



## Laparoscopic Total Gastric Vertical Plication and Lipid Profile

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### Dear Editor,

We read with great interest the article "Changes in Lipid Profile and Insulin Resistance in Obese Patients Following Laparoscopic morbidly Total Gastric Vertical Plication" of Atefeh Golpaie *et al.* (1). The authors developed a prospective study that included 15 morbidly obese patients who underwent Laparoscopic Gastric Total Vertical plication (LTGVP) with the technique described by Taleb-pour and Amoli in 2007 (2), and evaluated the evolution of lipid profile; total cholesterol (TC), triglycerides (TG), LDL-C and HDL-C, fasting glucose, insulin, and insulin resistance (HOMA insulin sensitivity and the quantitative check index (QUIKI), before and six weeks after surgery. They found a significant decrease in body weight and BMI, blood level of TG, LDL-C and HOMA at six weeks, but changes in TC, HDL-C, fasting glucose, insulin Levels and QUICKI were not significant.

The LTGVP is a new technique with scarce data, which just few patients with short-term follow-up have been investigated. However, initial results reported in terms of decrease in excess weight (EBW) are promising. In the study published by Taleb-pour *et al.*, EBW loss was 61% at

12 months in patients with a preoperative average body mass index (BMI) of 47 Kg/m<sup>2</sup> (2). Brethauer *et al.* reported an EBW loss of 53.4% in six patients with a mean BMI of 43.3 Kg/m<sup>2</sup> at 12 months follow-up (3). Ramos-Cardoso *et al.* published a series of 15 patients with a mean preoperative BMI of 41 Kg/m<sup>2</sup> with EBW loss of 60% at 12 months (4). These short-term results are comparable to those obtained after Sleeve Gastrectomy (SG) (5). The main advantages of this new technique are the low cost, since no mechanical sutures are used, and the possible low incidence of complications. However, after increasing reports, by employing this technique, some complications especially gastric outlet obstruction, vomiting, and gastric perforation, leaks, esophagitis and re-operation will probably be observed. Until now, no late complications have been reported, but follow-up is still limited.

Regarding resolution of co-morbidities, it has been widely shown that the significant drop in weight experienced by patients undergoing any bariatric surgery have an impact on the increased insulin sensitivity (6). With regard to dyslipidemia, there are no other reports to assess the evolution of this disease in LTGVP. The postoperative evolution after LTGVP is probably similar to the results

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observed after SG. Chowbey *et al.* (7) reported 62 patients with dyslipidemia and 80.6% remission was reported at six months and 85% per year (32/40 patients). Omana *et al.* reported 87% (13/15 patients) improvement after SG and 50% after LAGB, one year after surgery (8). Wong *et al.* (9) showed, a significant reduction of hypertriglyceridemia (33%), total cholesterol (6%) in 37 morbidly obese patients. LDL-Cholesterol decreased 6%, but was not significant and HDL-Cholesterol increased 11% during one year follow up. In our experience, among 116 patients with dyslipidemia who underwent SG, 47.6% remission achieved for total cholesterol (TC), 48.8% for LDL-cholesterol, 75.4% for Triglycerides while HDL-cholesterol increased among 21% of patients. These findings are very similar to the results published by Benaiges *et al.* (10), which reported a 75% remission of dyslipidemia in patients undergoing SG at 12 months, whereas analyzing the lipid profile separately, didn't show any significant changes in TC or LDL-C, but a significant decrease in TG and increase in HDL-C were seen. These findings are very important to decide which technique to be used in our obese patients with dyslipidemia, because patients with hypertriglyceridemia would benefit from a restrictive technique, but patients with hypercholesterolemia (TC and/or LDL-C), probably would benefit more with a technique involving malabsorption as the gastric bypass.

Another important point to discuss is the follow-up time in order to evaluate the lipid profile. We believe that six weeks is insufficient to measure the effects of surgery. The changes probably would be determined by diet restriction during the early postoperative months. In addition, it is still controversial whether the lipid profile changes are due to the surgery (SG or LTGV) or to the changes in eating habits (11-13).

### Authors' Contribution

None declared.

### Financial Disclosure

None declared.

### References

1. Golpaie A, Hosseinzadeh-Attar MJ, Hoseini M, Karbaschian Z, Talebpour M. Changes in Lipid Profile and Insulin Resistance in Morbidly Obese Patients Following Laparoscopic Total Gastric Vertical Plication. *J Minim Invasive Surg Sci.* 2012;**1**(1):24-9.
2. Talebpour M, Amoli BS. Laparoscopic total gastric vertical plication in morbid obesity. *J Laparoendosc Adv Surg Tech A.* 2007;**17**(6):793-8.
3. Brethauer SA, Harris JL, Kroh M, Schauer PR. Laparoscopic gastric plication for treatment of severe obesity. *Surg Obes Relat Dis.* 2011;**7**(1):15-22.
4. Ramos A, Galvao Neto M, Galvao M, Evangelista LF, Campos JM, Ferraz A. Laparoscopic greater curvature plication: initial results of an alternative restrictive bariatric procedure. *Obes Surg.* 2010;**20**(7):913-8.
5. Brethauer SA, Hammel JP, Schauer PR. Systematic review of sleeve gastrectomy as staging and primary bariatric procedure. *Surg Obes Relat Dis.* 2009;**5**(4):469-75.
6. Peterli R, Wolnerhanssen B, Peters T, Devaux N, Kern B, Christoffel-Courtin C, et al. Improvement in glucose metabolism after bariatric surgery: comparison of laparoscopic Roux-en-Y gastric bypass and laparoscopic sleeve gastrectomy: a prospective randomized trial. *Ann Surg.* 2009;**250**(2):234-41.
7. Chowbey PK, Dhawan K, Khullar R, Sharma A, Soni V, Baijal M, et al. Laparoscopic sleeve gastrectomy: an Indian experience-surgical technique and early results. *Obes Surg.* 2010;**20**(10):1340-7.
8. Omana JJ, Nguyen SQ, Herron D, Kini S. Comparison of comorbidity resolution and improvement between laparoscopic sleeve gastrectomy and laparoscopic adjustable gastric banding. *Surg Endosc.* 2010;**24**(10):2513-7.
9. Wong AT, Chan DC, Armstrong J, Watts GE. Effect of laparoscopic sleeve gastrectomy on elevated C-reactive protein and atherogenic dyslipidemia in morbidly obese patients. *Clin Biochem.* 2011;**44**(4):342-4.
10. Benaiges D, Goday A, Ramon JM, Hernandez E, Pera M, Cano JF. Laparoscopic sleeve gastrectomy and laparoscopic gastric bypass are equally effective for reduction of cardiovascular risk in severely obese patients at one year of follow-up. *Surg Obes Relat Dis.* 2011;**7**(5):575-80.
11. Jamal M, Wegner R, Heitshusen D, Liao J, Samuel I. Resolution of hyperlipidemia follows surgical weight loss in patients undergoing Roux-en-Y gastric bypass surgery: a 6-year analysis of data. *Surg Obes Relat Dis.* 2011;**7**(4):473-9.
12. Rossner S, Bjorvell H. Early and late effects of weight loss on lipoprotein metabolism in severe obesity. *Atherosclerosis.* 1987;**64**(2-3):125-30.
13. Wood PD, Stefanick ML, Dreon DM, Frey-Hewitt B, Garay SC, Williams PT, et al. Changes in plasma lipids and lipoproteins in overweight men during weight loss through dieting as compared with exercise. *N Engl J Med.* 1988;**319**(18):1173-9.