg and mean BMI was  $41.9 \pm 6.9$ kg/m<sup>2</sup>. A trucut liver biopsy was performed from left lobe of the liver at the time of surgery and analysed by a single pathologist. The liver biopsies were assessed by applying histopathological criteria that are accepted in the pathology literature.

#### **Results:**

Eighty-nine percent (25 in 28) of the patients undergoing bariatric surgery were found to have steatosis. And 71.4% (20 in 28) were found to have NASH. One patient was found to have established cirrhosis.

#### **Conclusion:**

Hepatic steatosis was very prevalent in our cohort of patients presenting for bariatric surgery. The prevalence of NASH was much higher in Japanese morbidly obese patients than the reported prevalence of NASH in Western individuals. These findings support that Asian are more prone to central obesity and, thus, have increased risk for obesity-related comorbidities.

## The Feasibility: SILS port Roux-en-Y Gastric Bypass for Low BMI Diabetes Mellitus

<sup>1</sup>Bariatric & Metabolic International Surgery Center, E-Da Hospital, Taiwan <sup>2</sup>International Minimally Invasive Surgery Training Center <sup>3</sup>General Surgery  
Chih-Kun Huang<sup>1,2,3</sup>, Chi-Hsien Lo<sup>1,3</sup>

**Background:** Single Incision Laparoscopic Surgery has been expanded to bariatric surgery. Laparoscopic Roux-en-Y gastric bypass is already accepted as one of the most effective procedure for the treatment of type 2 diabetes mellitus. Hereby, we described our experience using SILS Port to performed Roux-en-Y gastric bypass in nine patients with type 2 diabetes mellitus patients. **Methods:** After getting approval of E-Da Institutional Review Board, 9 cases with diagnosis of Type 2 Diabetes Mellitus patients with low body mass index (BMI less than 30) underwent Roux-en-Y gastric bypass using the SILS Port from August 2010 to November 2010. Standard Roux-en-Y gastric bypass was performed with 25ml of gastric pouch, 100cm of alimentary and biliopancreatic limb. **Results:** Four female and five male patients with mean BMI 27.15 and average of diabetes history of 10.2 years, underwent SILS Port Roux-en-Y gastric bypass. Novel liver suspension technique was performed in all patients. Mean operation time was 135 min. And two patients needed additional trocars intra-operatively, related to the difficulty in the dissection of gastric pouch and gastrojejunostomy suture. There was no surgical complication or mortality. At the first month postoperatively, mean AC sugar dropped from 198mg/dL to 116.1mg/dL, and mean HbA1c decreased from 9.71% to 8.18%. **Conclusion:** Laparoscopic Roux-en-Y Gastric Bypass with SILS Port is feasible and reproducible, but should be performed under strict indication and by an experienced surgeon. Even in low BMI patients, it showed high technical skill demands, increased operation time and high conversion rate.

## Early Resolution of Type 2 Diabetes Mellitus by Laparoscopic Ileal Transposition with Sleeve Gastrectomy Surgery in 23 to 35 BMI Patients

<sup>1</sup>Bombay Hospital <sup>2</sup>Center of Metabolic Surgery, Levioza Clinic, Pushpanjali Building, Santacruz(W), Mumbai, India

Ramen Goel<sup>1</sup>, Pravin Amin<sup>1</sup>, Madhu Goel<sup>2</sup>, Sanjeet Marik<sup>1</sup>

**Introduction:** Diabetes is considered a life style disease. 56% diabetic patients with BMI greater than 7 are at high risk of diabetes related complications. Bariatric surgery results in diabetes resolution in over 84% patients. Based on hindgut hypothesis suggesting role of incretins like GLP-1, early trials of ileal interposition surgery have displayed consistent HbA1c levels below 7 in over 80% patients with over 30 kg/m<sup>2</sup> BMI. In developing countries majority of T2DM patients are not morbidly obese and surgical procedures are to be evaluated for their efficacy in this group. In this study we have assessed the efficacy of ileal transposition with sleeve gastrectomy (SGIT) in 23 to 35 BMI T2DM patients. **Method:** After institutional ethical committee approval & Indian Council of Medical Research registration (CTRI/2008/091/00206), selected T2DM patients [HbA1c over 7, C Peptide more than 1] underwent Lap SGIT by a single surgeon. Data of first five patients with minimum 6 months follow up was analyzed for glycemic control, reduction/ discontinuation of diabetes medication. **Results:** The study target (HbA1c less than 7) was achieved in 60 % patients within 1 month , and in 100% patients within 6 months. Requirement of medicines reduced significantly within 6 months and their HbA1c levels reduced from 9.65% to 6.22%. **Conclusion:** Laparoscopic SGIT represents a new paradigm, for the treatment of T2DM even in non morbidly obese patients. **Conflict of Interest:** None. **Funding:** Research related to this study was funded by Bombay Hospital trust, Mumbai, India.

Is Laparoscopic Duodenojejunal bypass with Sleeve an effective alternative to Roux en Y gastric bypass:  
A Randomized Trial

<sup>1</sup>Department of Bariatric and Metabolic Surgery, Gem Hospital and Research Centre, Coimbatore, India  
Praveen Raj<sup>1</sup>, Palanivelu Chinnusamy<sup>1</sup>

**Background:**The incidence of Obesity and related metabolic disorders including Carcinoma Stomach in India is one of the highest in the world .Hence one requires a procedure that allows postoperative surveillance of the stomach with the best outcomes in terms of weight control and resolution of comorbidities .Here we compare one such procedure, Duodenojejunal bypass with Sleeve against the standard Roux-en Y gastric bypass.**Methods:**52 patients were randomized into 2 groups of Laparoscopic Duodenojejunal bypass with Sleeve (DJB) and Laparoscopic Roux en Y gastric bypass (RYGB) of 26 patients each. **Results:**The mean BMI at the end of 6 months and 1 year was 35.16, 29.25 in RYGB and 34.51, 28.10 in DJB. The %excess BMI loss at 6 months and 1 year were 52%  $\pm$ 19 and 77%  $\pm$ 24 in RYGB and 58%  $\pm$ 14 and 82%  $\pm$ 19 in DJB, which was not statistically significant.14/26 patients in the RYGB and 19/26 in the DJB group had Type II Diabetes . In RYGB 12 had complete resolution and 2 had improvement and 16 patients in the DJB had complete resolution and remaining 3 had improvement . There was 100% resolution of Dyslipidemias in both groups. There was 1 patient in the DJB group who presented with internal herniation 1 month post-op was managed surgically. **Conclusion:**Laparoscopic Duodeno-jejunal bypass with Sleeve, which combines the principles and advantages of Sleeve Gastrectomy and RYGB is a safe and effective alternative to gastric bypass in weight reduction and resolution of comorbidities.Also, with the possibility that the procedure can be made less restrictive by altering the size of the sleeve, it can be employed as a procedure to treat Metabolic Syndrome even in the lower BMI group. But, a long term follow up is necessary to establish it as a standard procedure.