Mini Gastric Bypass for Treatment of Morbid Obesity

An Essay

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in General Surgery

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List of Abbreviation

AGB	Adjustable Gastric Banding
AL	Alimentary Limb
BII	Billroth II
BMI	Body Mass Index
BPD	Bilio-Pancreatic Diversion
BPD-DS	Bilio-Pancreatic Diversion with Duodenal Switch
BPL	Bilio-Pancreatic Limb
CHD	Coronary Heart Disease
CVD	Cardio-Vascular Disease
DBP	Diastolic Blood Pressure
DS	Duodenal Switch
DVT	Deep Venous Thrombosis
EGDS	Esophago-Gastro-Duodeno-Scopia
EndoGIA	Endoscopic Gastro-Intestinal Anastomosis
e-PTFE	expanded Polytetrafluoroethylene
EWL	Excess Weight Loss
GERD	Gastro-Esophageal Reflux Disease
GERD-HRQL	Gastro-Esophageal Reflux Disease-Health Related Quality of Life
GIA	Gastro-Intestinal Anastomosis
GSRS	Gastrointestinal Symptom Rating Scale
HDL	High-Density Lipoprotein
LAGB	Laparoscopic Adjustable Gastric Banding

LASGB	Laparoscopic Adjustable Silicone Gastric Banding
LBPD-DS	LaparoscopicBilio-Pancreatic Diversion with Duodenal Switch
LDL	Low-Density Lipoprotein
LGB	Laparoscopic Gastric Bypass
LMGB	Laparoscopic Mini-Gastric Bypass
LRYGBP	Laparoscopic Roux-En-Y Bypass
LSG	Laparoscopic Sleeve Gastrectomy
LVBG	Laparoscopic Vertical Band Gastroplasty
M & M	Magenstrasse and Mill
MGB	Mini Gastric Bypass
MO	Morbid Obesity
NHANES	National Health and Nutrition Examination Survey
PPI	Proton Pump Inhibitor
PTH	Para-Thyroid Hormone
RYGBP	Roux-En-Y Bypass
SBP	Systolic Blood Pressure
SD	Standard Deviation
SG	Sleeve Gastrectomy
T2DM	Type 2 Diabetes Mellitus
TIBC	Total Iron Binding Capacity
UDCA	Urso-Desox-Cholic Acid
VBG	Vertical Band Gastroplasty
WHO	World Health Organization

INTRODUCTION

Morbid obesity referred to as "clinically severe obesity" or "extreme obesity" was defined as the criteria for bariatric surgery by the 1991 NIH Consensus Conference Statement on Gastrointestinal Surgery for Severe Obesity as a BMI ≥ 40 kg/m2 or a BMI ≥ 35 kg/m2 in the presence of high risk co morbid conditions ***(Buchwald, 2005).***

The body-mass index (BMI), which takes into account weight and height. This index is expressed in kilograms per square meter (kg/m2). The term obesity applies when the BMI is greater than or equal to 30 kg/m2. A BMI between 25 and 29.9 kg/m2 is called overweight ***(Angrisani et al., 2009).***

Waist circumference measurement is particularly useful in patients who are categorized as normal or overweight. It is not necessary to measure waist circumference in individuals with BMIs ≥ 35 kg/m2 since it adds little to the predictive power of the disease risk classification of BMI. Men who have waist circumferences greater than 40 inches, and women who have waist circumferences greater than 35 inches, are at higher risk of diabetes, dys-lipidemia, hypertension, and cardio-vascular disease because of excess abdominal fat ***(Lemieux et al., 2008).***

Surgery for morbid obesity, termed bariatric surgery, falls into two general categories: 1) gastric-restrictive procedures that create a small gastric pouch, resulting in weight loss by producing early satiety and thus decreasing dietary intake; and 2) malabsorptive procedures, which produce weight loss due to malabsorption by altering the normal transit of ingested food through the intestinal tract. Some bariatric procedures may include both a restrictive and a malabsorptive component ***(Santry et al., 2010).***

With advances in minimally invasive technology, laparoscopic Roux-en-Y bypass (LRYGBP) has been reported as a safe alternative to open RYGBP. However, it is a technically challenging procedure. The learning curve is very steep and associated with longer operating times and higher perioperative complication ***(Lee et al., 2011).***

Laparoscopic mini-gastric bypass (LMGBP), first reported by Rutledge, was proposed as a simple and effective treatment of morbid obesity. However, controversies about the relative safety of this procedure remain, mainly the incidence of marginal ulcer, reflux esophagitis and biliary gastritis ***(Fisher et al., 2011).***

The technique used for LMGBP was a 5-port technique similar to that described by Rutledge ***(Rutledge, 2001).*** A long gastric tube was created using an Endo GIA

stapler approximately 1.5 cm to the left of the lesser curvature from the antrum to the angle of His. A loop gastroenterostomy was created with the small bowel about 200 cm distal to the ligament of Trietz with an Endo-GIA stapler. The gastroenterostomy was then closed with continuous suture ***(Lee et al., 2011).***

AIM OF THE WORK

This work aims at evaluation of mini gastric bypass for treatment of morbid obesity as regards, weight loss & complications.

MORBID OBESITY DEFINITION AND COMPLICATIONS

Obesity is defined by the World Health Organization (WHO) as abnormal or excessive fat accumulation that may impair health. It is considered a chronic disease ***(World Health Organisation, 2004).***

Morbid obesity (MO), defined as a Body Mass Index (BMI) above 40 ***(Buchwald et al., 2005).***

Obesity is now considered to be the second leading cause of preventable death behind cigarette smoking ***(Schauer et al., 2007).***

Body mass index (BMI) is a commonly used index for classifying adult individuals. BMI is the weight in kilograms divided by the square of the height in meters (kg/m^2). The WHO defines overweight as a BMI equal to or more than 25 and obesity as a BMI equal to or more than 30 ***(World Health Organisation, 2004).***

Obesity is further subdivided into classes where class 1 is a BMI of 30-34.9, class 2 a BMI of 35-39.9 and class 3 a BMI $\geq$40. A BMI from 18.5 to 25 is desirable in adults. The classification system is based on data indicating that optimal BMI with respect to long-term survival is between 18.5 and

25 and that mortality risk increase at a BMI above 25 ***(World Health Organisation, 2004).***

Other non-WHO used definitions are morbid obesity (BMI 40-50) and super-obesity (BMI>50). BMI is an approximate index since no consideration is taken to which body compartment the weight comes from ***(World Health Organisation, 2004).***

It has been estimated that in 2005 at least 400 million adults were obese and the projection for 2015 is that 700 million will be obese worldwide ***(World Health Organisation, 2004).***

Obesity has previously been thought of as a problem only in high-income countries; however, there is a dramatic increase seen in low and middle-income countries as well ***(World Health Organisation, 2004).***

There is a marked increase in the Eastern Mediterranean Region. In this area of the world physical exercise is seldom done and along the same lines, dietary habits have also undergone a major change. Fat consumption has risen and fast food outlets are available more readily ***(Zimmet et al., 2005).***

In Egypt 30.3% of the adult population are considered obese according to the latest **(Fig. 1)**. The highest percentage