# Medical Management of Patients with Modified Intestinal Bypass: A New Promising Procedure for Morbid Obesity

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*Received: 7 December 2013 Accepted: 1 January 2014 Published: 15 January 2014*

## Abstract

Background and Aim: Obesity is a chronic disease that is increasing in prevalence worldwide. Bariatric surgery could be the definitive clue in many situations. Medical management and follow up of patients who have undergone bariatric surgery is a challenge opportunity due to post operative complications. A new modified intestinal bypass (MIBP) operation was designed to maintain good digestion and selective absorption with less medical and surgical complications. Patients and Methods: We experienced 157 patients medical follow up ; 122 females (78.2

***Index terms***— bariatric, gastrointestinal, obesity, modified intestinal bypass (MIBP), laparoscopic, elbanna.

## 1 Introduction

here are several well-established health hazards associated with obesity e.g.: NASH, type 2 diabetes, heart disease, GERD, GI motility disorders, sexual disorders , depression and others. The risk of development of such complications rises with increasing adiposity, while weight loss can reduce the risk **??**1]. Weight loss is encouraged in any mean to overcome morbidity and diseases -affecting survival. For patients with BMI ?40 kg/m2 who have failed to lose bariatric surgery become the clue, whatever the laparoscopic bariatric approach is preferred over the open approach [2].Medical management and follow up of patients who have undergone bariatric surgery is a challenge opportunity for a skilled Gastroenterologist, including an assessment and treatment of possible nutritional defects, eating disorders, dysmotility syndrome, elevated liver enzymes and psychosocial problems. Occasionally, patients develop vomiting and nutritional deficiencies as a result of food intolerance and malabsorption respectively after bariatric surgery [3,4]. As well as chronic medical conditions; D.M, Hypertension and Non Alcoholic Steatohepatitis (NASH) improve after bariatric surgery, clinicians should monitor medications' doses after the surgery in an intimate follow up [5,6]. Gastroenterologist should have much knowledge -related different and recent bariatric procedures to expect further complications and follow up accordingly.

## 2 II.

## 3 Patients and Methods

follow up; 122 females (78.2%) and 34 males (21.8%), aged 21 to 52 years old; (39.7 ± 9.2) mean age, with morbid obesity BMI ?40 kg/m2 who have undergone (MIBP) in the period from December 1999 to December 2010. All subjects have undergone a new modified intestinal bypass MIBP surgery (Novel Elbanna bariatric surgery). Subjects were followed up for 3 years after the novel procedure, as well as we evaluated nutritional supplements, eating disorders, vomiting, and other post operative complications. Follow up included EWL and Evaluation of (ca++), albumin, Hg, iron, zinc, B12 and PC levels at the time of operation, 3, 6 and 12 months postoperatively and every year thereafter for 3 years.

We retrospectively reviewed their data, in the Gastroenterology-Bariatric Units of Al Azhar University Hospitals-faculty of Medicine, and other private centers-Arab Republic of Egypt.

All patients presented with comorbidities of DM, Hypertension, Cardiac problem, Respiratory failure Type Zinc and hemoglobin decreased at 3, 6 months post operatively. For B 12, significant decrease occurred at 6 th month followed by significant increase in the 1 st year and thereafter. Albumin decreased only between 3 rd and 6 th month otherwise became normal all over the study. Iron shows significant decrease at 3, 6 months and 1 st year post-operative followed by significant increase to normal levels the rest of follow up period. Prothrombin concentrations showed no changes. showing EWL through 3 years post operative Figure **??**: I or NASH at the time of presentation, all patients were non-alcoholic due to religious belief. Alcoholic patients were excluded from our study.

The study was conducted with the approval of the Institutional Board committee of Al Azhar University Hospitals Committee-Cairo-Egypt. We received informed written consent form each patient.

# 4 III.

# 5 Statistical Study

Statistical analysis was used to determine the association between the BMI and each case group of non-alcoholic patients presented with morbid obesity, Qualitative data of EWL (Excessive weight loss) were expressed as number and percentage.

Data were statistically described in terms of mean ± standard deviation (M± SD). Comparison among different time points was done using one way analysis of variance (ANOVA) test with posthoc multiple 2-group comparisons. p values less than 0.05 was considered statistically significant. All statistical calculations were done using computer programs SPSS (Statistical Package for the Social Science; SPSS Inc., Chicago, IL, USA) version 15 for Microsoft Windows.

IV.

# 6 Results

Significant EWL post operatively after three months (35), six months (57%) , one year (71%) , two years (80%) , three years (84%), followed by nearly a stationary course till the moment. Most of the element deficiencies in our study occurred in the period of maximum weight loss.

No vitamins or minerals supplementations were reported, only dietary intake rich in vitamins, proteins and iron was encouraged.

No significant difference between male and female outcome.

Post operative complications were reported as follow: Bleeding: **??** V.

# 7 Discussion

Obesity is a chronic disease that is increasing in prevalence worldwide. In 2010 the prevalence of obesity was 35.5 and 35.8 percent among adult American men and women, respectively. In Canada more than 27 percent of men and 23 percent of women are obese. Reported prevalence rates of obesity include 23 percent of men and women in the UK (2009), 24 percent of men and 34 percent of women in Mexico (2006) and 9 percent of men and 27 percent of women in South Africa (2003). [7,8,9]. These data and those from other countries are indicative of a major international epidemic, a steady and distressing increase worldwide.

The medical rationale for weight loss in obese subjects is that obesity is associated with a significant increase in mortality and many health risks affecting quality of life including type 2 diabetes mellitus, hypertension, dyslipidemia, stroke, NASH and coronary heart disease.

Large epidemiologic studies have evaluated the relationship between obesity and mortality, in order to monitor patients, especially those with NASH [10]. In general, greater BMI is associated with increased rate of death from all causes and from cardiovascular disease (CVD) and NASH-induced decompensated cirrhosis. This is particularly true for those with severe obesity. Being overweight also appears to be associated with decreased survival in some studies [11,12,13]. Unfortunately obesity became a worldwide stigma, currently obese subjects are often exposed to public disapproval because of their fatness affecting significantly their psychosocial behavior. All patients who are obese (BMI ?30 kg/m2) should receive counseling on diet, lifestyle, and goals for weight management. Individuals with BMI ?40 kg/m2 and those with BMI >35 kg/m2 with obesity-related comorbidities who have failed diet, exercise, and drug therapy, bariatric surgery should be considered.

Bariatric surgery is one of the fastest growing operative procedures performed worldwide, with an estimated >340,000 operations performed in 2011. While the absolute growth rate of bariatric surgery in Asia was 449 percent between 2005 and 2009, the number of procedures performed in the United States have plateaued at approximately 200,000 operations per year [14,15]. All bariatric operations concerned with restrictive and / or malabsorption maneuvers; less food intake and malabsorption concept. The most common operations performed worldwide are Roux-en-Y gastric bypass (RYGB), the laparoscopic adjustable gastric band (GB), and the sleeve gastrectomy (SG).

# 8 Unfortunately many complications reported following

Volume XIV Issue I Version I Reanastomosis is performed between the proximal jejunum and the terminal ileum 100 cm from the ileocaecal valve. Duodenum, Proximal 50 cm of jejunum and 100 cm of terminal help the physiological absorption.Preservation of the anatomical biliary drainage and enterohepatic circulation are the most procedural advantage. Fundal resection performed to get maximum effect on appetite and satiety. We reported only one case mortality due to cardiogenic shock. However, we reported many complications as listed in results. Patients who underwent this procedure did not show significant complications, including arthritis, protein malnutrition, vitamin deficiencies, cirrhosis, neurological complications or renal failure. The most common causes of early rehospitalization are nausea, vomiting, abdominal pain, abdominal distension, dehydration, early hypoglycemia and wound problems.

Patients with eating disorders, distension or motility disorders should be evaluated clinically; prescription of triple therapy of prokintetic drug, natural anti-spasmodic and PPI was very effective especially in early post operative period in all patients. Lifestyle changes are important component of managing motility disorders includes smoking cessation, head of bed elevation, and avoidance of chocolate, caffeine, spicy foods, alcohol, beverages, fatty meal and other foods that exacerbate GI symptoms. Also lifestyle changes are very important as initial approach for those presented with mild or infrequent symptoms of vomiting and or GERD. The problematic fatty accumulation (Fatty Liver) was reported due to rapid loss of weight which recovered clinically and disappeared sonographicaly after 1 year of the procedure, ultimately we recommend I gradual loss of weight with a maximum 7-8 Kg/month loss of weight. All patients presented with comorbidities of DM, hypertension, cardiac problem, respiratory failure, NASH, sexual life disorders and / or psychosocial intolerance showed significant impro-vement either clinically or by U/S,CT, Respiratory tests or echocardiography investigation modalities. We always stress the importance of eating all meals, particularly breakfast. Adolescents have undergone bariatric surgery should be informed that skipping meals does not help with weight control, unfortunately may promote weight gain and nutritional deficiencies.

We recommend early therapy with IV Pantoprazole and prokintetic medications if marginal ulceration detected endoscopicaly.

In a Conclusion, now bariatric surgery passes through a plateau phase, medical management and follow up of patients who have undergone bariatric surgery which is a challenge opportunity, accordingly the novel (MIBP) El Banna operation concept is to change maldigestion and malabsorption concept of bariatric procedures to good digestion and selective absorption.

# 9 VI.

# 10 Limitation of the Study

Our methods of research, clinical and even surgical skills played the major role in all information mentioned in the study, hence we encourage other researches from different countries may show more significant results according to different environments, dietary habits and cultures.

# 11 VII.

# 12 Future Recommendation

Whatever obesity is a worldwide epidemic, affecting also children, we have to innovate techniques in pediatric bariatric surgeries, accordingly to save our children from pre-mature morbidities and mortalities, El banna pediatric modified technique ; New Bariatric surgical technique in pediatric obesity, could be a new innovation in coming days ! [1]


Figure 1:

Figure 2: II

**2** 

Figure 3: Figure 2 :

Figure 4:

**3** 

Figure 5: Figure 3 :I

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Figure 6: Figure 4 Figure 5

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Figure 7: Table ( 1

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| Time of Follow Up | Pre.Op | 3 months | 6 months | 1 year | 18 months | 2 Years | 3 Years |
|---|---|---|---|---|---|---|---|
| EWL % | 0 | 35 | 57 | 71 | 78 | 80 | 84 |
| Calcium (mmol/L) | 2.3 | 2.1 | 1.9 | 2.5 | 2.4 | 2.4 | 2.3 |
| Albumin (g/L) | 39.8 | 38.7 | 36.1 | 39.1 | 40.5 | 41.2 | 42.8 |
| Iron (umol/L) | 9.6 | 8.8 | 8.0 | 9.0 | 9.6 | 10.1 | 10.6 |
| Zinc (umol/L) | 11.1 | 10.7 | 9.8 | 11.8 | 12.2 | 12.7 | 12.6 |
| Hg (g/L) | 121.2 | 116.9 | 119.2 | 122.8 | 121.6 | 120.4 | 123.8 |
| Vit.B12 (Pmol/L) | 341.3 | 328.8 | 295.2 | 367.5 | 360.6 | 351.3 | 376.4 |
| Proth.Con. % | 92.3 | 90.6 | 92.7 | 91.0 | 92.5 | 93.9 | 92.6 |

Figure 8: Table 1 :

**2**

| Serial | Reported Complication | Number & percentage of patients |
|---|---|---|
| 1 | Bleeding | (3.1%); 5 patients |
| 2 | Leak | ( 2.5 %) ; 4 patients |
| 3 | Infection | ( 0.6 %); 1 patient |
| 4 | Internal Hernia | ( 0.6 %); 1 patient |
| 5 | Incisional hernia | (1.3%) ; 2 patients |
| 6 | Abdominal Distension | (31.2 %); 49 patients |
| 7 | Vomiting | (41.4 %); 65 patients |
| 8 | Motility disorders | (41.4%); 65 patients |
| 9 | Hypoglycemia (Early) | (5.09 %); 8 patients |
| 10 | Hypoglycemia (Late) | (1.9%) 3 patients |
| 11 | Cholilithiasis | (0.6 %); 1 patient |
| 12 | Renal Stone | (0.6 %); 1 patient |
| 13 | Failure to lose weight | (0.6 %); 1 patient |
| 14 | Failure to gain weight | (1.3%) ; 2 patients |
| 15 | Pulmonary embolism | - |
| 16 | Mortality | 1 |

Figure 9: Table 2 :

# .1 Sleeve bypass

[ Obesity Surgery ()] , 10.1007/s11695-013-0986-z. http://link.springer.com/article/10.1007/s11695-013-0986-z *Obesity Surgery* 2013. 23 (8) p. 1214.

[Klein et al. ()] 'AGA technical review on obesity'. S Klein , T Wadden , H J Sugerman . *Gastroenterology* 2002. 123 p. 882.

[American Gastroenterological Association medical position statement on Obesity Gastroenterology ()] 'American Gastroenterological Association medical position statement on Obesity'. *Gastroenterology* 2002. 123 p. 879.

[Available online at: www.asbs.org/ Newsite07/media/asbs_presskit.htm (Accessed on (2009)] *Available online at: www.asbs.org/ Newsite07/media/asbs_presskit.htm (Accessed on*, 2009. January 28. 2009. American Society for Metabolic and Bariatric Surgery. (Fact Sheet: Metabolic & Bariatric Surgery)

[Gu et al. ()] 'Body weight and mortality among men and women in China'. D Gu , J He , X Duan . *JAMA* 2006. 295 p. 776.

[Flegal et al. ()] 'Cause-specific excess deaths associated with underweight, overweight, and obesity'. K M Flegal , B I Graubard , D F Williamson , M H Gail . *JAMA* 2007. 298 p. 2028.

[Dalcanale et al. ()] 'Longterm nutritional outcome after gastric bypass'. L Dalcanale , C P Oliveira , J Faintuch . *Obes Surg* 2010. 20 p. 181.

[Gong et al. ()] 'Micronutrient deficiencies after laparoscopic gastric bypass: recommendations'. K Gong , M Gagner , A Pomp . *Obes Surg* 2008. 18 p. 1062.

[Yan et al. ()] 'Midlife body mass index and hospitalization and mortality in older age'. L L Yan , M L Daviglus , K Liu . *JAMA* 2006. 295 p. 190.

[Finucane et al. ()] 'National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9?1 million participants'. M M Finucane , G A Stevens , M J Cowan . *Lancet* 2011. 377 p. 557.

[Tucker et al. ()] 'Nutritional consequences of weight-loss surgery'. O N Tucker , S Szomstein , R J Rosenthal . *Med Clin North Am* 2007. 91 p. 499.

[Adams et al. ()] 'Overweight, obesity, and mortality in a large prospective cohort of persons 50 to 71 years old'. K F Adams , A Schatzkin , T B Harris . *N Engl J Med* 2006. 355 p. 763.

[Snow et al. ()] 'Pharmacologic and surgical management of obesity in primary care: a clinical practice guideline from the American College of Physicians'. V Snow , P Barry , N Fitterman . *Ann Intern Med* 2005. 142 p. 525.

[Flegal et al. ()] 'Prevalence and trends in obesity among US adults'. K M Flegal , M D Carroll , C L Ogden , L R Curtin . *JAMA* 1999-2008. 2010. 303 p. 235.

[Flegal et al. ()] 'Prevalence of obesity and trends in the distribution of body mass index among US adults'. K M Flegal , M D Carroll , B K Kit , C L Ogden . *JAMA* 1999-2010. 2012. 307 p. 491.

[Nguyen et al. ()] 'Trends in use of bariatric surgery'. N T Nguyen , H Masoomi , C P Magno . *J Am Coll Surg* 2003-2008. 2011. 213 p. 261.