

Anesthetic Management of 186 morbidly obese patients for Bariatric Surgery

¹Minimally Invasive Surgery Center, Yotsuya Medical Cube, Tokyo, Japan ²Department of Weight Loss Surgery, Yotsuya Medical Cube, Tokyo, Japan

Toshie Shiraishi¹, Kazuko Sonoda¹, Eri Kikkawa², Tetsuya Nakazato², Hideharu Shimizu², Yosuke Seki², Yoshimochi Kurokawa¹, Kazunori Kasama²

BackgroundWe have experience of anesthetizing 186 morbidly obese patients for Bariatric Surgery of which 50 patients had Laparoscopic Roux-en-Y Gastric Bypass (LRYGB), 41 patients had Laparoscopic Sleeve Gastrectomy with Duodenojejunal Bypass (LSG/DJB), 78 patients had Laparoscopic Sleeve Gastrectomy (LSG), and 17 patients had Laparoscopic Gastric Banding (LAGB) between June 2006 and October 2010. We retrospectively evaluated the background of patients, pre-operative complications (such as airway difficulties, intra-operative events, duration of anesthesia and the operation) and some other points. **Result**Mean age and body mass index of the patients were 38 years \pm 10 years and 44 kg/m² \pm 9 kg/m². As for pre-operative complications, there were 83 patients (44%) with hypertension, 83 patients (44%) with Diabetes Mellitus, 88 patients (47%) with Sleep Apnea Syndrome (Apnea Hypopnea Index > 20), 26 patients (14%) with asthma, 34 patients (18%) with a mental disorder such as depression. Using the Mallampati Classification (evaluation for difficult laryngoscopy), 29 patients (16%) were class III or IV which predicted difficult laryngoscopy. We performed conscious endotracheal tube intubation on 7 patients (5%). Anesthetic agents used were basically O₂-Air-Sevoflurane with added propofol, fentanyl, and remifentanyl. During the operations, a severe decrease in SpO₂ or blood pressure and deadly arrhythmias did not occur in any patient. Delayed awakening was also not found and all extubations were performed in the operating room. There was one patient that just after the extubation, experienced a very low level decrease in SpO₂ but recovered immediately. There were no re-intubation patients after the surgery. **Conclusion**There were no anesthetic problems or complications in any patients. There are many important risks or caring points concerning anesthesia for morbidly obese patients, but the biggest issue seems to be the respiratory management. In addition, there are some unclear issues which we should discuss more such as fluid therapy and drug dosing.

The Role of Proton Pump Inhibitor in Quality of Nursing Care in Sleeve Gastrectomy

¹E-Da Bariatric & Metabolic International Surgery Center, Taiwan

Li-Chun Lin¹, Chi-Hsien Lo¹, Chih-Kun Huang¹

AbstractBackground: Recent a few years, laparoscopic sleeve gastrectomy (LSG) is gaining ground as a new option for the treatment of morbid obesity in Asia-Pacific area. But postoperative reflux symptoms bothered the patient and caring nurse. The aim of this study is to evaluate whether proton pump inhibitors (PPI) prior to the surgery can improve the quality of nursing care. Methods: From February 2009 to October of 2010, 34 morbid obese patients underwent laparoscopic sleeve gastrectomy. Preoperatively intravenous PPI was prescribed to 16 patients (group A) and no PPI was given to 18 patients (group B). Both groups were compared in the length of hospital stay, operation time, Visual analogue scale (VAS) pain score and medications frequency (analgesic and anti-emetic). Results: All of 34 patients (15 men and 19 women) underwent laparoscopic sleeve gastrectomy with Fr 38 bougie. No difference of sex, age, comorbidity and BMI was noted in these two groups. Operation time was 53.5 minutes for group A and 59.89 minutes for group B without statistic difference. No differences were found in frequency of morphine injection and VAS pain score in early postoperative and discharge time. Two complications happened, one postoperative bleeding in group A and one staple leakage in group B. The frequency of additional antiemetic use (Prochlorperazine) was higher in group B (38.9% vs. 6.3%) ($p = 0.025$). The length of hospital stay was shorter in group A (3.19 vs. 4.00) ($p = 0.025$). Conclusion: Laparoscopic sleeve gastrectomy is a safe procedure with low morbidity. After surgery, the reflux and vomiting can lead to discomfort, increased use of anti-emetic and prolonged the hospital stay. Preoperative PPI use demonstrated an effective method to contour this problematic and improved the quality of nursing care for sleeve gastrectomy perioperatively.

Economic evaluation of bariatric surgery

¹Health management research center, Ritsumeikan Univ., Shiga, Japan ²Shiga medical univ. ³Yotsuya medical cube

Hiroaki Kakihara¹, Hiroshi Yamamoto², Toru Tani², Kazunori Kasama³, Tetsuya Nakazato³

Purpose: Economic evaluation of bariatric surgery Methods: 31 bariatric surgery patients of Yotsuya Medical Cube, who had follow-up appointments after May 2008, were surveyed. The surveys included questions pertaining to their expenditures before and after their surgeries. Results: The average medical expenditure for preoperative patients is 12,597 yen per month. There were seven patients who reported to have no medical expenditures before their operation. Without them, the average becomes 16,270 yen per month. Post operation, the number of patients who reported to have no medical expenditures increased to 11. The average medical expenditure for postoperative patients was found to be 3,286 yen per month. This means that an average of 9,311 yen decrease per patient, totaling 111,732 yen per year. Furthermore, the social medical cost was decreased by 372,440 yen. In addition, medical related financial expenditures for food, transportation, supplements, entertainment, and utilities decreased. On the other hand, expenditures for items such as clothing, and beauty/hairdressing costs increased. Overall, there was a decrease of 40,546 yen per patient. Analysis: It is thought that the annual medical cost reduction effect lasts and even increases with the age of the patient. If a patient was 30 years old at the time of operation, and it was assumed that they lived to be 80, a medical expenditure decrease of 18,622,000 yen is expected according to the data collected from the survey. This means that the present value after 3% discount from the interest would be 9,870,277 yen. From the patient's point of view, the medical cost (not including what is covered by insurance) is 2,300,000 yen, which could be collected in less than five years (57 months) . It can be said that it is a very advantageous investment of 10 times of long-term national bond interest rate of 2.1% for 20 years.

Measuring our success: how well do we follow our patients?

¹Australian Institute of Weight Control, Perth, Western Australia

Susan F. Taylor¹, Jeff M. Hamdorf¹, Jeremy Tan¹

The importance of developing protocols for patient care in many fields, including Bariatric Surgery, has been emphasised by many authors. Prospective data collection is essential in a successful clinical service to enable robust self-audit and promote the opportunity to compare clinical services and critically evaluate outcomes against external metrics. As part of the Perth Circle of Care Bariatric program, our surgeons and physicians are committed to thorough and regular follow up. In preparation for protocol improvement, we conducted an audit of our compliance with existing follow up protocols and data entry over three years spanning the introduction of electronic health records. In 2008, before the electronic system was in place, 114 (62%) of 183 postoperative patients were seen within 4 weeks of the six months post operative review point, yet 142 (78%) attended within 4 weeks of the scheduled 12 month review. The new system was implemented at the beginning of 2009, and appointments were more consistently adherent to the followup protocol. In 2010, we have demonstrated continued satisfactory adherence to the 6 month followup protocol. 10% of visits recorded changes in co-morbidities, which reflects our practice of thorough enquiry at initial assessment. This review of our collected data provides opportunity to improve our assessment of the patients at these sentinel reviews.

IS ROUTINE PREOPERATIVE POLYSOMNOGRAPHY NECESSARY IN PATIENTS HAVING BARIATRIC SURGERY?

¹DIVISION OF BARIATRIC/MINIMALLY INVASIVE SURGERY, STATEN ISLAND UNIVERSITY HOSPITAL, STATEN ISLAND NEW YORK.

KAREN E. GIBBS¹, ABDUL S. BANGURA¹, STELIN JOHNSON¹

Background: Obstructive sleep apnea (OSA) is recognized in obese patients. It maybe associated with significant perioperative morbidity and mortality. Polysomnography remains the gold standard for the diagnosis and assessment of the severity of OSA. Some Bariatric centers adopt a selective screening approach based on clinical suspicion; others, screen every patient. The aim of our study is to determine the prevalence of OSA , and whether BMI correlates with OSA prevalence. These results will form the basis for making a case for or against routine preoperative polysomnography in patients having bariatric surgery. Methods: A five year (2005- 2010) retrospective chart review was performed. Patients demographic and sleep study data was collected and analyzed. The severity of OSA was divided into mild, moderate or severe according to the American Sleep Disorders Association guidelines. Mild OSA is defined as an apnea/hypopnea index of 5-15, moderate as 15-30 and severe as ≥ 30 . Results were analyzed using statistical software. Results: 555 patient charts were reviewed. Of these, 359 (65%) had polysomnography. 309 (86%) of the 359 patients had OSA , 50 (14%) had no OSA. The overall prevalence of sleep apnea was 86%, mild OSA 18% (63/359), moderate OSA 17% (62/359), severe OSA 51% (184/359). The prevalence of OSA by BMI category was as follows: BMI (35-39.9 kg/m²): 92% (34/37). BMI (40-49.9 kg/m²): 82% (178/218). BMI (50-59.9 kg/m²): 92% (78/85). BMI (≥ 60 kg/m²): 100% (19/19). Conclusion: OSA is highly prevalent (86%) in our patient population, with most of them (51%) having severe OSA. OSA is highly prevalent in all BMI categories. However, a BMI ≥ 60 kg/m² correlates with a 100% prevalence of OSA. Based on these results, routine polysomnography is necessary as part of the pre operative work up for all bariatric patients .

IS ROUTINE PREOPERATIVE VENOUS DUPLEX SCREENING NECESSARY FOR PATIENTS HAVING BARIATRIC SURGERY?

¹DIVISION OF BARIATRIC/MINIMALLY INVASIVE SURGERY, STATEN ISLAND UNIVERSITY HOSPITAL, STATEN ISLAND , NEW YORK.

KAREN E. GIBBS¹, ABDUL S. BANGURA¹, STELIN JOHNSON¹

Background: Morbidly obese patients are perceived to be at high risk for perioperative deep vein thrombosis (DVT). Routine preoperative bilateral lower extremity venous duplex screening for DVT is a part of their preoperative work up in many Bariatric centers. The purpose of our study is to determine the prevalence of preoperative DVT in our patient population, and form a basis to make a case for or against routine preoperative venous duplex screening in bariatric patients. **Methods:** A five year (2005–2010) retrospective chart review was performed, of our prospectively maintained bariatric database. Demographic data and the incidence of preoperative DVT was analyzed using statistical software. **Results:** 555 patients underwent bariatric surgery during this five year period. 402 (72%) were females, and 153 (28 %) were males. The age range was 18– 67 (median age 43). 454 (82 %) of patients were Caucasians, 46 (8%) were Hispanics, 45 (8%) were black and 10 (2%) other race. The mean BMI was 47.1 (SD 6.8). 177 (32%) patients underwent the Roux-en-y gastric bypass procedure, while 378 (68%) had the lap band procedure. Only one patient with a history of chronic DVT was found to have a positive preoperative venous duplex. The incidence of preoperative DVT was 0.2%. **Conclusion:** The incidence of preoperative DVT is very low in these patients. Routine preoperative venous duplex screening is therefore unnecessary. We would suggest preoperative duplex screening in those patients with a previous history of DVT or evidence of significant venous insufficiency

Routine Preoperative Barium Swallow to detect Hiatus Hernia in Bariatric Surgery Patients: Is it Worthwhile?

¹North Queensland Obesity Surgery Centre, Mater Hospital, Townsville, Australia

John Avramovic¹, Laura Craig¹, Sam Baker¹, Christopher Aubrey¹

Routine Preoperative Barium Swallow to detect Hiatus Hernia in Bariatric Surgery Patients: Is it Worthwhile? Purpose To determine if routine preoperative barium swallow before laparoscopic bariatric surgery can predict those patients who require crural repair for hiatus hernia. Method 100 consecutive patients undergoing bariatric surgery underwent preoperative barium swallow to detect hiatus hernia. The radiological results were compared to the operative findings. Results 98 patients underwent a complete radiological study. 17 patients were reported to have a hiatus hernia radiologically. 37 patients were found to have a hiatus hernia at operation, and had a sutured anterior crural repair as per our unit protocol.

Operative Finding

Hiatus hernia No Hiatus Hernia Radiological Hiatus Hernia -
 7 10 Finding No Hiatus Hernia -

30 51 The true positive rate was 7%. The calculated sensitivity

for barium swallow in detecting a hiatus hernia prior to surgery was 21%. A positive barium swallow had a 41% probability of detecting a hiatus hernia subsequently confirmed at surgery.

Conclusion Preoperative barium swallow in morbidly obese patients undergoing laparoscopic bariatric surgery was poor at predicting the presence of hiatus hernia. Routine barium swallow prior to bariatric surgery for the detection of hiatus hernia was unreliable and not warranted.

Results		
	Hiatus Hernia at Operation	No Hiatus Hernia
Positive Barium Study	7	10
Negative Barium Study	30	51
	True Positive	True Negative

IS ROUTINE PREOPERATIVE UPPER ENDOSCOPY NECESSARY FOR PATIENTS HAVING BARIATRIC SURGERY?

¹DIVISION OF BARIATRIC/ MINIMALLY INVASIVE SURGERY, STATEN ISLAND UNIVERSITY HOSPITAL, STATEN ISLAND, NEW YORK.

KAREN E. GIBBS¹, ABDUL S. BANGURA¹, STELIN JOHNSON¹

Background: Upper endoscopy is a routine preoperative investigation in patients undergoing bariatric operations in most bariatric centers. However, the level of evidence supporting this recommendation is rather not strong. The rationale for performing upper endoscopy is to detect and treat lesions that might potentially affect the type of surgery performed. The aim of our study is to analyze the prevalence of the various findings on preoperative upper endoscopy in our patient population, and to evaluate how these findings impacted the choice of surgery. Methods: A five year (2005-2010) retrospective chart review was performed, of our prospectively maintained bariatric database. Patient demographics, and endoscopy findings were collated. The prevalence of endoscopic findings was analyzed using statistical software. Results: 555 patient charts were reviewed, 389 (70%) of these had preoperative upper endoscopy. 381 (98%) of the 389 patients that had endoscopy show positive findings, 8 (2%) patients had normal findings. More than 90% of patients had a combination of at least two findings. The prevalence of individual findings are as follows: GASTRITIS: 92% (359/389), HIATAL HERNIA: 35 % (137/389). ESOPHAGITIS: 24% (94/389), HELICOBACTER PYLORI: 13% (50/389), DUODENITIS: 5% (20/389), POLYPS: 2% (8/389), ULCERS: 0.2% (1/389), TUMORS (LIPOMA): 0.2% (1/389), BARRETT'S 0.2% (1/389). Conclusion: Upper endoscopy has a high incidence of positive findings (98%) in bariatric patients, the most common being gastritis and hiatal hernia. The findings did not change the operative management for these patients. Given that patients are evaluated for hiatal hernias at the time of surgery, preoperative endoscopy is not necessary to make this diagnosis. Thus, routine preoperative upper endoscopy is unnecessary in the work-up of bariatric patients.

Outcomes and options in the management of leak and gastric fistula after sleeve gastrectomy.

¹Mercy Bariatrics, Perth Australia

Leon Cohen¹

Leak and gastric fistula after sleeve gastrectomy remains one of the most feared and difficult complications to deal with after sleeve gastrectomy. The incidence in the published literature ranges from 2-5% and is increased in revisional surgery. Over the last 6 years we have performed over 850 sleeve gastrectomies and have had leaks in 24 patients, (3%) in addition there have been 19 infected perigastric haematomas in which no leak was demonstrated. Management of these patients can be divided into early, middle and late. All patients required early laparoscopic lavage and drainage. Immediate control of leak by oversew or restapling was possible in only two patients . Twenty two patients went on to develop chronic gastric fistulas with spontaneous resolution in 14. Eight patient have required delayed open gastrectomy or Roux en y internal fistula drainage as a salvage procedure for Chronic leaks. There has been one late death in this group during surgery at 6 months post leak. Weight loss in the leak group is comparable to uncomplicated patients. Use of additional manouveres including stenting, gluing , feeding jejunostomy, percutaneous drainage, Botox and plugging will be discussed.

Conclusion: Leak after sleeve gastrectomy is a devastating complication that can be difficult to manage. Using a sequential and logical approach the situation can be successfully managed with resolution of the leak and good outcomes.

Superior mesenteric venous thrombosis after revisional open sleeve gastrectomy

¹Toho University Sakura Medical Center, Chiba, Japan

Takashi Oshiro¹, Yutaka Yoshida¹, Daisuke Horibe¹, Mitsuru Oshiro¹, Makoto Nagashima¹, Atsuto Saiki¹, Shinichi Okazumi¹, Ryouji Kato¹, Kohji Shirai¹, Isao Kawamura¹

A 44 year-old man with morbid obesity (BMI49), hypertension, obstructive sleep apnoea-hypopnea and stasis phlebitis visited our hospital for revisional bariatric surgery for inadequate weight loss. He had had vertical banded gastroplasty (VBG) 20 years ago at other hospital. However he regained weight 7 years after the surgery probably due to staple line disruption and has been lost to follow-up. Preoperative gastroscopy confirmed staple line breakdown. Open sleeve gastrectomy as revisional surgery was successfully carried out. The patients underwent thromboprophylaxis using subcutaneous heparin calcium injection (5000 IU preoperatively, followed by 10000 IU daily postoperatively for 3 days). He developed fever and vague abdominal pain 14 days after the operation. His C-reactive protein and D-dimer were elevated to 20.4 mg/dl and 18.8 μ g/ml, respectively. Computed tomography (CT) revealed superior mesenteric venous thrombosis and mesenteric panniculitis. Intravenous heparin and oral warfarin were immediately started. The patient's symptom and laboratory data were improved thereafter. Follow-up CT showed no further development of thrombosis. He continues on oral warfarin (5mg per day). At three months after the operation, he achieved 30 kg weight loss and did well. Mesenteric venous thrombosis is a rare condition that should remain in the differential diagnosis for patients presenting with abdominal pain after the bariatric surgery. The prompt diagnosis and anticoagulant therapy can produce favorable outcomes.

Staple line complications during bariatric surgery

¹Department of General Surgery, Singapore General Hospital, Singapore
Shanker Pasupathy¹, Wai Keong Wong¹

Background: Bariatric surgery is accepted as the most effective treatment for morbidly obese individuals. In current practice, the majority of procedures are performed by laparoscopy. Hence surgeons are highly dependent on modern laparoscopic instrumentation, in particular endoscopic staplers. **Aims:** To investigate the incidence and impact of staple line failures during bariatric surgery. **Methods:** Retrospective review of all bariatric surgical procedures performed at the Singapore General Hospital. The use of staplers, and occurrence of intra-operative and post-operative complications related to stapling was noted. **Results:** From January 2003 to November 2010, 70 bariatric procedures were performed: 23 laparoscopic adjustable gastric bands (AGB) and 47 laparoscopic stapled procedures comprising 37 sleeve gastrectomies (LSG), 9 gastric bypass (LGB) and 1 bilio-pancreatic diversion (BPD). Re-inforcement with buttress materials or suture inversion of staple lines was not performed routinely. There were 3 intra-operative staple line failures (6%) resulting in haemorrhage (1 case) and gaping of the staple line (2 cases). All 3 failures were rescued by suturing and did not affect the surgical outcome. There were 3 post-operative staple line-related complications (6%) requiring re-operation within 24 - 48 hours. 2 patients had haemorrhage from the gastric staple line and 1 patient had an anastomotic leak from a jejunum-jejunostomy (which was preceded by intra-luminal bleeding and bowel obstruction by blood clots). All staple lines were repaired by suturing during re-operation and the patients did well post-operatively with no further incidents. **Conclusion:** Staple line complications are relatively common and may be due to instrument failures or technical failures by the surgical team. It is essential to thoroughly inspect all staple lines and have an effective rescue strategy at hand to manage failures before complications develop.

Drains are not necessary in laparoscopic gastric bypass

¹Surgery Department, Riyadh Military Hospital, Riyadh, Saudi Arabia

Haider Alshurafa¹

Objective: To prove that the surgical drains are not necessary in routine laparoscopic gastric bypass
Method: This is a retrospective review for the files of all patients who have underwent laparoscopic gastric bypass over one year with no surgical drains.
Results: There were 104 patients who have laparoscopic gastric bypass in the period between April 2009 and the end of the July 2010. All these patients have primary laparoscopic gastric bypass. They are 78 female and 26 males patients and the age range between 15 and 62 years with average age of 38.2 years. The BMI range between 34 to 53.8 kg/m², the mean is 44kg/m². All those patients have no surgical drain. There were no mortality, and one patient needed laparoscopic drainage of infected collection at left sub-phrenic region after 7 days from the operations. There is one patient needed needle aspiration of left pleural reactive effusion with conservative management of left sub-phrenic small hematoma. No other immediate post operative complications.
Conclusion: None use of surgical drain post laparoscopic gastric bypass has no major side effects and surgical drain should only used in selected cases and when there is indications.

Is the long staple line reinforcement needed or not during laparoscopic sleeve gastrectomy?

¹Department of Surgery, Soonchunhyang University School of Medicine

Yong Jin Kim¹, Kyung Yul Hur¹

Purpose: To evaluate the effect of staple line reinforcement during laparoscopic sleeve gastrectomy (LSG).

Method: Between April 2009 and September 2010, we did LSG for morbidly obese 81 patients. Staple line reinforcement was not done for early 30 patients (group 1) and was done late 51 patients (group 2). We compared the outcomes according to bleeding, leak, stricture or obstruction. Result: There were no differences in age, sex, preoperative weight and body mass index. Mean operation time was 129 minutes (group 1) & 103 minutes (group 2). ($p=0.027$) Staple line related complication was observed in 3 cases (1, leak/2, obstruction due to kinking) only in group 1. ($p=0.048$) There was no complication in group 2. Re-operation was done in a leak case and there were no in-hospital mortality. Conclusion: Although there are some limitation for retrospective analysis and learning curve, we conclude that long staple line reinforcement was effective to prevent staple line related complications.

The safety and advantages of applying clips in sleeve gastrectomy

¹Department of Surgery, King Saud University, King Saud University, Riyadh, Saudi ARABIA

Abdullah Aldohayan¹, Fahad Bamehriz², Mohhamad Alnaami³, Alanezy Naif⁴

Since the introduction of sleeve gastrectomy gained widespread popularity. However the complication of bleeding and leakage may limit its advantage. Leakage and bleeding are usually managed by suturing or other method. We study the efficacy and safety by using the clips on the staple line on 74 patients with BMI in more 40 over 2 years. The clips were applied on staple gastric line. There was leak or heamatoma need to be spiraled. More over applying the clips is shorter in time and easier than using suture. The usage of clips is safe, easy and decrease the bleeding may prevent leakage further extension of work may prove its metros

Laparoscopic Duodeno-jejunal Bypass with Sleeve: How we do it and management of a possible complication

¹Department of Bariatric and Metabolic Surgery, Gem Hospital and Research Centre, Coimbatore, India

Praveen Raj¹, Palanivelu Chinnusamy¹

Background: A few reports of Laparoscopic Duodenojejunal bypass with Sleeve has demonstrated it as a good alternative to Roux and Y gastric bypass in weight control and resolution of comorbidities. Such a procedure specially important in Asian countries where the incidence of Gastric cancer is high. DJB with sleeve gastrectomy is proposed as an ideal alternative to RYBG with the stated advantages -1. Presence of difficult to access gastric remnant in RYGB is at risk of cancer development in high endemic regions. Endoscopic surveillance is easy in sleeve gastrectomy. 2. Preservation of pyloric mechanism prevents dumping syndrome. 3. Reduced alimentary limb tension. With very few reports, the technique of this procedure is yet to be standardized. **Video:** In this High Definition video we demonstrate our technique of Laparoscopic Duodeno jejunal bypass with Sleeve, Sleeve being performed 5 cm from the pylorus on a 36F bougie, wherein the duodenojejunal anastomosis is done in a retrocolic fashion in end-end hand sewn method. The biliopancreatic limb length is 75 cms and that of the Roux limb is 100cm, similar to a standard Roux en Y gastric bypass. In the second part of the video, we show a case of internal herniation in the retrocolic window 1 month post-op in a patient operated with Duodenojejunal bypass and how we managed the same.

Gastric Sleeve is a single restrictive procedure?

¹Clinica Universitaria de Cirurgia 2, Hospital de Santa Maria / Faculdade de Medicina de Lisboa, Lisboa, Portugal

Joao M. Coutinho¹, Fatima M. Carepa¹, Jose S. Girao¹, Carlos M. Ferreira¹, Helena P. Proenca¹, Carla M. Melo¹, Guilhermina C. Cantinho¹, Henrique B. Castelo¹

The authors present in their 221 gastric sleeve patients the criteria in which they consider gastric sleeve is both a metabolic and restrictive procedure. The improvement of the associated diseases, visceral fat, BMI and EWL, the levels of ghrelin, obstatin, ghrelin/obstatin ratio, PP-YY, the gastric emptying before and after surgery, are evaluated in this series two years after surgery to demonstrate both metabolic and restrictive features of this procedure.

GASTRIC SLEEVE AS TREATMENT FOR MORBID OBESITY: ANALYSIS OF 3 YEARS

¹Clinica Universitaria de Cirurgia 2, Hospital de Santa Maria / Faculdade de Medicina de Lisboa, Lisboa, Portugal

Joao M. Coutinho¹, Fatima M. Carepa¹, Jose S. Girao¹, Carlos M. Ferreira¹, Dulce A. Antunes¹, Mariana M. Machado¹, Filipa A. Andrade¹, Helena P. Proenca¹, Antonio F. Fernandes¹, Henrique B. Castelo¹

The authors analyze the results of their series of GASTRIC SLEEVES as treatment of patients with morbid obesity. The study includes 221 patients evaluated at outpatient follow-up during two years of post-op, according to the following protocol: Clinical Assessment, % of weight loss, decreased BMI and % EWL; -Evolution of co-morbidities; Determination of ghrelin pre-and post-operative, as well as the relationship ghrelin / obestatin; Changes in gastric emptying, compared to pre-operative, 3, 6, 12 and 24 months. The Authors also examine morbidity and mortality in the series.

Laparoscopic Adjustable Gastric Banding: 7-year results in Taiwan

¹Department of Surgery, Min-Sheng General Hospital

YEN HAO SU¹, WEE JEI LEE¹, KUANG HAN SER¹, JUNG CHIE CHEN¹, SHU CHUN CHEN¹, YI CHIH LEE¹

Objectives: Laparoscopic adjustable gastric banding (LAGB) is a pure restrictive bariatric surgery. We had reported our short-term results of LAGB in Taiwan. In this study, we report the long-term results of LAGB in Taiwan. **Materials and Methods:** From January 2002 to June 2010, 246 consecutive patients with morbid obesity underwent LAGB in our department. Mean age was 32.1 years and mean BMI 39.8 Kg/m². The demographic data and post-operative results were recorded. **Results:** All procedures were performed laparoscopically with no conversion to open surgery. The major and minor complication-rate was 0% and 3% respectively. Mean BMI from 39.8 Kg/m² to 35.4, 36.3, 34, 33, 31, 30.7 and 32.6 at 1, 2, 3, 4, 5, 6 and 7 years respectively, with 80% follow-up. Revision rate was 13% (33/246). The most common cause of revision bariatric surgery was failed to lose adequate weight (20/32, 62.5%), poor quality of life (5/32, 15.6%), and band slippage (3/32, 9.3%). **Conclusion:** LAGB is safe and effective in weight reduction and improvement of quality of life. However, a late surgical re-intervention rate of 13% was observed with conversion to another bariatric procedure was 8%.

The experience of laparoscopic mini-gastric bypass surgery in single institute of southern Taiwan.

¹Department of Surgery, National Cheng Kung University Hospital, Tainan, Taiwan ²Min-Sheng General Hospital

Kuo-Ting Lee¹, Wei-Jei Lee²

Introduction: Gastric bypass surgery is an effective treatment for morbidly obese patients. In Taiwan, the incidence of morbid obesity increases. More obese patients would have bariatric surgery. We presented the clinical results of laparoscopic mini-gastric bypass surgery in our hospital. **Method and Material:** From 14, Jan, 2009 to 17, Nov, 2010, there were thirty patients underwent bariatric surgery in National Cheng Kung University Hospital. Twenty-three patients (12 women, 11 men) underwent mini-gastric bypass surgery. Mean Body mass index (BMI) was 39.8 (30.7-55.7). All the procedures were completed laparoscopically. No conversion procedure occurred. We retrospectively analyze the patients' clinical data and outcomes. **Results:** All patients had weight loss after surgery. Two patients had post-operative complications. One female patient had pituitary tumor hemorrhage 4 days after surgery. Later she had craniotomy, and recovered. She had the hospital stay 25 days. Two months later, she totally recovered. Another female patient had post-operative upper gastrointestinal hemorrhage immediately after surgery. She had the conservative treatment. The bleeding stopped one day later. One female was dead 25 days after surgery because of acute respiratory distress syndrome. The mean hospital stay was 6.4 days. All the patients had regular follow-up visit in our hospital. **Conclusion:** The laparoscopic mini-gastric bypass surgery could have an ideal body weight reduction, and it is a feasible surgery for morbidly obese patients in southern Taiwan.

The introduction of laparoscopic sleeve gastrectomy: initial three clinical experiences

¹The Department of Gastroenterological Surgery, University of Osaka, Osaka, Japan

Yasuhiro Miyazaki¹, Shuji Takiguchi¹, Kiyokazu Nakajima¹, Yukinori Kurokawa¹, Hiroshi Miyata¹, Makoto Yamasaki¹, Yoshiyuki Fujiwara¹, Masaki Mori¹, Yuichiro Doki¹

Introduction: Recently, Sleeve gastrectomy (SG) has been proposed as potential single restrictive bariatric procedure. In fact, clinical outcome in terms of weight loss and resolution of comorbidities encouraged and stimulated the diffusion of SG as a primary bariatric procedure. Based on the above, laparoscopic sleeve gastrectomy (LSG) was introduced for primary procedure for morbid obesity in our institution. The objective of this study was to evaluate the feasibility and safety of LSG at the time of introduction for initial three cases. **Objectives:** LSG was introduced in our institution in March 2010 and performed in 3 patients (1 male, 2 females). Case 1: 26 year-old male, BMI 48.1 kg/m², his comorbidities with obesity were insulin dependent diabetes mellitus (DM), hyperlipemia, fatty liver, insomnia, and sleep apnea syndrome, Case 2: 24 year-old woman, BMI 44.1 kg/m², with slight mental retardation, and her comorbidities were right cardiac failure and pulmonary hypertension, Case 3: 43 year-old woman, BMI 44.3 kg/m², with psychiatric disorder, and her comorbidities were the same as case 1. **Results:** LSG was completed in 3 patients without conversion to laparotomy. Each operating time (minutes) was 150, 250, 176 and estimated blood loss (ml) was 20, 540, 30, respectively. No major postoperative complications directly related to LSG were noted. All patients showed uneventful postoperative recovery, with their oral intake resumed in 2 days and median hospital stay of 15 days. They showed expected effect on body weight loss, and remarkable improvement of DM in case 1 and 3 resulted in no need for insulin injection. **Conclusion:** LSG was safely introduced as primary procedure for morbid obesity in our institution.

Sleeve Gastrectomy in combination with Duodeno-Jejunal Bypass. Three year Period Results.

¹State Hospital, Ufa, Russia ²Bashkirian University of Medicine

Evgeny E Semenov¹

Background: A new surgical procedure - Sleeve gastrectomy with Roux-en-Y Duodeno-Jejunal bypass (SG-DJBP) is being performed in the world since 2007. They generally brought to successful results but some certain indications to the operation might be developed.

Material and methods: We present results of four SG-DJBP procedures performed since July 2007 to September 2010. The mean age of patients was $38,1 \pm 7,3$ (29-48) years, mean BMI- $47,4 \pm 7,8$ kg/m² (38,9-59,8), initial weight- $130,6 \pm 22,6$ kg (111-159). A Roux-en-Y procedure was performed with a biliopancreatic loop 60 cm and alimentary loop-100 or 150 cm depending on initial BMI (less or more 50 kg/m² respectively) four operations within a period of follow up control for 3 years and ± 6 months. Two operation were performed with alimentary loop-180 with the follow up control up to 1 year. A bandage was placed on the gastric tube intersurgically to two patients.

Results: All the patients tolerated the procedure well. During 6 months the percentage of %EWL was $45,7 \pm 5,1\%$. Up to 1 year all the patients could lose more than $53,2\%$ EWL (47,0 - 64,4%). Up to 3 years 4 patients could lose more than $60,7\%$ EWL (52,6 - 68,6%). The patient with a bandage had the best result - 68,6%. All the patients have a tendency to further weight gaining up to 3-8kg.

Conclusion: The positive influence on the carbohydrate and lipid metabolism is noticed, all the patients have a slight weight gaining, but there is a less weight gaining with a bandage. It is connected with the stomach extension and lesser malabsorption in contrast to BPD, a bandage gives additional restriction. SG-DJBP is an effective and safe surgery with the slightest metabolic disturbances. It might be offered to patients with BMI > 50 kg/m². However, it is necessary to control a follow up period and compare it with those of SG and BPD.

A case of migration of gastric band

¹Clinica Universitaria de Cirurgia 2, Hospital de Santa Maria / Faculdade de Medicina de Lisboa, Lisboa, Portugal

Joao M. Coutinho¹, Andreia C. Barao¹, Jose S. Girao¹, Fatima M. Carepa¹, Ines L. Leite¹, Graciela M. Matias¹, Antonio F. Fernandes¹, Antonio S. Ruivo¹, Henrique B. Castelo¹

Bariatric operations produce weight loss as a result of two factors. One is restriction of oral intake. The other is malabsorption of ingested food. All bands work on the principle of restriction of oral intake by limiting the volume of the proximal part of the stomach. Their major advantage is adjustability. Their most common complications include acute obstruction of the stoma, infection, prolapse of the band, attached to the trocar ports and erosion / migration of the band, which is a rare complication (3%). The AA present a case of migration of gastric band, four years after his placement in a patient with morbid obesity, which starts with dyspepsia, nausea and fever and whose imaging and endoscopic study revealed migration of the band with gastric fistula.

Endoluminal Surgery (StomaphyX device). An alternative to the revision surgery?

¹Clinica Universitaria de Cirurgia 2, Hospital de Santa Maria / Faculdade de Medicina de Lisboa, Lisboa, Portugal

Joao M. Coutinho¹, Jose S. Girao¹, Fatima M. Carepa¹, Adreia C. Barao¹, Elisabete S. Ferreira¹, Carlos S. Silva¹, Graciela M. Matias¹, Antonio S. Fernandes¹, Henrique B. Castelo¹

The Authors analyze the results of Endoluminal Gastroplasty "StomaphyX" obese patients already receiving prior to bariatric surgery. The 15 patients in whom technique was used, 4 had previously undergone gastric Sleeve, 10 gastric bypass and 1 placement of a gastric band. All patients remained liquid diet / paste for 3 months postoperatively and were evaluated by Esophagogastroduodenoscopy at 6 months, confirming the maintenance of fasteners. We evaluated the weight loss at 1, 3 and 6 months of surgery as well as the improvement the feeling of satiety reported by all patients pre-application of the technique. The Authors conclude the benefits of endoluminal gastroplasty and advantages of this technique which can be used repeatedly in the same patient.

A successful case of safety weight loss using formula diet in alcoholic cardiomyopathy with obesity

¹Internal medicine, Toho University Sakura Medical Center, Chiba, Japan

Hiroshi Mikamo¹, Kazuhiro Shimizu¹, Keiichi Hirano¹, Kaka Hiro Nakagami¹, Masayo Suzuki¹, Mao Takahashi¹, Takuo Iiduka¹, Yuukou Sugiyama¹, Hirohumi Noike¹, Kouji Shirai¹

Introduction: We often experiences weight loss improve cardiac function in obesity with heart failure (HF). Recent study shows obesity may lead to left ventricular hypertrophy and systolic dysfunction. On the other hand, alcoholic cardiomyopathy is a common cause of DCM-like change. Alcohol effect on cardiac function can usually be reversible by abstinence from alcohol. Since alcohol addict often are complicated with metabolic syndrome, they should be treated comprehensively. Therefore, it is important to reduce weight of these patients. So, modern formula diet has been recommended as dietotherapy. However there are few reports on the use of formula diet for them. Previous report showed healthy obese patients died suddenly during use of the liquid-protein-modified-fast diet 30years ago. The cardiac accident appears to depend on diet duration and on whether protein and mineral nutritional status are maintained. Pronounced weight loss causing lack of these nutrients has been thought to produce a decrease in myocardial fiber size. However, the moderate caloric restriction could be performed enough safely by the modern formula diet including protein, vitamins, a mineral. We report a case of weight loss using formula diet after acute heart failure (AHF) treatment. **Case report:** 36-year-old obese male was hospitalized with dyspnea. On admission, his weight was 103.3kg, BMI 32.6kg/m². Blood pressure was extremely high. Examinations revealed severe cardiac dysfunction, enlarged heart and pulmonary congestion. He had a ten-year history of alcohol abuse. As above, AHF due to alcoholic cardiomyopathy with obesity and hypertension was diagnosed according to the absence of coronary disease. After AHF therapy, weight loss using formula diet and cardiac rehabilitation were started. After these therapies, weight was reduced to 82kg. The cardiac function was improved without any cardiac accident during the hospital days. **Conclusion:** Weight loss using the formula diet for obese patient with HF was safe and useful.

Gastric Sleeve and Metabolic Syndrome

¹Clinica Universitaria de Cirurgia 2, Hospital de Santa Maria / Faculdade de Medicina de Lisboa, Lisboa, Portugal

Joao M. Coutinho¹, Fatima M. Carepa¹, Jose S. Girao¹, Carlos M. Ferreira¹, Helena C. Pinto¹, Henrique B. Castelo¹

The Metabolic Syndrome (MS) is a complex disease, associated with an increased cardiovascular risk, due to central fat distribution and insulin resistance. Today there are several treatments for MS, including bariatric surgery, that improve that cardiovascular risk. The authors present a group of 48 patients with MS, submitted to gastric sleeve procedure, and evaluate their BMI, body weight and MS at 6, 9 and 12 months after surgery. The MS improved with weight loss in all the patients, sometimes with full remission. The authors conclude that gastric sleeve surgery is a good option for the treatment of MS in obese patients.

Our experience in treatment of metabolic syndrome

¹Faculty Surgery Clinic, State Medical University n.a. Pavlov, Saint-Petersburg , Russia

Michael B. Fishman¹, Valery Sedov¹

Methods. A total of 439 patients underwent various bariatric procedures for 9 years were investigated. In 391 cases laparoscopic operations were done. LAGB was performed in 307 patients. Median age was 37. There were 253 (82,4%) women and 54 (17,6%) men. Average preoperative BMI was 42 kg/m² (35 to 54). Beginning from 2007 we had performed 45 patients underwent LSG, 11 - LDS, 28 - LRYGB. Median age for the patients was 36 years, of them 63 (75%) were females and 21 (25%) males. BMI was in limits of 41-90 kg/m². In the cohort of patients who underwent LAGB 68 (22,4%) suffered from metabolic syndrome (MS), LSG - 12 (26,6%), LDS - 100%, LRYGB - 16 (57,1%) respectively. **Results.** At North-West Russia obesity was found in 41,4%. After LAGB during first two years of follow up sugar level in blood became normal in 156 (52,3%) patients. Blood pressure became normal in 103 (34,5%). BMI was in limits of 26 - 38 kg/m² with the same tendency in the following years. We managed best weight reduction mainly in women younger then 39 y. o., with BMI lower then 45 kg/m². In 46 (15,4%) patients there were complications, among them 38 (12,7%) cases of bandage slippage. 17% of the patients were reoperated. Symptom-complex, that different MS was lost after LDS in 100 % and in 75% after LRYGB. No complications were identified after LSG, LDS and LRYGB. **Conclusion.** LAGB is an effective method of treatment for the patients with BMI lower then 45 kg/m² in younger age cohort. LSG can be an alternative for LAGB. LDS and LRYGB are most effective operations in treatment of MS.

Irregular CPAP use induced visceral fat accumulation in obstructive sleep apnea regardless of daily sleepiness

¹Department of Cardiovascular Center, Sakura Hospital, Medical Center, Toho University, Chiba, Japan

²Department of internal medicine, Sakura Hospital, Medical Center, Toho University Chiba, Japan

³Department of ophthalmology, Sakura Hospital, Medical Center, Toho University Chiba

mao takahashi¹, takashi hitsumoto², tomoaki shiba³, kohji shirai²

Background: Obstructive sleep apnea syndrome (OSAS) is a common disorder in obese subjects. Occasionally OSAS causes excessive daily sleepiness (EDS) and resulted in adipose tissue accumulation. The other hand, there were many people who do not have daily sleepiness despite of sever OSAS. But the effect of continuous positive airway pressure (CPAP) treatment on visceral fat accumulation (VFA) in OSAS without sleepiness has not been known.

Material and Methods: VFA and subcutaneous fat accumulation (SFA) were assessed by CT before and 1 year after CPAP treatment in 47 OSAS patients (mean apnea and hypopnea index/Epworth sleepiness scale; 40.7 times/h/5.4±4.5). The sample was divided according to CPAP therapy, with regular users defined as a minimum nightly use of (≥4 h /day ≥75%/month); 27 subjects were regular and 20 were irregular CPAP users.

Results: Neither the regular CPAP use group nor irregular CPAP use group showed any change in body mass index or subcutaneous fat area levels. VFA increased significantly after 1 year of CPAP treatment in irregular user (171.3±68.5 to 161.2±72.4 cm² (-3.4±5.1%) vs 170.0±75.3 to 192.5±66.7 cm² (+13.4±14.6%), P<0.0061)

Conclusions These data suggested that irregular CPAP use induce visceral fat accumulation in patients with severe OSAS regardless of EDS. OSAS may have significant effects on the visceral fat accumulation without EDS.

Individualized intervention with Metabolic Stem Cell system after bariatric surgery

¹Department of Complementary & Alternative Medicine, Osaka University Graduate School of Medicine

²Department of Metabolic Medicine, Osaka University Graduate School of Medicine ³Department of Gastroenterological Surgery, Osaka University Graduate School of Medicine

Miki Sakaue¹, Kazuhisa Maeda^{1,2}, Kei Hirai¹, Yasuhiro Miyazaki³, Shuji Takiguchi³, Yuichiro Doki³, Toshinori Ito^{1,3}

(Background) In addition to reducing body weight, ameliorating fat dysfunction by improving hypoadiponectinemia is crucial in protection against the development of metabolic syndrome. We recently started a Weight Management Clinic in order to perform integrated and individualized intervention for obese patients. Here we report 3 cases whose metabolic stem (MSC) cell as adipocyte precursors were obtained during bariatric surgery that can be used as a novel screening system for selecting patient-suitable drugs or supplements to enhance adiponectin secretion. (Method) MSC were prepared from fat tissues collected from 3 patients during bariatric surgery. Case1: 24yo male BMI 52 adiponectin 3.5ug/ml Case2: 24yo female BMI 46 adiponectin 5.3ug/ml Case3: 40yo female BMI 40 adiponectin 1.7ug/ml MSCs were differentiated in cultures into mature adipocytes and treated with drug or supplementation medium every 48 hours. Levels of adiponectin were measured in the culture medium. Dividing the adiponectin secretion on day 12 by that on day 10 provided an estimate of adiponectin-producing activity in culture. (Result) Using this score, we assessed 80 candidate agents in a 96-well plate. Moreover, we identified some novel adiponectin up-regulatory effects for several substances, including Turmeric and Ryukyu herb. Even after weight reduction achieved by surgery, additional enhancement of adiponectin was observed in all cases with suitable supplementation. (Case1: adiponectin 7.4 ug/ml, Case2: adiponectin 10.1 ug/ml, Case3: adiponectin 2.1ug/ml) (Conclusion) MSC system is able to identify potential responders to specific agents. This can be applied to post-operative individualized intervention for morbid obese patients.

Diabetic complications stratified by past maximum body mass index

¹Center of Diabetes, Endocrine and Metabolism, Toho University Sakura Medical Center ²Department of Internal Medicine, Toho University Sakura Medical Center

Takashi Yamaguchi¹, Atsuhito Saiki¹, Noriko Ban¹, Hidetoshi Kawana¹, Daiji Nagayama¹, Ayako Nagumo¹, Masahiro Ohira¹, Kei Endo¹, Tomokazu Oyama¹, Yoh Miyashita¹, Kohji Shirai²

Background: In Japan, prevalence of obesity (especially high degree obesity values $35 < \text{BMI}$) is relatively low. Therefore, relationship between degree of obesity and development of diabetic complications has not been fully understood. **Objective:** To investigate the impact of past maximum BMI on the subsequent development of diabetic complications. **Methods:** One hundred inpatients with type 2 diabetes were divided into 3 groups according to each patient's past maximum BMI; Group A: $25 < \text{BMI} < 30$, Group B: $30 < \text{BMI} < 35$ and Group C: $35 < \text{BMI}$. There were no significant differences in mean age, duration of diabetes and HbA1C among all groups. And we compared the prevalence of diabetic complications as well as other obesity-related complications among groups retrospectively. **Results:** Mean past maximum BMI of each group (Group A, B and C) were 28.4, 32.1 and 37.3 respectively. In group C, the difference between past maximum BMI and mean current BMI (30.2) was greater than in other groups. A rate of Insulin use was significantly higher in Group C than in Group A (Odd ratio: 6.3). With increase in past maximum BMI, the prevalence of diabetic retinopathy, nephropathy and neuropathy became higher (Odd ratio; retinopathy: 3.4, 7.6, nephropathy: 3.9, 12.3 and neuropathy: 6.9, 14.8). The prevalence of diabetic macro angiopathy (includes coronary artery disease, cerebral infarction and peripheral artery disease) also tended to be higher in Group C than in other groups (Odd ratio: 2.1, 2.7). Arterial stiffness (evaluated by cardio-ankle vascular index) was significantly higher in Group C than in Group A (7.7vs9.8). The prevalence of the other obesity-related complications (sleep apnea syndrome, osteoarthritis, liver dysfunction) showed similar results. **Conclusion:** Degree of obesity may associate with future development of obesity-related complications, especially with diabetic complications.

Background: The impact of a degree of obesity on the development of diabetic and other obesity-related complications is not fully understood. Objective: To investigate the impact of a maximum BMI in the past history on the development of diabetic and other obesity-related complications. Methods: One hundred inpatients with type 2 diabetes were divided into 3 groups according to each patients maximum BMI in the past history (max BMI); Group A: $25 < \text{BMI} < 30$, Group B: $30 < \text{BMI} < 35$ and Group C: $35 < \text{BMI}$. And we compared the prevalence of diabetic complications as well as other obesity-related complications among groups. Results: Mean max BMI (Group A, B and C) were 28.4, 32.1 and 37.3 respectively. In all groups, mean present BMI (25.8, 27.4 and 30.2) were significantly lower than those of max BMI. There were no significant differences in mean age, duration of diabetes and HbA_{1c} among all groups. A rate of Insulin use was significantly higher in Group C than Group A (Odd ratio: 6.3). The prevalence of diabetic retinopathy, nephropathy and neuropathy became higher accompanied with increased max BMI (Odd ratio; retinopathy: 3.4, 7.6, nephropathy: 3.9, 12.3 and neuropathy: 6.9, 14.8). The prevalence of diabetic macro angiopathy (includes coronary artery disease, cerebral infarction and peripheral artery disease) tended to be higher in Group C than the other groups (Odd ratio: 2.1, 2.7). Arterial stiffness (evaluated by cardio-ankle vascular index) was significantly higher in Group C than Group A (7.7 vs 9.8). The prevalence of the other obesity-related complications (sleep apnea syndrome, osteoarthritis, liver dysfunction) showed similar results. Conclusion: A degree of obesity in the past history might be associated with the development of obesity-related complications, especially with diabetic complications.

Psychosocial Assessments of Japanese Severe Obese Patients before Intra-gastric Balloon Placement Therapy.

¹Department of Stress Sciences and Psychosomatic Medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan ²Department of Gastrointestinal Surgery, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan ³Department of Diabetes and Metabolic Diseases, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

Shuji Inada¹, Yoshiyuki Takimoto¹, Kazuhiro Yoshiuchi¹, Fumihiko Hatao², Yusuke Hada³, Sumie Okahata³, Toshimasa Yamauchi³, Takashi Kadowaki³, Akira Akabayashi¹

Bariatric surgery was not so popular in Japan as in other countries. Instead, intra-gastric balloon placement therapy has been performed in our hospital since 2007. The results of bariatric surgery and intra-gastric balloon placement therapy could be influenced by patient's psychosocial factors, and vice versa. Therefore it is important to assess psychosocial factors before procedures. The purpose of the present preliminary study is to explore characteristics of psychosocial factors of Japanese obese candidates for intra-gastric balloon placement therapy. Eligible patients for this study were adult obese ones classified to class II or higher (body mass index [BMI] was over 35kg/m²) who applied to receive intra-gastric balloon placement therapy. Thirteen male (44.8±8.7 years) and 14 female patients (51.4±9.6 years) were candidates for the therapy and received an initial psychosocial assessment between 2007 and 2010. Mean BMI was 42.6kg/m² in the male patients and 43.2kg/m² in the females. Five patients had psychiatric comorbidity. The psychosocial assessment included an interview about weight history, lifestyle, and psychiatric history, and questionnaires about mood states, coping skills, self-esteem, and social support. We evaluated correlations between initial BMI and the psychosocial factors. There was a significant negative correlation between initial BMI and problem-focused coping ($r = -0.485$, $p = 0.012$). In the subscales of the problem-focused coping, planful problem solving ($r = -0.393$, $p = 0.047$) and confrontive coping ($r = -0.473$, $p = 0.015$) had negative correlations with BMI. In conclusion, heavier patients might have poorer ability to solve their own problems including their weight and diet. Because this study was cross-sectional, it is necessary to assess prospectively the influence of preoperative psychosocial factors on outcomes of intra-gastric balloon placement therapy and vice versa.

First experience of laparoscopic sleeve gastrectomy for morbid obesity in our OR

¹Chiba University Hospital, Nursing ²Research Center for Frontier Medical Engineering, Chiba University

³Department of Frontier Surgery, Graduate School of Medicine, Chiba University

Megumi Kanoh¹, Norihiro Kameda¹, Yuki Miyake¹, Mami Yoshida¹, Sizue Komoda¹, Hiroshi Kawahira², Toshiyuki Natsume³, Hideki Hayashi², Hisahiro Matsubara³

Introduction: Laparoscopic approach to bariatric surgeries has been penetrating into our country and first case of laparoscopic restrictive surgery for morbid obesity has been performed until 2010 in our hospital. Perioperative nursing experience of the case will be reported. *Patient and Methods:* A 39-year-old, 132 kg man (height 170cm, BMI 45.7) was planned to undergo laparoscopic sleeve gastrectomy for weight reduction under general anesthesia. His medical background included hypertension, sleep apnea and gall stone. Setting in operating theatre was designed on the basis of that for laparoscopic gastrectomy for gastric cancer in our OR. The patient was positioned supine with thighs abducted and 30 degrees reverse Trendelenburg. Lithotomy positioning device (Levigator™), which was routinely used for the operating position of laparoscopic gastrectomy, were revealed to be too small for the patient, thus, leg section of electric operating table was switched between right and left part to obtain wide area for abducted thighs. Intermittent pneumatic compression devices were also equipped during surgery. *Results:* Operative procedures were completed within 3 hours with little blood loss. However, the patient noted numbness and mild foot drop of right leg right after surgery. Examination by a neurologist on the second postoperative day revealed right peroneal palsy. Slow, but complete recovery occurred over three month. *Discussions:* Photographical review of the OR setting could not reveal any mechanical compression of the site. However, repeated checkup of the whole body of patient during operation was suggested to be important to this type of surgery.

The effects of regular advice-messages via to internet with cell phone on diet using formula diet supplements.

¹Graduate School of Medicine, Study of Medical System Management, Nagoya University ²Clinical Pharmacy, Department of Pharmacy, Kinjo Gakuin University ³Information Culture, Kinjo Gakuin University
Hiroshi Gohma¹,Mika Asano²,Yuko Aoyama¹,Rina Fujii²,Konatsu Hayashi²,Chihiro inoue²,Tomomi Kawanishi²,Katsuo Amioka²,Makoto Nakao²,Sin-ichi Sugiura¹

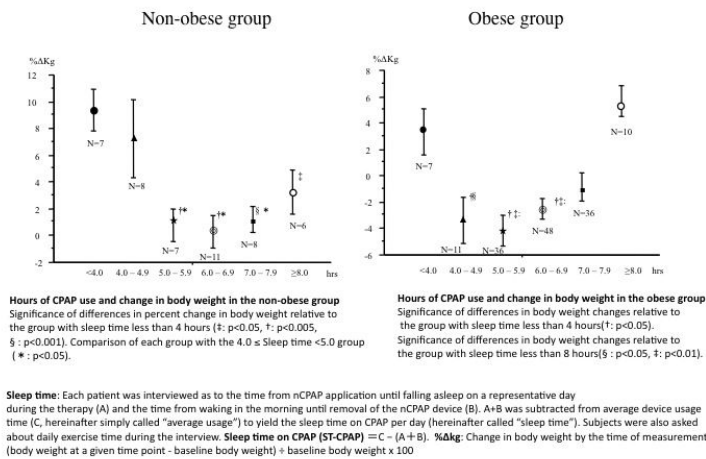
Since WHO has proposed the criteria of metabolic syndrome in 1998, obesity is focused as a risk factor of life-style related diseases. In the result, many formula diet supplements which aimed weight loss have been market in the world. Although the formula diet supplements have nutritional availability, some users fail to loss their weight due to their lack of knowledge, or gain weight due to the rebound phenomenon. Therefore it is thought that the formula diet supplements are not effective to weight loss, despite their price. However we propose that the users might be able to be loss their weight by giving advice-messages regularly. In this study, we evaluated whether the regular advice-messages via to internet with cell phone were effective to the subjects who intake formula diet supplements. A total 20 subjects with BMI more than 23 were recruited. They were divided into two groups by an advice group or no advice group. Each group received formula diet supplements for 12weeks, and was provided consecutive 12 weeks as follow up. The advice group was provided an advice-messages everyday during trial, while the no advice group was provided nothing during same period. We evaluated weight and BMI as parameter in this study.Each group lost their weight compared to their initial value. No significant difference was indicated between both groups in their weight and BMI. This study was finished the period that each group intake the formula diet supplements. Follow up for 12 weeks is performed at present. We hypothesize that the deference is indicated between both group in their weight and BMI during follow up period. We will report the effect of advice-messages during follow up period in the congress.

Hours of nightly nasal continuous positive airway pressure use is associated with weight change in patients with obstructive sleep apnea-hypopnea syndrome

¹Department of Laboratory Medicine, Iwate Medical University School of Medicine, Division of Behavioral Sleep Medicine ²Department of Laboratory Sleep Medicine, Iwate Medical University School of Medicine ³Department of Respiriology, Hachinohe Red Cross Hospital
 Tsuguo Nishijima¹, Keisuke Hosokawa¹, Sayaka Ishido³, Susumu Takahashi¹, Hiroshi Kagami³, Keiji Suzuki¹, Akira Suwabe¹, Shigeru Sakurai²

Nasal continuous positive airway pressure (nCPAP) is known to alleviate sleep-related disturbances and may reduce the risk of hypertension and cardiovascular disease. Using an electronic database of number of hours of nightly CPAP use, we estimated the habitual sleep time of patients during nCPAP and examined its relationship to association with changes in body weight. In obese patients with obstructive sleep apnea-hypopnea syndrome (OSAHS), percent weight gain over 9 years displayed a U-shaped relationship with the minimal weight gain in patients with 5 to 6 hours of habitual sleep. In contrast, weight gain was the largest in patients with sleep time of less than 4 hours per night or more than 8 hours per night. These results suggest that changes in body weight in patients with OSAHS are associated more with habitual sleep time.

Fig. 1: Hours of CPAP use and change in body weight



Title: Successful application of a new stapler with reinforcement installed to sleeve gastrectomy in bariatric surgery

Hiroko TORII MD*, Yuhki OZAMOTO MD*#, Takeshi TOGAWA MD, PhD*#, Isao KAWAMURA MD, PhD+, Akeo HAGIWARA MD, PhD#

*Kusatu General Hospital, #Doshisha University, +Kamagaya General Hospital

In patients undergoing sleeve gastrectomy, the gastric wall is often thick and readily breakable due to adipose tissue accumulating in the submucosa and the muscularis. When sleeve gastrectomy is performed on such patients, conventional staplers often break or fail to suture the thick and fragile gastric wall, sometimes resulting in serious post-operative complications such as bleeding and/or anastomotic leakage.

As a countermeasure for this problem, we have used a newly available type of stapler, which sandwiches a strip of reinforcement between the staples and the tissue. By stapling the gastric wall from the reinforcement layered atop, the stapler prevents breaking of the tissue and ineffective stapling. The layer of the reinforcement and the gastric wall seems to have a proper physical strength for stapling. Since the introduction of the device, we have experienced no post-operative complications stemming from suture errors. This new stapler can be useful in sleeve gastrectomy.

Enhanced glucagon-like peptide (GLP-1) secretion leads to rapid improvement of glucose tolerance and insulin secretion after laparoscopic sleeve gastrectomy (LSG)

Satoshi Ugi¹, Hiroshi Yamamoto², Chisato Kusunoki¹, Azusa Kamo¹, Tetsuya Hashimoto¹, Yoshihiko Nishio¹, Kazunori Kasama³, Toru Tani², Atsunori Kashiwagi¹, and Hiroshi Maegawa¹

Departments of ¹Medicine and ²Surgery, Shiga University of Medical Science, and ³Yotsuya Medicalcube Hospital

【Objective】 Bariatric surgery, especially Roux-en-Y gastric bypass (RYGP), has been shown to resolve T2DM. Although the mechanism by which RYGP improves T2DM have yet to be fully determined, the most possible mechanism of this is assumed to be increment of GLP-1 secretion. LSG has been designed as the first of a two-stage procedure for the high-risk, super-obese patient. Recently LSG has been studied as a single-stage procedure because of excellent weight loss and low incidence of complications. However, little is known about the impact of LSG on glucose homeostasis. We performed LSG in two diabetic patients and both showed rapid and profound improvement of glucose tolerance after LSG.

【Methods】 We performed glucose tolerance test (GTT) before and twenty days after surgery and analyzed area under the curve of plasma glucose, insulin and GLP-1 ; AUC_{glucose} (mg/dl·hr), AUC_{insulin} (µU/ml·hr), $AUC_{\text{GLP-1}}$ (pmol/l·hr), and fasting ghrelin levels.

【Results】 The first case had received metoformin 750mg/day for three years. HbA1c was 6.3%. Twenty days after surgery, BMI decreased from 38.0 to 36.4 (-4.1kg). Although AUC_{glucose} slightly decreased (510 to 457), both AUC_{insulin} and $AUC_{\text{GLP-1}}$ dramatically increased (122 to 216 and 6.4 to 68.5, respectively). Three months after surgery, HbA1c was 5.5% without medication. Second case also showed great improvement of glucose tolerance with enhancement of insulin and GLP-1 secretion. Ghrelin levels were significantly decreased in both cases. Enhanced GLP-1 secretion is specific to bariatric surgery, because weight reduction by diet therapy did not enhance GLP-1 secretion.

【Conclusion】 These results suggest that LSG can lead to rapid improvement of glucose tolerance and insulin secretion along with GLP-1 secretion. Reduction in ghrelin levels may also contribute to improvement of glucose tolerance. Thus, LSG will be ideal procedure for obesity with T2DM.

Duodenal switch for failed gastric banding

Dr Daniel KRAWCZYKOWSKI, Dr Youssef El SOUKI

Centre Hospitalier Regional de Metz FRANCE

Background

Biliopancreatic duodenal switch (BPD/DS) has 2 components: a restrictive one the sleeve gastrectomy (SG) and a malabsorptive one the duodenal switch (DS). Each of the two components can be performed separately.

Method

Between May 2003 and July 2008, 38 patients with an uncomplicated and well tolerated adjustable gastric banding (AGB) sustained an additional DS for an inadequate initial excess BMI loss (IEBMIL) (BMI >30) or for persisting curable co-morbid condition. Most of the bands were kept deflated.

Results

So far, 16 patients remained with the band associated to the DS while 22 patients had a later band removal for convenience, intolerance or IEWL (6 patients had a conversion to SG and 16 patients are free of any restriction). All glycemic and high cholesterol problems were resolved.

BMI before AGB	BMI before DS	Type of restriction	Differential evolution of BMI		% IEBMIL	
			At 1 Y	At 2 Y	At 1 Y	At 2 Y
46.9 (35.4 - 61.7)	40.9 ± 6.9	AGB	32.3±5	30.6±4.5	67.5±22.8	65.9±18.9
		SG	29.9±7.6	28.6±3.8	77.2±16.2	81.9±11.9
		Without restriction	33.7±5.5	32.9±6.0	61.8±24.8	64.9±29.5

Conclusion:

Additional DS is feasible. With or without any restriction, it contributes to patients weight loss and to resolve curable co-morbid condition. Although AGB + DS, isolated DS or debanding and SG and are options for failure AGB further studies are needed.