



Laparoscopic Total Gastric Vertical Plication and Metabolic Changes

Antonio Iannelli^{1,2}

¹ Department of Digestive Surgery and Liver Transplantation Center, Archet 2 Hospital, University Hospital of Nice, Nice, France

² Inserm U895, Team 8 "Hepatic Complications of Obesity", Nice, France

ARTICLE INFO

Article type:

Letter to Editor

Article history:

Received: 08 Mar 2012

Revised: 28 Mar 2012

Accepted: 15 May 2012

Keywords:

Obesity

Bariatric Surgery

Gastrectomy

Fundoplication

► *Please cite this paper as:*

Iannelli A. Laparoscopic Total Gastric Vertical Plication and Metabolic Changes. *J Minim Invasive Surg Sci.* 2013; 2(1): 120-1. DOI: 10.5812/jmiss.4786.

Dear Editor,

In recent years bariatric surgery has become very popular in concomitance with the recent epidemic of obesity and the large diffusion of the laparoscopic techniques. Besides, the gastric bypass that has been performed for more than 40 years and remains the gold standard of bariatric surgery while the other techniques, such as the gastric banding and more recently, the sleeve gastrectomy (SG) have been introduced to the technical armamentarium of the bariatric surgeon. The rationale behind the introduction of a new procedure should rely on the possibility of achieving the weight loss with the consequences of improvement in obesity-related comorbid conditions and quality of life while reducing the complexity of surgery and the inherent immediate and long-term complications (1). The SG has been rapidly accepted by the bariatric surgeons worldwide in consideration of the several advantages that it offers over the gastric bypass as it implies an easy surgical technique that does not

involve any digestive anastomosis, eliminates the risk of internal hernia, preserves the pylorus, renders the whole digestive tract accessible to endoscopy, eliminates the risk of dumping syndrome and peptic ulcer, and allows normal absorption of nutrients, vitamins, minerals, and drugs with respect to the gastric bypass. On the other hand, the SG carries a risk of leak at the oesogastric junction that varies in the hands of experienced surgeons (> 500 procedures) between 0.6 and 3.9 % (mean 1.06%) (2). The evolution of the staple line leak in the SG may last several months and be very difficult to manage. The laparoscopic total vertical plication (LTVP) of the stomach that Golpaie *et al.* describes in the article published in the recent issue of the Minimally Invasive Surgical Sciences is a further simplification of the SG that should theoretically reduce the risk of high leak that is the true Achill's heel of the SG (3). The rationale of the LTVP relies on the vertical plication of the stomach along the greater curvature to restrict the capacity of the stomach. Cost reduction associated with the use of the stapler to cut the stomach as

* Corresponding author: Antonio Iannelli, Department of Digestive Surgery and Liver Transplantation Center, Archet 2 Hospital, 151 Route St. Antoine de Ginestiere, BP 3079, Nice Cedex3, France. Tel: +33-492036476, E-mail: antonio_iannelli@hotmail.com

DOI:10.5812/jmiss.4786

Copyright © 2013, Minimally Invasive Surgery Research Center and Mediterranean & Middle Eastern Endoscopic Surgery Association. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

in the SG is a further advantage. Golpaie *et al.* reports the initial results of the LTVP on weight reduction and consequently, on insulin resistance and lipid profile in a selected series of patients at six weeks after surgery. This study is interesting not only because it deals with a new bariatric procedure but also because it reports data on the component of the metabolic syndrome that, in turn, is associated with an increased risk of mortality (4). The authors found that the LTVP is associated with a significant loss of weight and reduction of the waist circumference reflecting the visceral fat that is known to be the source of proinflammatory cytokines and adipokines implicated in the mechanisms, responsible for the occurrence of insulin resistance (5, 6). Indeed, the latter that is a main determinant of the metabolic syndrome was significantly reduced six weeks after LTVP. The authors also found a significant reduction of the hypertriglyceridemia, while no significant effect on the plasma levels of the HDL cholesterol was recorded. However, analysis of the components of metabolic syndrome is biased in this study by the fact that patients with type 2 diabetes and patients taking lipid-lowering drugs as well as patients with serious comorbidities were not included in the study.

As benefits of surgery must persist in the long term to validate a bariatric procedure, longer follow-up results of this study are awaited in the foreseeable future to confirm the efficacy of the TLVP on weight loss as well as on the components of the metabolic syndrome. While resection of the gastric fundus that is performed for the SG accounts for the very low plasma levels of ghrelin and the almost absent feeling of hunger that patients experience after a SG it is not clear what is the evolution of plasma levels of ghrelin after the LTVP. It would be interesting to explore the possibility of the pre-prandial plasma ghrelin reduction after LTVP in analogy with what happens after gastric bypass. Indeed, both procedures share the exclusion of the gastric fundus after coming in contact with

food.

The issue of postoperative complications in the form of high leak also deserves a particular attention because the plication in two parts of the stomach layer with a compromised vascular supply may not be as safe as it has been concluded from a short series of selected patients as the one, reported by Golpaie *et al.*

Authors' Contribution

None declared.

Financial Disclosure

None declared.

References

1. Iannelli A, Dainese R, Piche T, Facchiano E, Gugenheim J. Laparoscopic sleeve gastrectomy for morbid obesity. *World J Gastroenterol.* 2008;**14**(6):821-7.
2. Rosenthal RJ, Diaz AA, Arvidsson D, Baker RS, Basso N, Bellanger D, et al. International Sleeve Gastrectomy Expert Panel Consensus Statement: best practice guidelines based on experience of >12,000 cases. *Surg Obes Relat Dis.* 2012;**8**(1):8-19.
3. Golpaie A, Hosseinzadeh-Attar MJ, Hoseini M, Karbaschian Z, Talebpour M. Changes of Lipid Profile and Insulin Resistance in Morbidly Obese Patients After Laparoscopic Total Gastric Vertical Plication. *J Minim Invasive Surg Sci.* 2012;**1**(1):24-9.
4. Alberti KG, Eckel RH, Grundy SM, Zimmet PZ, Cleeman JI, Donato KA, et al. Harmonizing the metabolic syndrome: a joint interim statement of the International Diabetes Federation Task Force on Epidemiology and Prevention; National Heart, Lung, and Blood Institute; American Heart Association; World Heart Federation; International Atherosclerosis Society; and International Association for the Study of Obesity. *Circulation.* 2009;**120**(16):1640-5.
5. Anty R, Bekri S, Luciani N, Saint-Paul MC, Dahman M, Iannelli A, et al. The inflammatory C-reactive protein is increased in both liver and adipose tissue in severely obese patients independently from metabolic syndrome, Type 2 diabetes, and NASH. *Am J Gastroenterol.* 2006;**101**(8):1824-33.
6. Wajchenberg BL, Giannella-Neto D, da Silva ME, Santos RF. Depot-specific hormonal characteristics of subcutaneous and visceral adipose tissue and their relation to the metabolic syndrome. *Horm Metab Res.* 2002;**34**(11-12):616-21.