SMALL BOWEL LENGTH VARIABILITY IN HYPOABSORPTIVE PROCEDURES

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INTRODUCTION

Small bowel length has implications on the outcomes of hypoabsorptive bariatric procedures.

Studies have suggested that total alimentary limb length greater than 400 to 450 cm in gastric bypass patients is associated with a lower incidence of nutritional issues. However, the entire small bowel length is rarely measured in primary gastric bypass procedures.

We measured the small bowel length in consecutive patients undergoing gastric bypass in order to determine variability and correlation with other metrics.

METHODS AND PROCEDURES

Consecutive patients undergoing primary Roux-en-Y gastric bypass with long biliopancreatic limb had their entire small bowel length measured, prior to any small bowel division.

The total small bowel length (TSBL) was measured from the ligament of Treitz to the ileocecal valve using a bowel grasper marked at 10 cm from its tip, with the small bowel in moderate stretch.

Retrospective chart review was performed to record the gender, height, weight and body mass index (BMI) of patients at the time of the surgery. Variables were compared using unpaired t test with $p \leq 0.05$ indicating statistical difference. Correlation between variables was measured using Pearson correlation coefficient.

RESULTS

90 consecutive patients undergoing laparoscopic or robotic gastric bypass were identified. 12 patients were excluded because of incomplete small bowel measurement, either due to adhesions (5), or a decision to perform a standard gastric bypass (7).

78 patients in total were studied. 66% of patients were female and average age was 47.4 years. Mean BMI was 43.34 ± 5.87 (range 34.56 to 66.79).

The entire small bowel measured 624 ± 98 cm [range 450 to 860]. TSBL was ≤ 500 cm in 11.5%, ≤ 550 cm in 27%, and ≤ 600 cm in 51% of patients.

TSBL was longer in men (679.44 ± 90.26) than women (606.83 ± 94.12) and this was statistically significant ($p = 0.0049$). No male in this series had a small bowel shorter than 570 cm. In women on the other hand, TSBL was ≤ 550 cm in 35%, and ≤ 600 cm in 56%. Men were also statistically taller than women (1.80 m versus 1.64 m, p 0.0001).

Small bowel length did correlate positively with patient height, but the correlation was weak ($R = 0.3303$).

CONCLUSION

There is significant variability in small bowel length between patients.

Measuring the entire small bowel length is recommended in patients undergoing Roux-en-Y or single anastomosis gastric bypass if a biliopancreatic limb over 100 cm is being planned, specially in women.

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