

Evaluation of Laparoscopic Single Anastmosis Gastric
Bypass for Morbid Obese Patients

Thesis

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يؤتيه من يشاء
والله ذو الفضل
العظيم

صدق الله العظيم
سورة الجمعة الآية
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List of Abbreviations

BMC :	Bone mineral content
BMD :	Bone mineral density
BMI :	Body mass index
BPD :	Biliopancreatic diversion
BPD-DS :	Biliopancreatic diversion with duodenal switch
CHD :	Coronary heart diseases
CT :	Computed tomography
D₂O :	Deuterium oxide
DEXA :	Dual energy X-ray absorptiometry
DVT :	Deep venous thrombosis
ERCP :	Endoscopic retrograde cholangiopancreatogrpahy
EWL :	Expected weight loss
FFM :	Fat free mass
FM :	Fat mass
GBP :	Gastric bypass
GLP-1 :	Glucagon link peptide-1
HDL-C :	High density lipoprotein cholesterol
IGS :	Implantable gastric stimulator
IWQoL:	Impact of Weight on Quality of Life
LCD :	Low calorie diets
LDL-C:	Low density lipoprotein cholesterol
LMGB:	Laparoscopic Mini- gastric bypass
LRYGBP :	Laparoscopic Roux-en-Y gastric bypass

List of Abbreviations

MRI :	Magnetic resonance imaging
NHLBI :	National Heart, Lung and Blood Institute
NIDDM :	Non insulin dependent diabetes mellitus
NOTES :	Natural orifice transluminal endoscopic surgery
NSAID :	Non steroidal anti inflammatory drugs
OGTT :	Oral glucose tolerance test
OSA :	Obstructive sleep apnea
PCOS :	Polycystic ovary syndrome
PVN :	Paraventricular nucleus
RYGBP :	Roux-en-Y gastric bypass
SFT :	Skinfold thickness
TBW :	Total body water
VAS :	Visual analogue scale
VBG :	Vertical banded gastroplasty
VLCD :	Very low calorie diets
VMN :	Ventromedial nucleus
WHO :	World health organization

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INTRODUCTION

Obesity is a pan-endemic health problem in both developed and developing countries. Obesity, and in particular morbid obesity (defined as a body mass index [BMI] > 40 kg/m²), leads to a high incidence of complications and a decrease in life expectancy, especially among younger adults(*Fontaine et al.,2003*).

Obeisty is a major risk factor for type 2 diabetes (T2D), hypertension, dyslipidemia, atherosclerosis, heart failure, cancer, liver disease, obstructive sleep apnea, infertility, degenerative joint disease, depression, and dementia (*Whitmer et al.,2008*).

Among severely obese patients, bariatric operations causeprofound, sustained weight loss, ameliorating virtually all obesity-related comorbidities and reducing long-term mortality(*Buchwald et al., 2007*).

Laparoscopic mini-gastric bypass (LMGBP), first reported byRutledge, was proposed as a simple and effective treatment of morbid obesity (*Rutledge, 2001*).

Rutledge et al. reported improvement or resolution of gastro-oesophageal reflux in 85 % of patients, shortness of breath in 96 % of patients, diabetes in 83 % of patients, sleep apnoea in 87 % of patients, hypertension in 80 % of patients,

hypercholesterolaemia in 89 % of patients, and urinary incontinence in 82% of patients (*Rutledge and Walsh, 2005*).

At the same time, this procedure has its own unique advantages. It is an attractive bariatric procedure compared to the gold standard Roux-en-Y gastric bypass (RYGB) with one less anastomosis. Many thousands of these procedures have now been performed by different surgeons who believe it is a better alternative to RYGB due to shorter operative time, fewer sites for anastomotic leaks and internal herniation, shorter learning curve, ease of reversibility and revision with equivalent results in terms of weight loss and co-morbidity resolution (*Lee et al., 2012*).

The operation consists primarily of a long linear lesser-curvature gastric tube with gastroenterostomy 180–200 cm distal to the duodenojejunal junction (Ligament of Treitz). It has rightly been described as a modification of Mason's loop gastric bypass, but with a longer lesser curvature tube (*Wang et al., 2005*).

The most notorious controversy concerning the disadvantage of LMGB was with postoperative esophagitis and gastritis caused by bile reflux. The prejudice was from old Mason's loop gastric bypass with up to 70 % of annoying bilious vomiting and gastritis reported (*Carbajo et al., 2010*).

Symptomatic reflux has indeed not been reported to be a major problem after MGB. Carbajo et al. studied reflux with 24 pH and manometry in conjunction with endoscopy at 12 and 18 months after surgery in their first 20 patients, and the results were normal in all. Rutledge reported significant improvement (85 %) in reflux-related symptoms in his series (*Carbajo et al., 2005*).

The rate of marginal ulcer after the MGB has been 2%. This is relatively low when compared to other operations.¹²⁻¹⁴ The factors associated with the development of marginal ulcer include stapleline dehiscence, pouch size, pouch orientation, postoperative mucosal ischemia, nonsteroidal anti-inflammatory drugs and H. pylori infection. By dividing the lesser curvature pouch, gastrogastic fistulas virtually do not occur after the MGB (*Carbajo et al., 2010*).