

Micronutrient Deficiencies After Roux-en-Y Gastric Bypass: Long-Term Results

Abstract

Background

Patients undergoing laparoscopic Roux-en-Y gastric bypass (LRYGB) are under risk of micronutrient deficiencies. We aimed to assess the preoperative and postoperative micronutrient deficiencies in a sample of patients with obesity who underwent LRYGB.

Methods

We evaluated 169 patients—satisfying the National Institute of Health criteria for bariatric surgery—who underwent a LRYGB from January 2014 to July 2017. Before surgery, we recorded a detailed medical history for every patient, and after surgery, we instructed them to return at 1, 6, 12, 24, 36, and 48 months after surgery.

Results

Preoperatively, anemia was present in 4.24% of patients, iron deficiency in 5.33%, vitamin B12 deficiency in 12.3%, and vitamin D deficiency in 74.35%. Postoperatively, the deficiency rates of calcium, magnesium, folate, and vitamins A, B1, and B6 were markedly low at 1, 2, and 3 years after surgery. In regard to anemia, iron, and vitamin B12, rates of deficiency were higher at 2 and 3 years postoperatively versus preoperatively, but only anemia (4% vs 14% and 4% vs 27%, at 2 and 3 years) and iron (5% vs 23% at 3 years) reached statistical significance. Compared with the preoperative assessment, the rates of vitamin D deficiency decreased over time (74% vs 50% at 1 year [$p < 0.001$], 74% vs 45% at 2 years [$p < 0.002$] and 74% vs 41% at 3 years [$p < 0.04$]).

Conclusions

Vitamin D deficiency remains the most common preoperative deficiency. Anemia and deficiencies of iron and vitamin B12 are common before and after surgery. Deficiencies of calcium, magnesium, folate, and vitamins A, B1, and B6 are markedly low in the postoperative period.

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