Obesity Surgery (2019) 29:304–305
https://doi.org/10.1007/s11695-018-3568-2

LETTER TO THE EDITOR

What Is the Current Evidence to Define the Length of the Alimentary Limb in the Laparoscopic Gastric Bypass Technique?

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Published online: 3 November 2018

Dear Editor,

We read the article by Dr. Jiadi Gan, et al. [1] with substantial interest. We want to congratulate the authors for trying to solve one of the central debates on the surgical technique of laparoscopic gastric bypass (LGBP) for the treatment of obesity. Although there are high-quality studies, to date, it has not been possible to obtain a solid conclusion regarding the optimal length of the alimentary limb [2].

If we analyze the contemporary scientific evidence, we can only count on four randomized trials to date.

The first study published on the length of the alimentary limb was in 1992, during the era of open gastric bypass [3]. It was a long-term randomized prospective study. Two groups were studied, one with alimentary limb length of 150 cm (n = 23) and another group with an alimentary limb of 75 cm (n = 22). The follow-up was 43 ± 17 months. Weight loss was significantly higher at 24 and 36 months of follow-up in the "long" alimentary limb group compared to the "short" alimentary limb group ($p = 0.02$), achieving a weight loss of at least 50% in 19 of 22 patients in the first group and 11 of 22 patients in the last group.

The second study was published in 2002 [4]. It was a prospective randomized trial comparing two groups of patients using open gastric bypass, the first group with an alimentary limb of 75 cm ($n = 35$) versus a group with an alimentary limb of 150 cm ($n = 34$), and the second group compared was with a 150-cm alimentary limb against patients with a 250-cm alimentary limb. No statistically significant difference was found between the groups studied concerning weight loss at 36 months of follow-up. Something to highlight this study is that patients with a body mass index higher than 50 kg/m^2 achieved greater weight loss when gastric bypass with a 250-cm-long alimentary limb was performed. This study was the first to give clues about the probable benefit of performing "longer limbs" in "more obese" patients.

Another study was published in 2005 [5]. The objective of this study was to compare the results of different lengths of alimentary limbs in patients with a body mass index of less than 50 kg/m2. It was a prospective randomized study. Two groups were studied, one with an alimentary limb of 50 cm and the other one of 100 cm. It was the first study to report the results using a laparoscopic approach. The follow-up was 24 months, no difference was found between the two techniques for weight loss. A higher incidence of internal hernias was observed in the group that had a "long" alimentary limb compared to the "short" alimentary limb (0 vs. 4, $p = 0.029$).

Finally, a study published in 2015 reported the perioperative outcomes between performing a "proximal" (measuring 150 cm in the antegrade direction from the gastrojejunal anastomosis, $n = 56$) or "distal" limb (measuring 150 cm backward from the ileocecal valve, $n = 57$) in the LGBP [6]. Both groups on average had a body mass index between 50 and 60 kg/m^2. The average surgical time was 72 min (36–151) in the group with the proximal bypass and 101 min (59–22) in the distal bypass group ($p \leq 0.001$). The mean length stay was 2 days in both groups. With this study, it was concluded that in super-obese patients (BMI 50–60 kg/m2), the "distal" gastric bypass is associated with longer surgical time and more serious complications (intestinal occlusion, bleeding, leakage, and formation of abdominal wall hernias). However, the results of long-term weight loss were not reported, and the risk-benefit ratio of performing a gastric bypass with a "long" alimentary limb could not be determined.

In addition to the previous studies, the recent meta-analysis that included 1714 patients of 8 studies, allows summarizing the following:

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1.- "Short" alimentary limbs limit the effectiveness of gastric bypass.
2.- "Long" alimentary limbs do not necessarily achieve better results in patients with BMI < 50 kg/m^2.
3.- Patients with BMI > 50 kg/m^2 could benefit more from alimentary limbs with lengths between 130 and 150 cm, and perhaps, there is no greater benefit with longer alimentary limbs.

At last, we would like to congratulate the authors of this publication once again because this will be a crucial piece to achieve standardization of the technique, which is being shaped every day and achieves better long-term results.

Compliance with Ethical Standards

Conflict of Interest The author declares that there is no conflict of interest.

Statement on Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent Not applicable.

Ethical Approval Not applicable.

Abbreviations *LGBP,* laparoscopic gastric bypass

References

1. Gan J, Wang Y, Zhou X. Whether a short or long alimentary limb influences weight loss in gastric bypass: a systematic review and meta-analysis. Obes Surg. 2018;28:3701–10.
2. Orci L, Chilcott M, Huber O. Short versus long Roux-limb length in Roux-en-Y gastric bypass surgery for the treatment of morbid and super obesity: a systematic review of the literature. Obes Surg. 2011;21(6):797–804.
3. Brolin RE, Kenler HA, Gorman JH, et al. Long-limb gastric bypass in the super obese. A prospective randomized study. Ann Surg. 1992;215(4):387–95.
4. Choban PS, Flancbaum L. The effect of Roux limb lengths on outcome after Roux-en-Y gastric bypass: a prospective, randomized clinical trial. Obes Surg. 2002;12(4):540–5.
5. Inabnet WB, Quinn T, Gagner M, et al. Laparoscopic Roux-en-Y gastric bypass in patients with BMI <50: a prospective randomized trial comparing short and long limb lengths. Obes Surg. 2005;15(1):51–7.
6. Svanevik M, Risstad H, Hofsø D, et al. Perioperative outcomes of proximal and distal gastric bypass in patients with BMI ranged 50-60 kg/m(2)–a double-blind, randomized controlled trial. Obes Surg. 2015;25(10):1788–95.