

Cross Validation of the Moorehead-Ardelt Quality of Life Questionnaire II with WHOQOL and SF36 and Clinical Application

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Background: Obesity has become a major worldwide public health issue. There is a need for tools to measure patient reported bariatric outcomes. The Moorehead-Ardelt Quality of Life Questionnaire II (MA-II) contains six items. The objective of this study was to translate the MA II into Chinese and validate it in patients with morbid obesity.

Methods: The MA-II was translated into Chinese and backtranslated into English by two language specialists to create the Taiwan version, which was validated by correlations with two other generic questionnaires of health-related quality of life (HRQOL), Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36), and World Health Organization Quality of Life (WHOQOL)-BREF Taiwan version. The convergent validity was accomplished by a series of Spearman rank correlations. Reliability of the MA-II Taiwan version was determined by internal consistency obtained by Cronbach alpha coefficient and test-retest reliability obtained by intraclass correlation coefficient.

Results: One hundred subjects with morbid obesity were enrolled to test the MA II Taiwan version convergent validity and internal consistency. Test-retest studies (2 weeks apart) were applied to 30 morbidly obese patients. Satisfactory internal consistency was demonstrated by a Cronbach alpha coefficient of 0.79. Good test-retest reliability was shown by intraclass correlations ranging from 0.73 to 0.91. The total sum of MA-II scores was significantly correlated with all four domains of the WHOQOL-BREF and two major components of SF-36. All six MA-II items showed significant correlations with each other, and total sum of MA-II scores was negatively correlated with body mass index, indicating a one-dimensional questionnaire of HRQOL.

Conclusions: The MA-II Taiwan version is an obesity-specific questionnaire for QOL evaluation with satisfactory reliability and validity. It has the advantages of extensive evaluation for HRQOL, cross-cultural application, rapid completion, high response rates, and an advanced scoring system.

Change in Quality of life at 12 months after Bariatric Surgery in Morbidly Obese patients

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Background Laparoscopic Roux-en-Y gastric bypass (LRYGB) is the gold standard method in Bariatric Surgery. However, considering that gastric cancer is one of the most common diseases in Asia, Kasama has introduced Laparoscopic Sleeve Gastrectomy with Duodenojejunal Bypass (LSG/DJB). Now LSG/DJB is becoming an effective procedure for the treatment of morbidly obese patients in Japan. In this study, we compared Quality of Life (QOL) and excess weight loss (EWL) 12 months after LRYGB and LSG/DJB. **Methods** We compared 38 patients who underwent LRYGB (Group B) and 25 patients who underwent LSG/DJB (Group SB) between June 2006 and March 2009. QOL factors assessed were Social Life, Confidence, Figure, Depression, Healthiness, Activity and Exercise. We had given Q&A sheets to the patients and asked them to evaluate their improvement in these factors. We have created an Improvement Score from 1 to 5 (5 being the best condition). We have also analyzed EWL in both groups. **Results** 12 months after surgery, all QOL factors were improved in both groups. There was no significant difference in mean score of QOL in all factors between Group B and Group SB. There was no significant difference in EWL between both groups. **Conclusion** LRYGB is considered to be the most popular procedure in Bariatric Surgery, but we suggest that LSG/DJB could also be an effective procedure from a view point of QOL and EWL.

An Individual Surgeon versus a Team Approach: Surgical Outcomes of Laparoscopic Roux-en-Y Gastric Bypass

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Purpose: Laparoscopic Roux-en-Y gastric bypass (LRYGB) has been shown to improve both the health and quality of life of morbidly obese patients. We studied to compare the efficacy and safety of using a team approach to LRYGB versus an individual surgeon. **Materials and Methods:** Data were retrospectively collected from 200 consecutive patients undergoing LRYGB for morbid obesity between August 2005 and February 2008. Group I (GI) and Group II (GII) included 50 patients who underwent surgery and were cared for by the same surgeon. Group III (GIII) included the next 100 consecutive patients, who underwent LRYGB by the same surgeon, but were cared for by a dedicated bariatric team. **Results:** Among the 76 males (38%) and 124 females (62%) in the study, excess weight loss at 1 and 3 months follow-up did not differ; however, it was significantly different at 6 months and 12 months. At mean follow-up, 30% in GI, 6% in GII, and 8% in GIII experienced complications. Most complications in the GI group occurred early and were related to surgical technique, while in groups GII and GIII, complications related to technique were markedly reduced. Males were 4.57 times as likely as females to have complications related to bariatric surgery. **Conclusions:** A team-based approach is a better option for patients undergoing LRYGB than is cared for by a single surgeon. With an experienced bariatric surgeon, the team approach resulted in shorter operative times and hospital stays, better weight loss without increased complications.

Difference Between Laparoscopic Sleeve Gastrectomy and Roux-en-Y Gastric Bypass Regarding Weight Loss Effect and Amount of Food Intake According to Level of BMI

Yotsuya Medical Cube

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<Background>

Laparoscopic sleeve gastrectomy (LSG) for morbidly obese patients is gaining popularity in Japan. Its indications and long-term results are currently under evaluation, whereas laparoscopic Roux-en-Y gastric bypass (LRYGB) is the golden standard procedure with good long term outcomes. In addition, some articles reported that LSG could not lead to sufficient weight loss for super morbid obesity. This study aimed to compare the difference of excess weight loss (EWL) and amount of food intake of patients with BMI < 50 or \geq 50 between LSG and LRYGB.

<Methods>

For this study, 123 patients who underwent LRYGB (48patients) or LSG (75 patients) were retrospectively analyzed for 24 months after surgery. There are 101 patients with BMI < 50 in LSG group (n=60) or LRYGB group (n=41), and 22 patients with BMI \geq 50 in LSG group (n=15) or LRYGB group (n=7). We compare the EWL and the amount of food intake after LSG to those after LRYGB according to BMI. We analyzed the amount of food intake by means of diet recall and a questionnaire. We defined the preoperative amount of food intake as 100% and calculated the rate of change after surgery.

<Results>

As for BMI < 50, the percentage of EWL and the rate of change of food intake at 24-month follow up point were 81.7% and 52% in LSG group and 82.8% and 47% in LRYGB group. As for BMI \geq 50, the percentage of EWL and the rate of change of food intake at 24-month follow up point were 29.8% and 54% in LSG group and 62.3% and 58% in LRYGB group. This data show that the EWL of patients with BMI \geq 50 after LSG at 24-month follow up point is not comparable to the other results, but the rate of change of food intake of the same group is comparable.

<Conclusion>

As for BMI \geq 50, we need to restrict the amount of food intake after LSG more than LRYGB for the purpose of bettering the EWL. However, it means that LSG can be a standalone procedure for morbidly obese patients with BMI<50 as well as LRYGB, but LSG is not expected to be performed as a solo procedure for the patients with BMI \geq 50.

Evaluation of the Clinical Pathway for Laparoscopic Bariatric Surgery

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<Background>Clinical Pathways (CPs) are comprehensive systematical patient care plans for specific procedures. The CPs for morbid obesity were implemented in our department in February 2006. The aim of this study is to evaluate the CPs for laparoscopic bariatric surgery. <Methods>The CPs were applied to the 189 patients who underwent bariatric surgery. The assessment criteria included degree of compliance with hospital stay, indicators of clinical care effectiveness, and comparison with the other CP reported in Pubmed. <Results>Fig. shows the number and rate of noncompliance with hospital stay in different bariatric procedures. The only reason for noncompliance with hospital stay was patient-dependent causes. There was no staff-related or institution-related reason. This result was almost similar to that reported in the past from Spain. <Conclusion>Our data show that compliance with hospital stay depends on the difficulty of bariatric surgery. From the point of view of the reason of noncompliance with hospital stay, clinical pathway which is controlled by a team with a wide experience in bariatric surgery can offer our patients with morbid obesity bariatric surgery with the smallest possible range of complications.

Laparoscopic Procedure [↵]	Number of noncompliance /total number of procedure [↵]	Rate of noncompliance [↵]
Adjustable Gastric Banding [↵]	0/17 [↵]	0% [↵]
Roux-en-Y Gastric Bypass [↵]	13/51 [↵]	25.49% [↵]
Sleeve <u>Gastrectomy</u> [↵]	13/81 [↵]	16.04% [↵]
Sleeve with Duodenal <u>Jejunal</u> Bypass [↵]	10/40 [↵]	25.00% [↵]
Total [↵]	36/189 [↵]	19.04% [↵]

Singaporean Asian Patients have paradoxically higher rates of vitamin D deficiency compared to Western Patients

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Background: Vitamin D deficiency has been reported in between 57% to 65% of patients in Western countries before bariatric surgery and can drop further after surgery, resulting in metabolic bone disease. No studies have however reported vitamin D (vit-D) levels in patients before bariatric surgery in tropical Singapore. **Aims of Study:** To retrospectively investigate vit-D and intact parathyroid hormone (iPTH) levels in obese patients immediately before undergoing bariatric surgery in a tertiary hospital. **Methods:** Baseline patient characteristics, preoperative Vit-D and iPTH levels were studied together with its relationship to race, gender and body mass index (BMI). Results were presented as mean (standard deviation). **Results:** 46 patients underwent bariatric surgery. 61% were female. There were 44% Chinese, 26% Malay, 24% Indian, and 7% were of other ethnicity. 78% had laparoscopic sleeve gastrectomy, 20% Roux-en-Y gastric bypass, and 2% bilio-pancreatic diversion. The mean age was 39 (10.6) and the mean BMI was 43.6 (9.8). The mean of vit-D was low at 17.4 ng/ml (8.6). 75% were deficient (<21 ng/ml), 21% were insufficient (21-29 ng/ml), and only 4% had sufficient vit-D (>29 ng/ml). Mean iPTH was low at 6.5 pmol/l (3.5). 50% of the patients had raised iPTH. Vit-D levels were inversely correlated with BMI ($r^2=0.242$, $p=0.008$). Non-Chinese patients had higher BMI (46.3 vs 40.0, $p=0.032$), lower vitamin D levels (13.6 vs 23.2 ng/ml, $p=0.002$) and higher iPTH (8.7 vs 4.4 pmol/l, $p=0.007$). Those were not different between males and females. **Conclusion:** The majority of obese patients, especially Malays and Indians, had deficient and insufficient vit-D levels even before bariatric surgery. Alarmingly the proportion of patients deficient was higher than in Western countries despite the fact that Singapore has sunshine all year round. Physicians in tropical countries therefore should routinely screen for its deficiency preoperatively with appropriate repletion.

A Simple Clinical Scoring System to Identify Patients at Risk of NASH Before the Development of NASH

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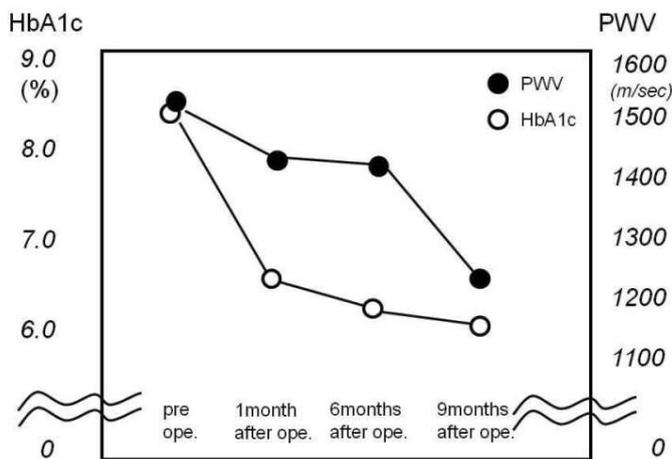
Background Nonalcoholic fatty liver disease (NAFLD) is common in the morbidly obese. It is a condition that can lead to progressive fibrosis and cirrhosis. A clinical scoring system to identify patients predisposed to fibrosis would assist in selecting patients for liver biopsy and further management. **Methods** Liver biopsies were taken from 370 consecutive patients who underwent laparoscopic bariatric surgery. Clinical and biochemical parameters were then assessed for correlation with histological features of non-alcoholic fatty liver disease. **Results** Sixty eight patients (18%) were found to have non-alcoholic steatohepatitis (NASH). Raised insulin resistance, ALT and total bilirubin were independently associated with NASH. The presence of at least 2 of the 3 provided the best combination of sensitivity (0.71) and specificity (0.71) for predicting NASH. **Conclusion** Raised insulin resistance, ALT and total bilirubin are clinical indicators for the presence of NASH prior to the development of fibrosis.

Bariatric surgery improves arterial stiffness of the patient with metabolic syndrome

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Obesity is an independent predictor of cardiovascular risk. Increased arterial stiffness, as reflected by an increased pulse wave velocity (PWV), is significantly and independently associated with higher risk for cardiovascular morbidity and mortality. According to recent reports, individuals with obesity are likely to have an increase in aortic stiffness, independent of blood pressure (BP) level, ethnicity, and age. A 60-year-old Japanese woman with obesity (BMI 45.5) and metabolic syndrome was referred to us. Her diabetic status is under control after bariatric surgery. The PWV decreased significantly after treatment (1528 vs 1211cm/sec) with reduction of visceral fat (100 vs 52 cm²). The bariatric surgery could improve arterial wall stiffness in patients with metabolic syndrome. The pathophysiologic mechanisms that link abdominal adiposity to arterial stiffening are should be investigated.



Case study : Partial Situs Inversus in a Morbidly Obese Female.

Sanjay Borude

Introduction

A 32 years old female presented with off & on mid chest pain and Morbid Obesity (BMI 41.41Sq. Mtrs) & secondary infertility. One FTND & she had a h/o ? liver problem.

Method

CT Chest/Abd/Pelvis showed Enlarged Mediastinal Lymph nodes and Partial Situs Inversus since there was no Dextr-Cardia.

Ba Meal FT also showed Situs Inversus. Haematology, Biochemistry, ECG, 2D Echo, Chest X-ray were normal.

Patient planned for a Sleeve Gastrectomy in a supine reverse Trendenburg' s position. Primary surgeon stood on the left of the patient. Camera 12 mm port in the supra-umbilical region, 12 mm port in the line of umbilicus in (L) mid-clavicular line, 5 mm port right epigastrium for liver retraction, another two 5 mm working ports either side of the mid abdomen.

Intra-operative findings: Large stomach on the right of abdomen, Liver extending from left to right, Spleen in the RHC region. Devascularisation of the greater curvature started from about 6 cms from the Pylorus to the right crus. Stomach resected with 32 F Bougie in the stomach. Staple line burried with 2-0 Ethibond suture. Abdominal drain placed. Ryles tube placed in the stomach.

Result

Patient' s recovery was uneventful. Patient started on oral liquids 20 hours after the surgery. Ryles tube was removed after 24 hours and drain after 30 hours.

Conclusion

Patient was totally asymptomatic so far GI tract was considered. It was only the surgical task for the surgeon because of the "Mirror-Image" effect.

Laparoscopic Revisional Gastric Bypass after open bariatric surgeries

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Objective: To confirm the feasibility of the laparoscopic revisional gastric bypass after open failed bariatric operations. **Method:** Retrospective review of all patients who have underwent revisional gastric bypass after open bariatric operations, all of these operations were done by the author. **Results:** There were 56 patients over 5 years had revisional gastric bypass, 28 patients had previous open bariatric operations. They form 6% of all the patients who have underwent laparoscopic gastric bypass by the author, 50% of these were post open bariatric surgeries. Only 4 patients had converted to open procedures, one was started open and it was at the early of the author experience. 55 patients were started laparoscopic and 3 were converted to open due to sever adhesions, they were also in the early experience. Out of f post open bariatric operations, 21 patients have failure to lose weight and/or weight regain, 4 patients have complications, and 3 patients have both failure to lose weight and complications. There were no mortality and no leakage. Only one patient have needed laparoscopic re-exploration due to twisting at the jejuno-jejunal anastomosis three days post operation. There were only 8% minor complications, like wound infections, self controlled bleeding. **Conclusion:** Laparoscopic revisional gastric bypass is feasible after open bariatric surgeries but these types of operations have high surgical skills demand and carry higher risks for the complications.

Revisional endoscopic surgery after gastric bypass

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The importance of the restrictive component of gastric bypass procedures is well recognized. Dilatation of the pouch-outlet , the pouch volume itself and the presence of a gastro-gastric fistula after gastric bypass are three factors responsible for substantial weight gain, volume per meal increases, rapid pouch emptying invites for binge-eating. Revisional surgery should be avoided by doing the first operation as it should , but if necessary it is often difficult and prone to at least double the morbidity of the primary operation and with unknown long term results. Narrowing the stoma size , closure of a gastrogastic fistula endoscopically with the OTSC clip is a very effective and safe alternative. Presentation of a study on 118 patients endoscopically treated either for stoma dilatation or gastrogastic fistula between october 2008 and june 2009

Validity of sleeve gastrectomy for band failures

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Introduction: Gastric banding is the one of the main restrictive procedures among the bariatric operation. sleeve gastrectomy proved to be more than just a restrictive operation, and proved to be successful for patients who had failed to lose their weight with banding. **Patients and Method:** 52 patients were included in this study. All had their bands done More than a year earlier. mean BMI 41 (38-49) . Mean age 28(18 -52). 31 female and 21 male. they were with no significant co-morbidities. All had sleeve gastrectomy done along with the removal of the band at the same session . The band was removed, the tunneling sutures is removed and the fundus was stretched back to its original anatomy after the excision of the peri gastric fibrous ring at the band site. Then sleeve gastrectomy is performed in the usual way using endo GIA stapling devise and we suture the proximal staple line with 2/0 vicryl . The follow up ranges from 1 to 4 years (19) (14) (11) and (8) patients respectively. **Results:** There was no major morbidity(Gastric leakage) ,no mortality, 3 wound infections, 1 chest infection. No conversions to laparotomy. Mean hospital stay 3 days(2-4). At the end of the first year following the operation all had significant weight loss 35-45% of the EBW. At 2 year 33 patients have lost 55% of the EBW. By the third year 19 patients had 55% EBW loss, At 4 years 8 patients lost 65% of their EBW. **Conclusion:** Sleeve gastrectomy can be regarded as a salvage procedure for band failure patients and sure it is more than a restrictive procedure , it is a valid metabolic operation and may be comparable to Gastric bypass for patients with failed bands.

Laparoscopic pouch resizing, new gastro-jejunal anastomosis and strictly cardial adjustable band placement for failed Gastric Bypass

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Bariatric surgery has developed and provides a great quantity of different procedures, some more innovative and still undergoing careful evaluation. We now face a growing number of long-term "failed" patients. For the RYGBP, literature usually rates from 20 to 35 %. Proximal pouch dilatation is a well known cause. We here describe a new approach: Laparoscopic pouch resizing, new gastro-jejunal anastomosis and strictly cardial adjustable band placement. To our knowledge this procedure has not been reported in literature yet. A 58 years woman who underwent a LRYGBP surgery 3.5 years priorly, with primarily good weight loss and resolution of type 2 diabetes, regained weight and thus underwent this procedure. The surgical technique, documented with patient's data, XR pictures and per-operative shootings, is described. No early complications were reported. The patient is doing very well at 4 weeks follow-up. We tend to gather more patients on more long term follow-up to assess scientific conclusions for what could be an interesting "second chance" new procedure for those failed cases.

Laparoscopic Band Revision to bypass:A Single Stage procedure

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Praveen Raj¹, Palanivelu Chinnusamy¹

Background:As the number of Bariatric Surgeries increased, so did the number of Revisional Surgeries too. As per the recent meta-analysis by Buchwald et al, the number of Bariatric procedures performed in Asia in 2008 is the least .As the number of procedures being done is on the rise , we Asians including Indians might have to start facing more number of Revisional Surgeries too.Video:In this High Definition Video , we demonstrate one of our cases of a Laparoscopic Band Revision to bypass as a Single Stage procedure for weight Recidivism in a 35 yr old Female.Steps:-The adhesions over the band was released, the band was cut and removed along with the pseudo capsule after dividing the gastro-gastric sutures. -The gastric pouch was created using linear staplers in the standard fashion and the anastamosis was done using standard limb lengths, 75cm biliopancreatic limb and 75cm alimentary limb. -The gastrojejunostomy is being performed in antecolic fashion using linear staplers. -Mesenteric defects were closed as well.

Laparoscopic Revisional Roux en Y Gastric Bypass for Weight Recidivism

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Background:As the number of Bariatric Surgeries increased, so did the number of Revisional Surgeries. As per the recent meta-analysis by Buchwald et al, the number of Bariatric procedures performed in Asia in 2008 is the least. As the number of procedures being done is on the rise, we Asians including Indians might have to start facing more number of Revisional Surgeries too. Roux en Gastric bypass is one procedure with very few revisional alternatives. **Video:**In this High Definition video, we demonstrate a Revisional Bypass for weight recidivism, wherein the the large gastro-jejunal stoma was revised in a 22 yr old female. The patient who on evaluation for weight recidivism was found to have a larger stoma than usual and hence had increased capacity to eat. Hence was taken for stomal revision by narrowing the stoma using a linear staplers application over a 36 F bougie and excising a gastrojejunal sleeve thus narrowing the stoma. The patient is losing acceptable amount of weight postoperatively.

Bariatric Revision Surgeries

Sanjay Borude

Abstract

Introduction

REAL complications associated with the operation and SIDE EFFECTS associated with the alteration in the upper GI anatomy.

The preoperative mortality of bariatric surgery was 0% and worldwide is usually associated with

1. Anastomotic leaks with peritonitis (75%) or
2. Pulmonary embolism (25%).

Method

REVISION INDICATIONS - GASTRIC BAND SURGERY

- Port Site Complications after GB
- Port Leakage- Cracking of the kink-resistant tubing or Tube Disconnection
- Port Site Pain
- Port Dislodging or Flipping
- Bulging of the Port through the Skin
- Infection of the Fluid within the Band
- Infection of the Port - Either at Surgery or Band Fill or Erosion

REVISION INDICATIONS - SLEEVE GASTRECTOMY SURGERY

- Pouch Enlargement
- Staple Line Dehiscence
- Stomach Perforation
- Stricture
- Volvulus

REVISION INDICATIONS - GASTRIC BYPASS SURGERY

- Pouch Enlargement
- Staple Line Dehiscence
- Stricture
- Perforation
- Infection
- Psychological
- Associated Disease

Analysis

Early postoperative complications

- PULMONARY EMBOLISM is the leading cause (1% to 2%) of perioperative death in bariatric surgical patients.
- The incidence of MAJOR WOUND INFECTION after gastric bypass ranges from 1% to 3%.
- GASTROINTESTINAL BLEEDING within the 30-day perioperative interval may have a variety of causes.
- Small bowel obstruction (SBO) ranges from 1% to 2%
- ACUTE GASTRIC DISTENTION

The incidence of intraoperative complications in our series 1.4%

Late complications

- Incisional hernia (most common)
- Symptomatic gallbladder disease ranges from 3% to 30%.
- Vomiting.
- The incidence of Late Staple-line breakdown varies from 2% to 23%.
- Gastro-gastric fistulae after transection ranges from 1% to 2%.
- The incidence of marginal ulcer after RYGB ranges from 3% to 10%.

Conclusion

Complications following Bariatric Surgeries can be reduced to negligible if great care is taken Pre-Intra-and Post-operative period.

Preliminary Case Report on the Change in Metabolic Profile in Non-Obese Type 2 Diabetic Patients treated with Surgery in the Philippines

Dineros, Hildegardes C.

Background: The metabolic effects of bariatric surgery, particularly the remarkable resolution of Type II DM are well established. Several mechanisms of action have been proposed in addition to weight loss as the major factor causing such improvement in co-morbidities. The aims of this presentation are as follows: 1. To describe a novel procedure, the Laparoscopic Sleeve Gastrectomy with Loop Duodeno-Jejunal Bypass; and 2. To present the observed changes in metabolic panel in 3 patients before and after Metabolic Surgery.

Methods: From January 1, 2008 to December 31, 2010, three (62 and 56 y/o females, and a 43 y/o male) non-obese patients with medically uncontrolled Type 2 Diabetes Mellitus underwent Laparoscopic Sleeve Gastrectomy with Loop Duodeno-Jejunal Bypass. Preoperative profile was taken and compared to 1, 3, 6, 12 and 24 months.

Results: All 3 patients had 3 months follow-up data, 2 had 6 and 12 months follow-up data and 1 had 2 years follow-up data. Decrease in BMI ranged from 1-3 kg/m². Improvement of FBS, HbA1c was noted as immediate as 1 month postoperatively with discontinued Oral Hypoglycemic medication and Insulin as early as 3 months after surgery. No surgical morbidities were noted.

Conclusion: Laparoscopic Sleeve Gastrectomy with Loop Duodeno-Jejunal Bypass can be performed safely. There are multiple mechanisms for its euglycemic effect, a subject for further investigation.

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Metabolic outcomes of bariatric surgery: a result from Thai Subjects

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Background: Obesity and its co-morbidities become to be one of the most important health care problems. Weight loss surgery has been proved as the most effective and sustainable method to obtain long term weight control and to achieve improvement of metabolic disorders. There are limited results contributing from Asian subjects. We reviewed our metabolic outcomes of surgical treatment for morbidly obese patients in our institute.

Methods: Data from all patients who underwent bariatric surgery in Chulalongkorn University were collected and metabolic outcomes were reviewed.

Results: From Jan 2003 to December 2010. Fifty-five consecutive Thai patients underwent bariatric surgery by the Chula Minimally Invasive Surgery Center. The mean age was 35.2 years (18-57 years). Twenty four (56.4%) were men. The pre-op BMI was 49.2 kg/m.² Roux en Y Gastric bypass was the most common procedure (78%). In RYGB group showed mean EWL of 64.2% at 2 years. 20 of 55 (36.3%) were type II diabetic, all of them were getting improvement post operatively; of which, 81.8% were completely resolved and 18.2% were able to decrease dosage of hypoglycemic drugs. 28 of 55 (50.9%) were hypertensive, 46.7% of them were able to discontinue antihypertensive drugs and 46.7% were decreasing dosage. 19 of 55 (34.5%) were dyslipidemia; 60% were resolved and 40% were improved.

Conclusion: Metabolic results in Thai patients undergoing bariatric surgery are excellent. This initial data from Thai subject reflects a comparable result worldwide.

Comparison Between the Effects of Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass on Type 2 Diabetes Mellitus in Morbidly Obese Japanese Patients: A Retrospective 1 Year Study

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<Background>Laparoscopic Roux-en-Y gastric bypass (LRYGB) provides sustained weight loss and leads to well-documented remission of Type 2 diabetes (T2DM), whereas data on the effectiveness of laparoscopic sleeve gastrectomy (LSG) on T2DM are scarce<Methods>We conducted a retrospective study on the therapeutic effect on type 2 diabetes and biochemical characteristics in 16 morbidly obese T2DM subjects undergoing LSG and 24 subjects undergoing LRYGB before and at 1, 3, 6, 12 months after surgery, matched for age, gender, BMI, fasting plasma glucose, HbA1c, insulin, C-peptide, HOMA-IR, DM duration<Results>The preoperative median BMI was 40.8 kg/m² in the LSG group and 44.9 kg/m² in the LRYGB group and as for T2DM, most subjects were not severe type from their history and biochemical markers. The percentage of excess weight loss at the 1, 3, 6, 12-month follow up points after LSG and LRYGB were 28.8 and 27.8, 46.2 and 47.0, 64.2 and 63.9, 74.2 and 71.8%, respectively. The remission rate of T2DM at the same follow up points after LSG and LRYGB were 38 and 35, 75 and 73, 87 and 93, 93 and 100%, respectively.<Conclusion>For not severe T2DM in Japanese morbidly obese Japanese patients, the therapeutic effect of LSG and LRYGB on T2DM was comparable at 1-year interval.

Laparoscopic Duodenojejunal bypass with Sleeve gastrectomy- A novel procedure for resolution of Metabolic Syndrome in patients with BMI <32.5:

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Background: Type II DM resolution in morbidly obese patients following Metabolic Surgery suggests these might benefit even non-morbidly obese patients with Metabolic Syndrome. Available literature favours Combined Restrictive/Malabsorptive procedures over the others in control of Diabetes and other co-morbidities. Laparoscopic Duodenojejunal bypass with Sleeve gastrectomy is one such procedure performed in our series. Methods: Patients with < 32.5 BMI, confirmed to be Type II DM with HbA1C >7.5 were included in the study. Patients with Sliding Hiatus Hernia and C-peptide levels < 1 were excluded. Laparoscopic Duodenojejunal bypass was done in a retro colic fashion, anastomosis being done end-end, single layer suturing with a 60 F Sleeve. Results: A total of 14 patients (8 women, 6 men) included in the study were prospectively evaluated. The mean age was 36.5 yrs. The mean pre-operative BMI, (Fasting Blood Glucose) FBG and HbA1C was 29.9, 196.4 mg/dl and 8.2%. The postoperative BMI, FBG and HbA1C at the end of 6 mts and 1 year was 25.4, 110.2, 6.3% and 24.2, 106.4, 6.1% respectively. 12 out of 14 patients had complete remission and 2 had reduced medication use. 4 out of six patients who had Hypertension had complete remission, 2 had no improvement. Conclusion: Laparoscopic Duodenojejunal bypass with Sleeve, which combines the principles of Sleeve Gastrectomy and Foregut hypothesis, is an effective procedure for resolution of Diabetes and other co-morbidities even in lower BMI population. The stomach remnant is amenable to endoscopic surveillance for Carcinoma Stomach. Also with the possibility of altering the size of the Sleeve, the procedure can be made less restrictive which is best suited for a country like India with a low calorie-higher quantity food intake pattern, hence preserving the quality of eating.

SLEEVE GASTRECTOMY : METABOLIC AND BARIATRIC SURGERY : A BLESSING FOR THE ASIANS

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Institution : Ruby Hall Clinic , Pune , India . Dr L H Hiranandani Hospital , Mumbai, India .
Jayashree Todkar ¹

OBESITY---GLOBAL EPIDEMIC (WHO)

- Pro-atherogenic disease with Dysmetabolic state

South Asians around the globe have highest rate of Coronary Arterial Disease (CAD) .

- There would be around 62 million pts of CAD in India by 2015 and out of these 23 million would be pts lesser than 40 yrs of age.

DM BURDEN IN INDIA

- Approx. 43 million adults are Diabetics
- Estimated to increase to 57.2 million by 2025.

Asian Consensus

- Consensus Statement for Diagnosis of Obesity, Abdominal Obesity and the Metabolic Syndrome for Asian Indians and Recommendations for Physical Activity, Medical and Surgical Management:-

Normal BMI: 18.0-22.9 kg/m²,

Overweight: 23.0-24.9 kg/m²,

Obesity: > 25 kg/m²

JAPI

2009.

More CVD ,DM risk at lower BMI in Asian population are due to : 1- BODY COMPOSITION , 2- INSULIN DIS-SENSITIVITY , 3- CENTRAL DISTRIBUTION OF FAT.

INDIAN EXPERIENCE OF SLEEVE GASTRECTOMY :

A . Effectiveness of laparoscopic sleeve gastrectomy on glycemic control in obese Indians with type 2 diabetes mellitus

B . Long-term effects of laparoscopic sleeve gastrectomy in morbidly obese subjects with type 2 diabetes mellitus

C . Impact of LSG on CVD risk reduction using Framingham score

Improvement in Type 2 Diabetes Mellitus following Bariatric Surgery in morbidly obese individuals

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Shanker Pasupathy¹, Chin Hong Lim¹, Daniel Wai², Kwang Wei Tham²

BACKGROUND: Weight loss has been shown to improve the control of type 2 diabetes mellitus (T2DM). **AIMS OF STUDY:** To evaluate the impact of bariatric surgery on T2DM in morbidly obese individuals. **METHODS:** From August 2008 to November 2010, 47 consecutive patients underwent bariatric surgery at the Singapore General Hospital. All patients documented to have T2DM prior to surgery were included in the study. **RESULTS:** There were 16 patients suffering from T2DM (9 males). The median age was 43 years (range 32 - 54). 8 patients underwent laparoscopic sleeve gastrectomy (LSG) and 8 underwent laparoscopic gastric bypass (LGB). Median length of stay was 4 days (3-14). The median pre-operative weight was 116kg (85 -171) and body mass index (BMI) 40 kg/m²(33 - 70). Median follow-up was 5 months (1 - 26). Patients who underwent LSG had a median pre-operative HbA1c of 7.2% (6.4-8.2). All these patients were taking oral hypoglycaemic agents (OHAs). Median post-operative HbA1c levels were 5.8% (5.5-6.1), and all OHAs were discontinued. Patients who underwent LGB had a median pre-operative HbA1c of 8.2% (6.6-9.3). 5 patients were on subcutaneous insulin injections, in addition to oral hypoglycaemic agents (OHAs). Median post-operative HbA1c levels were 6.1% (5.2-8.0), and although insulin was discontinued in all, 2 patients were still taking OHAs. **CONCLUSION:** Bariatric surgery provided rapid and effective control of T2DM, allowing all patients to reduce or eliminate diabetic medication completely. Bariatric surgery may be considered as an adjuvant therapy for T2DM in morbidly obese individuals.

DUODENOJEJUNAL BYPASS IN DIABETIC GASTRIC CANCER PATIENTS

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(Objective) Metabolic surgery in non-obese diabetics has been tried by various methods. Effect of duodenojejunal bypass on diabetes could be studied by the modification of reconstruction after curative gastrectomy for diabetic gastric cancer patients.

(Method) From June 2007 to December 2009 we performed our modified RY gastrojejunostomy procedure of duodenojejunal bypass with bypassed proximal jejunum over 100cm after curative distal gastrectomy for 18 diabetic gastric cancer patients. The bypassed proximal jejunum were 100-190cm (134.3cm in average) as the sum of Roux and Y limbs. The durations of diabetes were 6.4 years in average, and diabetes was managed by oral hypoglycemic agent in all of the patients.

(Result) Diabetes had been remitted in 7 patients among 18 patients (38.9%) at the 1 year or more follow up, with HbA1c level of 7.0% or less without medication. The serum ferritin and VB12 levels were within normal limit in most of patients.

(Conclusion) Bypass of duodenum and lengthened proximal jejunum with distal gastrectomy is acceptable in nutrition. Some portion of diabetic gastric cancer patients could be in remission of diabetes with bypass of duodenum and long proximal small bowel in gastric cancer surgery. Randomized prospective clinical trial of metabolic surgery for diabetic gastric cancer patients is necessary to evaluate the metabolic effect of duodenojejunal bypass on non-obese diabetics.

ONE YEAR RESULTS OF AN ENDOSCOPIC, DUODENAL-JEJUNAL EXCLUSION DEVICE FOR WEIGHT LOSS AND CONTROL OF TYPE 2 DIABETES

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Background: The duodenal-jejunal bypass liner (DJBL, GI Dynamics, Inc., Lexington, MA) is an endoscopic implant that mimics the intestinal bypass component of the Roux-en-Y gastric bypass. Previously reported studies have shown promising improvements in type 2 diabetes (T2D) and weight loss for up to 6 months. This report describes improvements in T2D and metabolic changes in subjects with T2D who were implanted with the DJBL for one year. **Methods:** This is a prospective, non-randomized, open label study with 22 patients enrolled. **Inclusion criteria:** Age higher 18 years and less 65 years, BMI higher 35 kg/m²; and type 2 diabetes with or without other co-morbidities, unsuccessful history with nonsurgical weight reduction methods, candidates to bariatric surgery. There were 9 early endoscopic removals due to device movement (3), nausea/vomiting (1), abdominal pain (1), GI hemorrhage (1), non-device related abdominal neoplasm (1) and Principal Investigator request (2). **Results:** At one year (n=13 patients), observed absolute weight loss of 20.4 kg (p less 0.0001), excess weight percentage loss of 35.3% (p less 0.0001), body mass index of 7.4 kg/m² (p less 0.0001) and waist circumference of 10.1cm (p=0.0001) was observed. Likewise, glucose levels decreased from 175.6 to 126.7 mg/dL (p less 0.0001) and glycosylated hemoglobin from 8.8 to 6.4% (p less 0.0001). The use of diabetic medications, except metformin was reduced and 19.2% of patients no longer required any anti-diabetic drugs. Insulin (p=0.02) and C-peptide (p=0.015), cholesterol (p=0.001), LDL (p=0.01), and triglycerides (p=0.006) levels were normalized at 1 year. **Conclusions:** The endoscopic DJBL has a durable effect on glucose control, weight loss and metabolic function for one year, suggesting this new device is a suitable option for the treatment of T2D and obesity.

Enteropeptidase: a gene associated to a starvation human phenotype as a novel target for the treatment of obesity and type II diabetes

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Itzik Harosh¹, Sandrine Braud¹

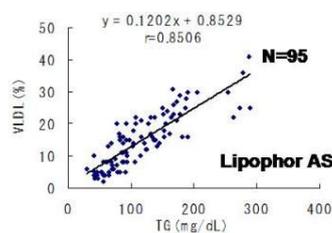
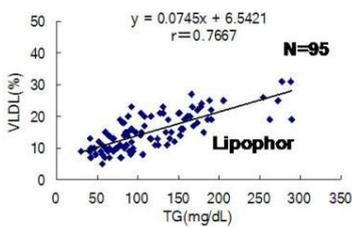
- Many obesity related genes have been proposed as targets for the treatment of obesity. However, these obesity genes did not provide efficient drug therapy for obesity treatment. This is mainly due to the redundancy of the biochemical pathway involved in obesity and the lack of specificity of the gene targets. It is therefore a challenge to identify crucial gene(s) targets involved in energy metabolism associated with lean or starvation phenotype. Congenital Enteropeptidase deficiency is an extremely rare pathology which answers to all these criteria. Enteropeptidase catalyzes the conversion of inactive trypsinogen into active trypsin via the cleavage of the acidic propeptide from trypsinogen. We have generated knock out transgenic mice for enteropeptidase which shows the same phenotype like in human. These data and in vivo preclinical data using per os small molecule for long term treatment (9 weeks) will be presented.

Newly developed profiling of lipoproteins by PAGE to determine the heterogeneity of low-density lipoproteins (LDLs)

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Aim: To explore the potential of newly developed polyacrylamide-gel disc electrophoresis (PAGE) for lipoprotein profiling in clinical practice. **Design and Methods:** Blood samples were collected from 95 patients with metabolic syndrome. Lipid parameters were assayed by commercial (Lipophor) and newly developed PAGE (Lipophor AS), including small, dense low-density lipoprotein (LDL) (n = 41), and triglyceride-rich lipoprotein remnant cholesterol (n = 37). We also used a commercial kit to measure small, dense LDL (n = 41). **Results:** By PAGE, we obtained the percentage of the area under the curve (AUC %) of each peaks and calculated respective AUC% x total cholesterol (AUC%xTC) values. The calculated values of LDL-AUC%xTC, small LDL-AUC%xTC, and HDL-AUC%xTC values were correlated well with values from homogeneous assay for LDL-cholesterol, small, dense LDL-cholesterol, and HDL-cholesterol assays (r = 0.94, 0.81, and 0.89, respectively). Lipophor AS is better correlation between TG and VLDL than Lipophor (r = 0.77, and 0.85, respectively). **Conclusions:** PAGE combined with measurement of total cholesterol and triglycerides provides a rapid evaluation of anti- or pro-atherogenic lipoproteins and a simple profiling system for both the "quantity" and "quality" of lipoproteins, allowing a better assessment of the risk of coronary artery diseases.



Ileal interposition improves Glucose Tolerance and Insulin Resistance in Otsuka Long-Evans Tokushima Fatty rats.

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Backgrounds: Ileal interposition (IT) is an operative procedure in which the distal ileum is transposed isoperistaltically into the proximal jejunum and considered as a procedure for metabolic or anti-diabetic surgery. Our aim was to study the effects of IT on glycemic control, fat metabolism, and hormonal changes in obese rats with spontaneous diabetes (OLETF rats). **Methods:** Animals were divided into either an IT or a sham (SH) group. They underwent oral glucose tolerance test (OGTT) before, 4, and 8 weeks after the operation. All animals were killed 10 weeks after operation for analyses of tissue weight (liver, pancreas, epididymal fat, brown fat) and fasting plasma levels of glucose, insulin, glucagon-like peptide (GLP)-1, peptide YY (PYY), glucose-dependent insulintropic polypeptide (GIP), and leptin. **Results:** After operation, body weight increased in both groups compared to their preoperative weight, but it did not differ between IT and SH. At 8 weeks postoperatively, integrated blood glucose levels during the OGTT were decreased in IT compared to SH ($p < 0.05$). Ten weeks after operation, fasting plasma levels of insulin, GLP-1, and GIP did not differ between the two groups, but PYY levels were greater in the IT group ($P < 0.01$). Weight of epididymal and brown adipose tissues, homeostasis model assessment insulin resistance, and fasting plasma leptin levels were decreased in the IT group ($p < 0.05$). **Conclusions:** These results suggest that IT improves glucose and lipid metabolism by decreasing blood glucose, insulin resistance, and epididymal fat, increases in plasma PYY might be one of the mechanisms of these changes.

The effects of duodeno-jejunal bypass on glucose metabolism in obese type2 diabetic rat model.

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BACKGROUNDS: Bariatric surgery, especially gastric bypass or duodenal switch, has been shown to improve type 2 diabetes. However, its detail mechanisms are not well comprehended yet. There are two hypotheses that are advocated to explain effects of bariatric surgery on glucose metabolism: the foregut hypothesis and the hindgut hypothesis. The former theory is considered to depend on exclusion of duodenum and proximal jejunum from the nutrients transit, possibly enhancing secretion of anti-incretin factors, while the latter one is thought to be results from more rapid delivery of nutrients to the ileum, thereby enhancing the release of hormones such as glucagon-like peptide-1 (GLP-1). Duodeno-jejunal bypass (DJB) might include both theories, but it is still controversial which theory is dominant. **METHODS:** Male 20-week-old OLETF rats were divided into 3 groups and they underwent sham operation or two types of DJB, which are defined as DJB-J and DJB-I. These are differentiated by the length of alimentary limb (AL). In DJB-J, the biliopancreatic limb (BPL) was anastomosed to the side of distal limb to make 2.5cm AL and it can be considered as pure foregut model. In DJB-I, the BPL was anastomosed to the distal limb 25cm proximal to the ileum-end, and it can be thought as foregut plus hindgut model. All rats underwent OGTT at baseline, 4 and 8 weeks after surgery. **RESULTS:** There was some weight controlling effect in DJB-I group, but not in other groups. Regarding OGTT, DJB-I group demonstrated lower plasma glucose curve at 4 and 8 weeks after surgery comparing to other groups, but there were no significant difference between DJB-J and sham group. **CONCLUSION:** The improvement of glucose metabolism in DJB mainly depends on an inflow of bile and pancreatic juice to the ileum, and the exclusion of the duodenum may not contribute to the anti-diabetic effect.

Differential increase in HDL-c post bariatric surgery for Singaporean Patients according to Glucose Status.

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Background: HDL-c is negatively correlated with cardiovascular risk. Patients with diabetes and pre-diabetes or abnormal glucose tolerance (AGT) have low HDL-c. Few studies have compared the change of HDL-c post bariatric surgery between patients with normal glucose tolerance (NGT) and AGT. Aims of Study: To compare the change of HDL-c post bariatric surgery between patients with NGT and AGT. Methods: HDL-c levels at 0, 3 and 6 months were transformed using the multivariate repeated measures model, with glucose tolerance being the between-subject factor. Results: 46 patients (61% females) underwent laparoscopic bariatric surgery from September 2008 to November 2010. 78% had sleeve gastrectomy, 20% gastric bypass, and 2% bilio-pancreatic diversion. The mean age was 39 years (+/-10.6) with a mean BMI of 43.6kg/m² (+/-9.8). 54% had NGT versus 46% with AGT. Only 1 patient (4%) in the NGT group was on a fibrate pre-op but none in the AGT group. Average weight loss at 6 months was 25.5kg and 22.2kg for NGT and AGT respectively. HDL-c rose significantly in both groups (mean HDL-c for NGT were 1.06, 1.49 and 1.68 mmol/L at 0, 3 and 6 months; mean HDL-c for AGT were 0.89, 0.92 and 1.08 mmol/L; within-subject p=0.006). Thus HDL-c increased 58% in the NGT but only 21% in the AGT. HDL-c in the NGT was significantly higher than in the AGT group throughout the 6 months (between-subject p=0.009).

EARLY EXPERIENCE WITH A NOVEL PROCEDURE FOR OBESITY: LAPAROSCOPIC SLEEVE GASTRECTOMY

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Ser Yee Lee^{1,2}, Shanker Pasupathy ¹, Kwang Wei Tham², Sonali Ganguly², Wai Keong Wong ¹

BACKGROUND: Bariatric surgery offers the morbidly obese substantial and sustainable weight loss and reduction in obesity-related co-morbidities when other conservative treatments have failed. Laparoscopic sleeve gastrectomy is a new restrictive procedure in bariatric surgery.

AIMS: To evaluate our experience with laparoscopic sleeve gastrectomy (LSG), a new bariatric surgical procedure, with regards to safety and feasibility of the procedure and early weight loss.

METHODS: All patients who underwent LSG were studied in terms of their complications and early clinical results. Patients' clinical data were retrieved from a prospective database.

RESULTS: Twenty-three patients underwent laparoscopic sleeve gastrectomy between the period of December 2008 and June 2010 with a mean age of 38 years (Range: 23 - 64). The mean pre-operative weight was 112kg (range 78-170) and body mass index (BMI) 42.1kg/m² (33 - 60). Diabetes mellitus was present in 39%, hypertension in 43% and hyperlipidemia in 35% of the patients. Majority of patients had two or more obesity-related co-morbidities (52%). The stomach was tubularised over a 38French calibration tube using endoscopic staplers. Mean operative time was 142 mins (80 - 220). There were no conversions. 1 patient required re-laparoscopy on the 1st post-operative day for bleeding from the gastric staple line. She subsequently recovered well but developed a wound infection from one of the laparoscopic port sites. There were no other morbidities. Median postoperative stay was 3 days (1-9). Mean weight 1, 3 and 6 months post-operatively was 102, 90 and 79kg, a loss of 9, 20 and 30% respectively.

CONCLUSION: Laparoscopic sleeve gastrectomy is a promising procedure for surgical treatment of obesity with good early weight loss and low morbidity.

Introduction of laparoscopic vertical sleeve gastrectomy into bariatric practice

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William V. Braun¹, Maree Kekeff², Donna Tanchev², Candice Silverman¹, Laurent Layani¹

Aim: LVSG has recently become popular as bariatric procedure, not only as first step in high risk or superobese patients or in cases of failed restrictive operations, but mainly as a stand alone operation in morbidly obese. Our aim is to investigate safety, efficacy and consistency of LVSG in both weight loss and remission of patients comorbidities

Methods: Retrospective and prospective analysis of all LVSG performed at John Flynn private in Gold Coast from January 2008 until August 2010 was performed. Patients telephone interviews were conducted to establish overall satisfaction with procedure and service

Results: 106 LVSG were performed from January 2008 to August 2010. Male to female ratio to 1:1.1. Median age and BMI were 47 (22 to 70), and 52 (35.5 to 81) respectively. 43 procedures were staged operations following failed LGB (40) and open stapling gastroplasty (3). Mean operative time was 79 min (38 to 133 min). There was no mortality. Postoperative complications included gastric leak (1), minor wound infection (4) and prolonged nausea (1). Median LOS was 2 (1 to 61 days). Follow-up was achieved in 97 patients (92%). Mean EWL was 69.1% (23 to 100%) at 6 to 12 months for primary VLSG and 38.5% (16.7 to 76.6) for staged operations. Major comorbidities subsided. 93 (88%) patients provided their feed back over telephone with overall satisfaction rate 100%

Conclusions: LVSG is safe and efficacious procedure. It achieves excellent results in weight loss and sustainable short and midterm improvement of overall patients health. Serious complications do however occur and pose high demands on care providers as well as patients and their families

Comparison Between the Results of Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass for Morbid Versus Super Morbid Obesity

Yotsuya Medical Cube

Hideharu Shimizu, Yosuke Seki, Eri Kikkawa, Kazuko Sonoda, Tetsuya Nakazato, Kazunori Kasama

Background

Data on the effectiveness of laparoscopic sleeve gastrectomy (LSG) for super morbid obesity in patients with body mass index (BMI) ≥ 50 are scarce. Whether LSG alone can replace laparoscopic Roux-en-Y Gastric Bypass (LRYGB) as a standard bariatric procedure is questionable.

Methods

For this study, 129 morbidly obese patients who underwent LSG (68 patients) or LRYGB (61 patients) between 2006 and 2009 were retrospectively analyzed. We compared the weight loss effect of LSG to that of LRYGB according to BMI.

Results

The percentage of excess weight loss (EWL) at the 1-, 3-, 6-, 12-, 24-month follow up points of the patients who underwent LSG and LRYGB were comparable. According to BMI, The percentage of EWL of the patients with an initial BMI ≤ 35 in LSG (n=14) and LRYGB (n=11) group at 1-, 3-, 6-, 12-month follow up points were 36.1 and 31.2, 74.2 and 70.8, 78.8 and 99.0, 92.7 and 89.1%, respectively. As for $35 < \text{BMI} \leq 40$, the percentage in LSG (n=20) and LRYGB (n=25) group at the same follow up points were 40.7 and 23.7, 50.0 and 47.2, 64.7 and 69.0, 76.9 and 78.3, 83.6 and 85.6%, respectively. As for $40 < \text{BMI} \leq 50$, the percentage in LSG (n=20) and LRYGB (n=27) at the same follow up points were 22.6 and 20.4, 43.8 and 40.9, 72.5 and 59.6, 80.5 and 75.2, 72.0 and 80.7%, respectively. There was no significant difference between both groups. However, the percentage of EWL of the patients with $50 < \text{initial BMI} < 60$ in LSG (n=7) and LRYGB (n=5) group were 14.7 and 20.9 (P=0.21), 27.9 and 35.3 (P=0.14), 36.3 and 56.1% (P=0.04), 35.5 and 69.7% (P=0.01), 32.5 and 60.9% (P=0.02) at 1-, 3-, 6-, 12-, 24-month after operation. Compared with LSG, LRYGB obtained better weight loss outcomes for super morbid obesity ($50 < \text{BMI} \leq 60$).

Conclusions

LSG can be a standalone procedure for morbidly obese patients with BMI < 50 as well as LRYGB, but LSG is not expected to be performed as a solo procedure for the patients with BMI over 50.

Early results from a specialized Metabolic and Bariatric Surgery service

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BACKGROUND: Bariatric surgery is one of the most effective weight loss interventions for morbidly obese individuals. However, surgery in morbidly obese patients involves potentially significant risk and should be undertaken by specially trained teams. **AIMS OF STUDY:** The experience of a specialised metabolic and bariatric surgery service is described. **METHODS:** In 2008, a dedicated metabolic and bariatric surgery service was set up at the Singapore General Hospital. Patients were managed according to a clinical pathway which included pre-surgical evaluation, surgical admission and post-surgical follow-up. **RESULTS:** From August 2008 to November 2010, 47 patients underwent bariatric surgery. The mean pre-operative weight was 119 kg (range 78- 209) and body mass index (BMI) 44 kg/m² (32.5-74). 21 patients had impaired glucose tolerance or type 2 diabetes mellitus. 91% of patients had at least 1 major comorbidity (diabetes mellitus, hypertension, dyslipidaemia, obstructive sleep apnoea) . 37 patients underwent laparoscopic sleeve gastrectomy, 9 laparoscopic gastric bypass and 1 laparoscopic bilio-pancreatic diversion. 3 patients required re-operation for haemorrhage (two) and anastomotic leak (one) on the 1st post-operative day, and then recovered uneventfully. 1 patient with post-operative haemorrhage was managed conservatively with blood transfusion only. There were no mortalities. Median length of stay was 4 days (3-14). The mean absolute weight loss at 6 months was 27% (12-34). **CONCLUSION:** A multi-disciplinary approach improves patient selection and optimization, resulting in improved clinical outcomes after bariatric surgery.

Laparoscopic Sleeve Gastrectomy with a BIB in situ for 14 months

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Abdulsalam S. Al taie¹

Introduction: Bioenteric Intra gastric Balloon BIB is used to stay in the stomach for approximately 6 months. its benefit as a sole procedure is questionable. It could be useful if used in a staged procedure as a first step followed by a definitive bariatric surgery for high risk patients. patient and method: In this video am presenting to you a 24 years old gentleman 210 KG with a BMI of 72 who had a BIB in his stomach 14 months prior to our surgery. He had a trial of endoscopic removal of the balloon but was unsuccessful as the balloon was digested. We planned to remove the balloon in a novel technique, along with laparoscopic sleeve gastrectomy (LSG). we started by dividing the omentum on the greater curvature, then dividing the stomach 3 cm from the duodenum along 36 Fr. calibration tube. Approaching the mid stomach after firing the 3rd 60 mm endo cartridge, the balloon deflated and pulled into the resected stomach through a gastrostomy made on that part, LSG completed as usual. then the resected part removed along with the BIB inside. results: the aim is to show a novel technique of removal of BIB that left for long time and was not possible to be taken out endoscopically. He did excellent post operative recovery and was dismissed home on the second post operative day. At the end of year one following the surgery he lost about 75 KGs and his BMI dropped to 46. conclusion: LSG can safely be performed in patients with failed BIB, especially when they are left for longer than 6 months which would be difficult to be removed endoscopically, it can be retrieved in such away that the resected stomach would be used as a retrieval bag for that purpose.

Removal of stomach remnant after laparoscopic sleeve gastrectomy

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Kirsty R. Cattle¹, Periyathambi S. Jambulingam¹, Ravindra Date¹

Removal of the remnant stomach after laparoscopic sleeve gastrectomy for obesity can be tricky without enlarging the port site incision. We therefore present a simple technique to facilitate the removal of the remnant stomach which does not involve additional equipment or expense.

Early Experience with Laparoscopic Roux-en-Y Gastric Bypass for Morbidly Obese patients

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CH Lim¹, S Pasupathy¹, KW Tham², S Ganguly², WK Wong¹

Objective: To evaluate the early outcome for laparoscopic Roux-en-Y gastric bypass in a new bariatric surgical program in Singapore. **Methods:** A prospective pilot study of 9 patients who underwent laparoscopic Roux-en-Y gastric bypass for obesity by a single surgeon at Singapore General Hospital between September 2008 to October 2010. The study endpoint included operative time, complications and hospital length of stay. At one month post surgery, weight loss and HbA1c levels were recorded. **Results:** Five males and 4 females with median age of 39 years (range 30 to 60) were included in the study. Mean pre-operative weight was 125.5kg (range 74kg to 170.7kg) with a mean pre-operative BMI of 45.9 (range 35.4 to 70). All our patients had diabetes. In addition to diabetes, 8 out of 9 patients had at least one other significant medical co-morbidity related to obesity. The median operative time was 325 minutes (mean of 438 minutes for first 4 cases and 246 minutes for last 4 cases). There was no conversion. One patient required a re-operation for anastomotic leak. Median hospital stay was 4 days (range 1 to 13) and the average weight loss was 13.3% at one month. The median pre-operative HbA1c was 8.6% (range 6.5 to 12.3) and at one month, HbA1c levels reduced to 6.1% (range 5.2 to 8). **Conclusions:** Laparoscopic Roux-en-Y gastric bypass is a technically challenging procedure that can be safely integrated into a bariatric treatment program with early weight loss and improved diabetic control. With more experience, operative time and length of stay decreased.

Anesthetic Management of 186 morbidly obese patients for Bariatric Surgery

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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

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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

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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?

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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?

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Background: Obstructive sleep apnea (OSA) is recognized in obese patients. It may be 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 preoperative work up for all bariatric patients.

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

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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?

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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 Finding
 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?

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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.

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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

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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

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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

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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?

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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

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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

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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.

LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS USING 3 PORTS TECHNIQUE FOR TREATMENT OF MORBID OBESITY

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LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS USING 3 PORTS TECHNIQUE FOR TREATMENT OF MORBID OBESITY Haider A Al-Shurafa , Riyadh Military Hospital, Riyadh, Saudi Arabia

Objectives:To present the technique and the results of laparoscopic Roux-en-Y gastric bypass (LRYGBP) using 3 ports technique for the treatment of the morbid obesity.

Method and Materials:This is a retrospective review of the medical records for the patients who have underwent LRYGBP using 3 ports technique and were operated by the first author in Riyadh Military Hospital, Riyadh, Saudi Arabia.

Results:In the period from April 2004 to December 2008, 37 patients, out of 343 patients have LRYGBP, have underwent LRYGBP using 3 ports technique. They were 26 females and 11 males. The age was 28 years (15-52 years). The body mass index was 42.4 kg/m² (35 - 54 kg/m²). The average time of the operation was 70 minutes. The hospital stay was 1-3 days. There was one patient who had immediate postoperative hematemesis which was stopped spontaneously. One patient needs abdominal drain for 24 hours. There was no other major complications and no mortality. All of these patients were primary LRYGBP without history of previous abdominal surgeries.

ConclusionLRYGBP using 3 ports technique is feasible and safe procedure for treatment of morbid obesity although it needs extensive experience in laparoscopic and bariatric surgeries.

Single Incision Laparoscopic Adjustable Gastric Band: Early Results Incorporating New Techniques

¹Castle Medical Center

Steven Fowler¹

Background: Single Incision Laparoscopic Surgery (SILS) is rapidly being developed in the use of bariatric procedures, such as the Adjustable Gastric Band (GB).

Methods: In November 2009, SILS GB was initiated in a single surgeon practice, United States Centers of Excellence Bariatric Surgery Program. One year of data was collected. A comparative group of standard 5 port laparoscopic GB from the year prior was used as a benchmark.

Results: 58 SILS GB were performed from November 2009 to November 2010. 75 standard GB were performed the year prior. Average operating time was 70 versus 43 minutes. Complication rate for SILS GB was 5.2% versus 4%, consisting of two early band slips and one port infection. 1 month, 3 month, and 6 month %Excess Weight Loss was 13.5% versus 14.1%, 24.4% versus 23.7%, and 29.2% versus 30.4%. With the SILS GB, adding an extra port occurred 41% and adding improved liver retraction occurred 33%.

Conclusions: SILS GB requires greater operating time. Early weight loss appears comparable to standard GB. This type of surgery allows for easy adjustments in technique by adding ports or liver retractors to account for limitations in instrument design and body habitus.

SILS Bariatric Surgery for animal model

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Laparoscopic metabolic surgery was developed through the application and experienced mainly in western countries. And it is also spreading in Asian countries. Meanwhile Single-incision laparoscopic surgery is aimed at improving the cosmetic outcome following surgery appears now a day. Much of this knowledge from the procedures comes from the study of animal models, where they have revealed technical feasibility. This time we have experienced three kinds of SILS bariatric surgeries for animal models. The first one was the gastric banding, the second one was the sleeve gastrectomy and the third one is ρ -Y bypass. All of these cases, we placed SILS port near umbilicus at the beginning of surgery and used flexible forceps. In case of gastric banding, we used flexible SILS Stitch, and in case of sleeve gastrectomy we used Duet which is also flexible to avoid interference of forceps. And the bypass case, we used V-Loc suture to free from the stress of knotting. Using such new methods, we have successfully performed these bariatric surgeries. It is true that this methodology need experienced technique and need more time than conventional multi incisional surgery. But we believe we can make the operative time shorter and improves cosmetic outcome without additional risk even for human SILS bariatric surgery. This methodology may be applied widely for human as the option for new bariatric surgeries in near future. Thereby we would like to introduce these experiences.

Single-incision laparoscopic gastric bypass for morbid obesity-Using conventional trocars and instruments

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Abstract:Conventional laparoscopic Roux-en-Y gastric bypass (LRYGB) is gold standard for bariatric surgery, but the procedure requires five to seven incisions for placement of multiple trocars and thus may produce less-than-ideal cosmetic results. Recently, single-incision laparoscopic surgery (SILS) has been used for bariatric procedures, and this surgery is considered a type of minimally invasive surgery. When SILS is performed via the transumbilical route, the resultant abdominal wound is hidden and the cosmetic outcome is better. Here we present one of our cases of Single Incision transumbilical Roux en Y gastric bypass Surgery without usage of any commercially available single port systems Video: In this high Definition video, we show a single incision Laparoscopic Roux en Y gastric bypass. -Step 1 involves creating a transverse umbilical scar and raising umbilical flaps on either side-Four trocars (12mm, two 5mm and one 10mm) are inserted directly through the fascia at different sites after creating the pneumoperitoneum-the liver was retracted using a novel liver suspension technique of passing prolene suture through the liver and suspending the liver using gauze -The gastric pouch of 50ml is created in standard fashion using blue cartridges-the gastrocolic omentum is divided in the midline-the jejunum was divided at 75 cm and the jejuno-jejunostomy was done with 100cm Roux limb using linear staplers and intracorporeal sutures-The gastrojejunostomy was performed using 35mm liner staplers and the defect closed with 2-0 PDS with intracorporeal suturing

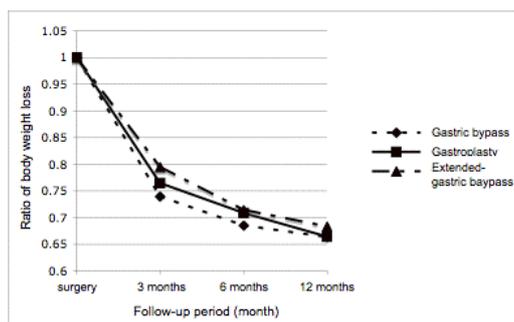
Retrospective analysis from 99 Japanese cases of bariatric surgery at Chiba University Hospital.

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Background: Since "classical-style" gastric bypass for morbid obesity has been performed in 1982, the first bariatric surgery in Japan, the number of obesity patients has been gradually increased. This is the retrospective analysis of the patient outcome at Chiba University Hospital, Japan. Patients & Methods: 99 patients have been operated for bariatric surgery in our department and our related hospital from 1982 though 2006. 31 males and 68 females were applied. The average age was 30.7 ± 9.8 years. 11 classical style gastric bypass, 69 gastroplasty (50 vertical banded gastroplasty, 8 horizontal banded gastroplasty, 11 other types), 17 Roux-Y gastric bypass, 1 sleeve gastrectomy and 1 sleeve gastrectomy with duodenal switch were performed in this study. Results: The body weight of each patients has been decreased favorably (figure). Among all surgery, no postoperative death has been observed. Conclusion: Our results indicated that bariatric surgery is safe and effective for Japanese. Although the higher disease rate of gastric cancer than western patients, we expect that more clinical trials will be designed and performed for more effective and suitable surgical procedures for Japanese obesity patients.

Figure



Similar resolution of weight and biochemical aberrations in the first 24 months despite different bariatric procedures

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Introduction: Malabsorptive operations (Scopinaro/SCOP and duodenal switch/DS) are considered more effective than Roux-en-Y gastric bypass (RYGB) for weight reduction and biochemical normalization, but comparative studies are not common. **Objective:** In a single-center prospective study, outcome in the first two years was comparatively monitored. **Methods:** Patients (N=41) were submitted to three interventions (SCOP, DS and RYGB) according to clinical criteria. There were no differences regarding age (44 ± 11 years), gender (83% females) or preoperative BMI or body weight (BMI 46 ± 5 kg/m²). Measurements included hematologic counts, iron, ferritin, triglycerides, total cholesterol and fractions, and glucose., which were documented preoperatively and 1, 3, 6, 12 and 24 months after surgery. **Results:** Patients submitted to the Scopinaro modality exhibited higher preoperative BMI (not statistically significant), but difference leveled off after 12 months. By the same token most biochemical variables normalized between 6 and 12 months, so that after two years the three populations displayed similar numbers for all documented variables. **Conclusions:** All three techniques were followed by adequate clinical and biochemical response. Scopinaro candidates were somewhat heavier but reached comparable BMI at the end of the study. Differences between the operations were not obvious during 24 months, and should probably require longer follow-up and superobese participants to be detected.

Intragastric balloon treatment for morbid obesity in Japanese patients.

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2: Department of Gastrointestinal Surgery, Toranomon Hospital

Fumihiko Hatao¹, Masako Ogawa^{1,2}, Yumie Wada¹, Nobuyuki Shimizu¹, Yasuyuki Seto¹

Background; Recently, also in Japan, bariatric surgery is a growing trend. We concern that Japanese patients undergoing bariatric surgery are at risk of developing gastric cancer, which is the most common malignancy in Japanese. Therefore, we expect that the temporary placement of intragastric balloon is suitable for Japanese.

Methods; We started the clinical trial of intragastric balloon treatment from 2007. We picked up patients according to the inclusion criteria of our institution which was “morbid obesity ($BMI \geq 35$) after conservative treatments including admission of more than one week duration and outpatient visit for 6 months.” The balloon was removed within 6 months according to the manufacturer’s suggestions.

Results; Six patients who met this criteria underwent the placement of intragastric balloon. No complications occurred. The average duration of procedure was 20.8 min. The average length of the hospital stay was 6.0 days. No one needed to remove ahead of schedule. The average weight loss and percent excess weight loss at the time the balloon was removed were 10.4 kg and 19.8%, respectively. Four patients had kept more than 20% of percent excess weight loss 6 months after the balloon removal. However, 2 patients already regained their weight during the placement of intragastric balloon.

Conclusion; Intragastric balloon treatment for morbid obesity in Japanese patients is safety and have some efficacy.

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Conclusion; Intragastric balloon treatment for morbid obesity in Japanese patients is safety and have some efficacy.

Gastric Sleeve is a single restrictive procedure?

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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 grelin, obstatin, grelin/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

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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

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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.

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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

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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.

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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

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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?

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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

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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

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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

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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

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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

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(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

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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.

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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

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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.

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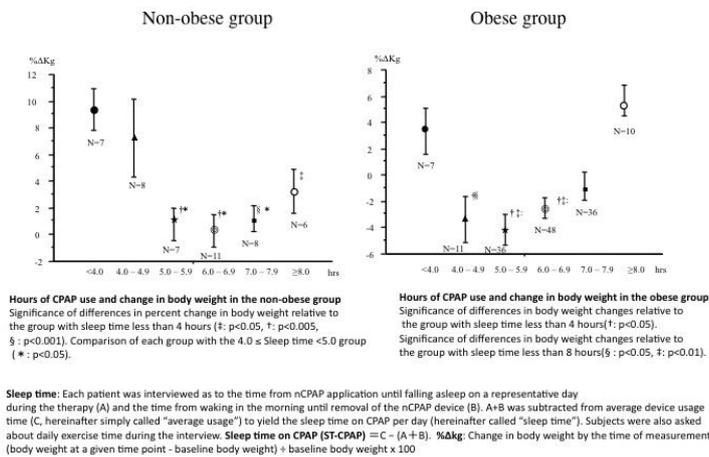
Since WHO has proposed the criteria of metabolic syndrome in 1998, obesity is focused as a risk factor of life-style related diseases. In the result, many formula diet supplements which aimed weight loss have been market in the world. Although the formula diet supplements have nutritional availability, 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

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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

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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)

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【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

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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.