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Weight loss in patients undergoing gastric bypass versus vertical gastrectomy: long-term results.

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Abstract:

Both laparoscopic vertical gastrectomy (LVG) and laparoscopic gastric bypass (LGBP) have proven to be effective interventions for the treatment of obesity in the short and medium term. The objective of this study is to assess the long-term results (8 and 10 years) of each technique in terms of achieved weight loss and to compare them with each other. For this purpose, a database of 172 operated patients (92 LGBP and 80 LVG) at Donostia Hospital between 2011 and 2013 has been analyzed. The results obtained in terms of weight loss at 8 and 10 years after surgery are higher with the LGBP, with a surgical failure rate greater than 50% with both procedures.

Keywords:

- Gastric-bypass
- Vertical gastrectomy
- Long-term

Introduction and Objectives

The increase in the prevalence of obesity in developed countries has been a constant in recent years. In Spain, among those over 18 years old, the prevalence of overweight stands at 37.07% and obesity at 17.43% (according to data from the National Health Survey in Spain "MSCBS" 2017).

Obesity is a chronic disease that associates higher morbidity and mortality derived from comorbidities such as type II diabetes mellitus (DM-II), arterial hypertension (HTA), dyslipidemia, increased cardiovascular risk, obstructive sleep apnea syndrome (OSAS), etc. Weight loss is associated with an improvement or resolution of comorbidities and a reduction in mortality[1].

Several studies confirm that surgical treatment achieves greater weight loss and a higher rate of remission of comorbidities than diet and pharmacological treatment[2]. The two most widely used procedures are laparoscopic gastric bypass (LGBP) and laparoscopic vertical gastrectomy (LVG)[3]. In the short and medium term, both techniques have been shown to significantly reduce weight, with better results being obtained with LGBP as time passes, possibly due to the weight gain experienced by patients undergoing LVG[4,5]. So far there are few studies that assess long-term results from both surgical techniques.

The objective of this study is to compare the long-term results (8 and 10 years) of weight loss, in terms of percentage of BMI lost (PIMCP) and percentage of excess BMI lost (PEIMCP) between LGBP and LVG in our center.

Material and methods

This is a retrospective single-center study on a database of patients undergoing bariatric surgery in a period between January 2011 and December 2013 at the Donostia University Hospital. Weight and BMI data at 8 and 10 years have been collected from medical reports or, in case the reports were not available, by telephone.

All patients underwent a Multidisciplinary Committee, underwent laparoscopic GBP or VG, by the same team of three surgeons, following the same surgical technique.

According to current bariatric surgery success criteria, a PEIMCP> 65% has been considered an excellent result, a good result between 50-65% and failure if <50%[4].

For the statistical analysis, the IBM-SPSS version 21.0 program was used, and the variables were described by means and standard deviation, performing a Student's t test for independent samples.

Results and Discussion

The total number of patients who underwent bariatric surgery during 2011-2013 years is 172 patients (n = 172). Of these, 92 patients (53.4%) underwent LGBP and 80 (46.5%) underwent LVG. The demographic characteristics of the patients in relation to age, sex, baseline BMI, ASA risk, and comorbidities did not show significant differences between the two groups.

In the current study, data at 8 years after surgery (Table 1) were collected from 158 patients (n = 158), of whom 81 were LGBP (51.3%) and 77 LBG (48.7%); no data were obtained from 14 patients due to death or follow-up loss. The results obtained in terms of bariatric surgery success are: 36 patients (22.78%) present an excellent result, 30 patients (18.99%) good and 92 patients (58.23%) have a bariatric surgery failure.

Results	At 8 years LGBP (n=82) LVG (n=77)	At 10 years LGBP (n=20) LVG (n=20)
Excelent (PEIMCP > 65%)	36 (22,78%)	10 (25%)
Good (PEIMCP 50-65%)	30 (18,99%)	6 (15%)
Failure (PEIMCP < 50%)	92 (58,23%)	24 (60%)

Table 1. Results of bariatric surgery success according to excess of BMI loss (PEIMCP) at 8 and 10 years.

In the data collected at 10 years after surgery (Table 1), only patients operated in 2011 have been included, so the number of included patients is 40 (n = 40), 20 with LGBP (50%) and 20 with LVG (50%). In these, the results on surgery success are 10 patients (25%) with excellent results, 6 patients (15%) good results and 24 patients (60%) with bariatric surgery failure.

Statistical analysis comparing both surgical techniques at 10 years; with mean PEIMCP in LGBP of 48.04% and in LVG of 36.05%, it shows differences in favor of the LGBP but they are not significant, which could be explained by the small sample size.

However, at 8 years; The PEIMCP mean in LGBP is 54.7% and in GVL 35.95%, it is observed that there is a difference in favor of the LGBP which is statistically significant, presenting better results. (Figure 1).

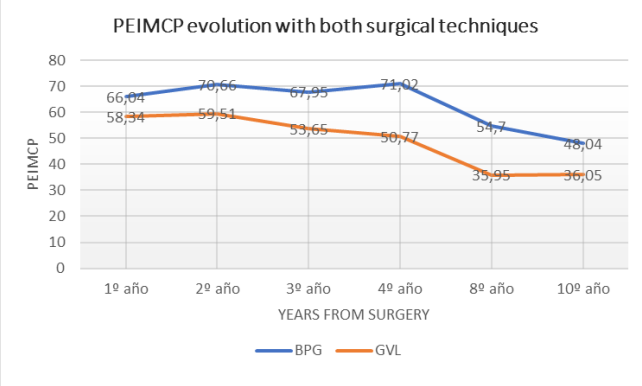

Figure 1. Evolution of the excess BMI lost percentage (PEIMCP) with both surgical techniques at 1 year, 2 years, 3 years, 4 years, 8 years, and 10 years after bariatric surgery with gastric bypass (LGBP) and with vertical gastrectomy (LVG).

Conclusions

In this study, it was observed that patients undergoing LGBP maintain a higher weight loss in long term compared to those undergoing LVG.

It should be noted that in both groups there is long-term weight regain with surgery failure rates greater than 50%.

The main limitations of this study are its retrospective nature and the fact that some some weight data at 8 and 10 years needed to be obtained by telephone.

In conclusion, long-term follow-up of these patients by a multidisciplinary team is strictly necessary, with the intention of maintaining the initial results of weight loss.

Conflicts of interest

None.

Bibliography

1. Marti-Gelonch L, Asensio-Gallego J.I, Larburu-Echániz S, et al. Gastrectomía vertical versus by-pass gástrico en Y de Roux: resultados a corto y medio plazo. Rev Chil Cir. 2019;71(1):29-34.

2. Sjöström L. Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery. J Intern Med. 2013;273:219.

3. Angrisani L, Santonicola A, Iovino P, Formisano G, Buchwald H, Scopinaro N. Bariatric Surgery Worldwide 2013. Obes Surg. 2015;25:1822-32.

4. Lauti M, Kularatnal M, Hill A.G, MacCormick A.D. Weight Regain Following Sleeve Gastrectomy- a Systematic Review. Obes Surg. 2016;26:1326-34.

5. Cooper TC, Simmons EB, Webb K, Burns JL, Kushner RF. Trends in Weight Regain Following Roux-en-Y Gastric Bypass (RYGB) Bariatric Surgery. Obes Surg. 2015;25:1474-81.

6. Helmiö M, Victorzon M, Ovaska J, Leivonen M, Juuti A, Jaser N, et al. SLEEVEPASS: A randomized prospective multicenter study comparing laparoscopic sleeve gastrectomy and gastric bypass in the treatment of morbid obesity: preliminary results. Surg Endosc. 2012;26:2521-6.