Efficacy Of Laparoscopic Mini Gastric Bypass

Essay

Submitted for Partial Fulfillment of Master Degree

In General Surgery

By

Mina Isaq Pules

(M.B, B.Ch)

Minia University

Under supervision of

Prof. Dr. Asharaf Farouk Abader

Professor of General Surgery

Faculty of Medicine

Ain Shams University

Dr. Mohamed Ali Lasheen

Lecturer of General Surgery

Faculty of Medicine

Ain Shams University

Faculty of Medicine

Ain Shams University

2015

عملية تحويل المعدة المصغرة بالمنظار

رسالة توطئة

للحصول على درجة الماجستير في الجراحة العامة

مقدمة من

الطبيب /مينا اسحاق بولس

بكالوريوس الطب والجراحة

جامعة المنيا

تحت إشراف

الأستاذ الدكتور/أشرف فاروق ابادير

أستاذ الجراحة العامة

كلية الطب- جامعة عين شمس

دكتور/ محمد علي لاشين

مدرس الجراحة العامة

كلية الطب- جامعة عين شمس

كلية الطب

جامعة عين شمس

2015

Table of Contents

List 0f abbreviations

T10	Thoracic 10
T11	Thoracic 10
CHA	Common Hepatic Artery
LGA	left Gastric Artery
GDA	Gastro-duodenal Artery
RGEA	Right Gastro-Epiploic Artery
SPDA	SuperiorPancreatic-duodenal Artery
LGEA	left Gastro-Epiploic artery
LARPVT	Left (Anterior) and Right (Posterior) Vagal Trunks
IVC	Inferior Vena Cava
SMA	Superior Mesenteric Artery
SMV	Superior Mesenteric Vein
PV	Portal Vein
IMV	Inferior Mesenteric Vein
DJ	Duodeno-jejunal
SV	Splenic Vein
HDL	Hepato-duodenal ligament
BMI	Body Mass Index
DXA	Dual Energy X-ray Absorptiometry
WHR	Waist/Hip Circumference Ratio
PVN	Paraventricular Nuclei
VMN	Ventromedial Nuclei
NPY	Neuropeptides Y
MCH	Melanocortin Hormone
CCK	Cholecystokinin
CRH	Corticotropin-Releasing Rormone
GLP1	Glucagon-like peptide-1
GABA	Gamma Aminobutyric Acid
NPY	Neuropeptide Y
POMC	proopiomelanocortin
Alpha-MSH	Alpha-Melanocyte-Stimulating Hormone
MC4	Melanocentin 4
VBG	Vertical Banded Gastroplasty
ASGB	Adjustable Silicon Gastric Banding

EWL	Excess Weight Loss
REYBP	Roux En Y Bypass
MGB	Mini Gastric Bypass
SAGB	Single Anastomosis Gastric Bypass
EC	Esophago-Cardia
BP Limb	Bypass Limb
SADI-S	Single-Anastomosis Duodeno-Ileal Anastomosis With sleeve Gastrectomy
SADJB-SG	Single-Anastomosis Duodenojejunal Bypass WithSleeve Gastrectomy
BPD	Biliopancreatic Diversion
BPD/DS	Biliopancreatic DiversionAnd Duodenal Switch
BPL	Biliopancreatic limb,
LMGBP	Laparoscopic Mini Gastric Bypass

List of Tables

List of Figures

First of all, I should express my deep thanks to Allah, without his great blessing, I would never accomplish my work, and to whom I relate any success in achieving any work in my life.

I would like to express my sincere appreciation and deepest gratitude to Prof. Dr. Ashraf faroukabader professor of General Surgery, Ain-Shams University, for his meticulous advice, continuous encouragement and valuable instructions, help, all through this work, honest assistance and active guidance and the precious time he had given in follow up of this work.

I am deeply grateful to Dr. Mohamed Ali Lasheen lecturer of General surgery, Ain Shams University ,of every word and every step in this work have been kindly arranged by his sincere, effort and care .

My truthful affection and love to My Family and My Friends who were and will always be by my side all my life.

For the soul of my sister

Mina Isaq

INTRODUCTION

Obesity is a state of excess adipose tissue mass. Although often viewed as equivalent to increased body weight, this need not be the case-lean but very muscular individuals may be overweight by numerical standards without having increased adiposity. Body weights are distributed continuously in populations, so that choice of a medically meaningful distinction between lean and obese is somewhat arbitrary. Obesity is therefore more effectively defined by assessing its linkage to morbidity or mortality. **(Flier and Flier, 2008)**

Overweight and obesity are associated with multiple co-existing conditions, including hypertension, glucose intolerance, dyslipidemia and obstructive sleep apnea. Moreover , obesity is associated with an increased risk of death from cardiovascular disease , diabetes , kidney disease and obesity related cancers (colon , breast , esophagus , uterus , ovaries , kidneys and pancreas). ***(Flegal KM et al., 2007)***

The goal of weight-loss therapy is to improve health by modifying obesity-related diseases and the risk for future obesity-related medical complications**. *(Klein, 2001).***

A new development is the laparoscopic minigastric bypass procedure, a modification of the older loop gastrojejunostomy. It involves the formation of a long gastric tube approximately 1.5cm to the left of the lesser curvature of the stomach from the antrum to the angle of His and then a loop gastroenterostomy is formed, about 200 cm from the ligament of Treitz (figure-15) **(Rutledge R, 2001).**

One important controversy about the procedure is the ideal name for this procedure. The name “mini,” which implicates “short” or “small” does not provide any accurate information about this procedure. The name “loop bypass” better describes the

original Manson loop bypass. Because the most important part of this technique is the "single" or "one" anastomosis versus two for RYGB, we prefer the term single-anastomosisgastric bypass. The name "single-anastomosis" is already in common usage as it has been proposed for a modified duodenal switch procedure, the single-anastomosis duodeno-ileal anastomosis with sleeve gastrectomy (SADI-S), and the single-anastomosis duodenojejunal bypass with sleeve gastrectomy (SADJB-SG)**. (Hansson L.E,, et al.1996)**

It is a simpler and easier laparoscopic procedure to perform than RYGBP; however, long-term data are still needed to determine whether it can match RYGBP in terms of sustained weight reduction and also whether there is an increased incidence of long-term complications such as biliary reflux, marginal ulceration and reflux oesophagitis. **(Rutledge R, 2003)**

All of the patients received care under a standard clinical pathway. The nasogastric tube was removed on the first postoperative day, and patients were encouraged to ambulate as soon as they felt comfortable. Oral feeding was allowed starting on the third postoperative day provided the patient had flatus passage and a normal gastrografin contrast study. Patients were discharged on the fourth postoperative day if they felt able to return home, and the hemovac drains were removed at the outpatient clinic after the 3rdpostoperative day. Postoperatively, patients were followed up by the aforementioned multidisciplinary team, and outpatient clinic visits were scheduled once a month for the first 3 postoperative months and every 3 months thereafter. Patients were advised to take a daily multivitamin tablet as a supplement. Iron supplement, vitamin B12 injection, calcium, and blood transfusion were given only in symptomatic patients. Radiology or endoscopy examination was if clinically indicated. **(Rutledge R, 2001)**

Aim of the Work

The aim of this work is to discuss management of morbid obesity, and efficacy of laparoscopic mini gastric bypass.

Anatomy

Embryology and anatomy of stomach:

During the fifth week of gestation the stomach arises as a dilatation in the tubular embryonic foregut .It assumes its normal asymmetric shape and position by the end of the seventh week through descent, rotation, and progressive dilation, with disproportionate elongation of the greater curvature. It is likely that there is a congenital predisposition to some unusual benign gastric problems such as diverticulum or massive hiatal hernia with abnormal gastric rotation and fixation. **(Grant JCB, Basmajian JV.2006).**

The thoracic esophagus enters the abdomen via the esophageal hiatus of the diaphragm at the level of T10. The abdominal portion of the esophagus has a small intra-abdominal length (2-3 cm). The esophago-gastric junction (cardia), therefore, lies in the abdomen below the diaphragm to the left of the midline at the T11 level.**(Agur AMR, Lee MJ, 2000).**

The stomach and the first part of the duodenum are attached to the liver by the hepatogastric ligament (the left portion of the lesser omentum), to the left hemi diaphragm by the gastrophrenic ligament, to the spleen by the gastrosplenic/gastrolienal ligament containing short gastric vessels, and to the transverse colon by the gastrocolic ligament (part of the greater omentum). Few peritoneal bands may be present between the posterior surface of the stomach and the anterior surface of the pancreas. Part of the greater omentum hangs like an apron from the transverse colon, with 4 layers of the peritoneum (often fused): 2 layers go downward from the stomach and then run upward to be attached to the transverse colon.**(Agur AMR, Lee MJ,2000) .**

Blood supply of stomach:

The celiac trunk (axis) arises from the anterior surface of the abdominal aorta at the level of L1. It has a short length (about 1 cm) and trifurcates into the common hepatic artery (CHA), the splenic artery, and the left gastric artery (LGA). **(Chung DH, 2002).**

The LGA runs toward the lesser curvature of the stomach and divides into an ascending branch (supplying the abdominal esophagus) and a descending branch (supplying the stomach). The CHA runs toward the right on the superior border of the pancreas and gives off the gastroduodenal artery (GDA), which runs down behind the first part of the duodenum. After giving off the GDA, the CHA continues as the proper hepatic artery **(Chung DH, 2002).**

The right gastric artery, a branch from the proper hepatic artery, runs along the lesser curvature from right to left and joins the descending branch of the LGA to form an arcade along the lesser curvature between the 2 leaves of peritoneum of the lesser omentum. This arcade gives off multiple small arteries to the body of the stomach. The GDA divides into the right gastro-omental (gastroepiploic) artery (RGEA) and the anterior superior pancreaticoduodenal artery (SPDA); it also gives off the small supraduodenal artery (of Wilkie). The RGEA runs along the greater curvature from right to left. **(Moore KL, 2003).**

The splenic artery runs toward the left on the superior border of the distal body and tail of pancreas and gives off the left gastro-omental artery (LGEA), which runs from left to right along the greater curvature and joins the RGEA to form an arcade along the greater curvature between the two leaves of peritoneum of the greater omentum. **(Moore KL, 2003).**

The greater curvature arcade formed by the RGEA and the LGEA provides several omental (epiploic) branches to supply the highly vascular greater omentum. The splenic artery also gives off

3-5 short gastric arteries that run in the gastrosplenic ligament and supply the upper part of the greater curvature and the gastric fundus. The stomach has a rich network of vessels in its submucosa. **(Gray H, Lewis WH.2000).**

The left gastric (coronary) vein drains into the portal vein at its formation (by the union of the splenic and superior mesenteric veins). The right gastric and right gastro-omental veins drain into the portal vein. The left gastro-omental vein drains into the splenic vein, as do the short gastric veins.

The pylorus is marked by an angular or prepyloric vein (of Mayo), which lies along the incisura angularis. The gastrocolic trunk is present in a large number of cases and lies at the junction of the small bowel mesentery and the transverse mesocolon. It may drain the right colic, middle colic, and right gastro-omental veins. **(Gray H, Lewis WH.2000).**

The short gastric arteries and veins are sometimes collectively referred to as the vasa brevia. **(Gray H, Lewis WH.2000).**

Lymphatic Drainage:

Generally, the lymphatic drainage of the stomach parallels the vasculature and essentially drains into four zones of lymph nodes, as depicted in Figure 47-3. The superior gastric group drains lymph from the upper lesser curvature into the left gastric and paracardial nodes. The suprapyloric group of nodes drains the antral segment on the lesser curvature of the stomach into the right suprapancreatic nodes. The pancreaticolienal group of nodes drains lymph high on the greater curvature into the left gastroepiploic and splenic nodes. The inferior gastric and subpyloric group of nodes drains lymph along the right gastroepiploic vascular pedicle. All four zones of lymph nodes drain into the celiac group and into the thoracic duct. Although the aforementioned lymph nodes drain different areas of the stomach, it remains widely recognized that gastric cancers may

metastasize to any of the four nodal groups regardless of the cancer location. In addition, the extensive submucosal plexus of lymphatics accounts for the fact that there is frequently microscopic evidence of malignant cells several centimeters from the resection margin of gross disease. **(Romanes GJ.2000).**

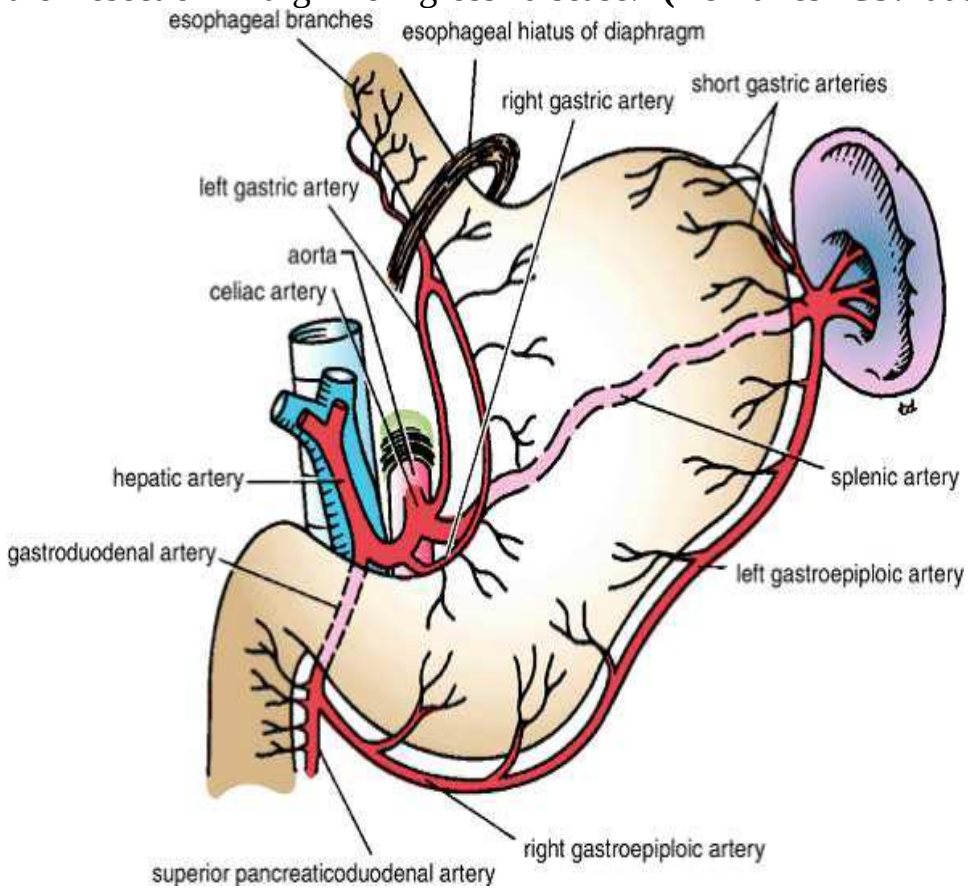

Figure-1: stomach blood supply. **(Chung DH, 2002)**