

Roux-en-Y gastric bypass limb lengths—how to optimize the balance between weight loss and risk of malnutrition?

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Standard Roux-en-Y gastric bypass (RYGB) is still considered to be the standard surgical technique for the treatment of morbid obesity, although it is surpassed by sleeve gastrectomy (SG) in frequency worldwide. RYGB has been established as an effective surgical procedure for weight loss and remission of obesity-related co-morbidities¹. However, at long-term follow-up, there can be significant weight regain in some patients after any bariatric surgery procedure, including RYGB. The factors potentially affecting this major individual variability of the long-term weight loss outcomes after RYGB are still unclear. Subsequently, there are many studies aiming to determine the optimal length of the various intestinal limbs comprising the RYGB, including the biliopancreatic limb (BPL), Roux limb (RL), common channel (CC) and the total alimentary limb (TAL) composed of RL and CC, with all limb lengths having a close interaction. The aim would naturally be optimization of weight-loss outcomes while minimizing nutritional deficiencies, also enabling patient-tailored approaches based on, for example, baseline BMI.

One of the focuses in RYGB limb length studies has been the extended BPL length as the long BPL in biliopancreatic diversion (BPD) seems to be one of the key factors explaining the superiority of BPD for weight loss and remission of co-morbidities, but it also carries the potential for severe malnutrition². In this issue of BJS Open, Salte and colleagues³ show that in patients with BMI exceeding 50 kg/m², distal RYGB with a short CC of 150 cm did not enable greater weight loss than standard RYGB at 5-year follow-up with a good long-term follow-up rate of 81 per cent (92 of 113 patients). In this double-blind randomized clinical trial (RCT), the finding of increased side effects after distal RYGB with no weight-loss benefit underlines the conclusion of the authors of not recommending distal RYGB. The major complications after distal RYGB included one death from liver failure at 1 year and two patients needing revision for lengthening of the CC for malnutrition. As stated by the authors, this RCT is limited by the low number of patients and the lack of measurements for the TAL.

The mid-term results of the double-blind DUCATI RCT (Dutch Common Channel Trial)⁴ are contradictory, as Gadiot and

colleagues reported a considerable and significantly increased weight loss after a very long RL gastric bypass (BP 60 cm, RL variable, CC 100 cm) compared with standard RYGB (BP 60 cm, RL 150 cm and CC variable). In concurrence with the Norwegian RCT³, they also reported a higher risk of overall complications after distal RYGB compared with standard RYGB (15.8 versus 9.0 per cent, $P = 0.031$).

A recent systematic review of the role of TAL length (TALL) concluded that the majority of RYGB studies do not measure or report TALL, but there is some evidence that weight loss may be affected by shortening TALL, while TALL under 400 cm with CC under 200 cm should be avoided due to severe protein malnutrition⁵. In order to determine the optimal length of the various intestinal RYGB limbs for optimizing weight-loss outcomes and minimizing nutritional deficiencies, it is clear that more randomized double-blind RCTs with long-term follow-up are needed.

The optimal long-term outcomes of bariatric surgery cannot be assessed by just weight loss or any other single parameter. An optimal balance between the essential beneficial outcomes of weight loss and remission of major obesity-related co-morbidities, supplemented by acceptable complication rate without severe malnutrition and by improved overall quality of life would constitute an optimal composite endpoint for bariatric surgery.

Disclosure. The authors declare no conflicts of interest.

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