Nutritional impact of sleeve gastrectomy

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Background: Sleeve gastrectomy (SG) has become a predominant bariatric procedure. The long-term nutritional impact of this procedure is however unknown.

Objectives: To describe the nutritional deficiencies pre-operatively (pre-op) and after SG, and analyze the influence of pre-specified variables on nutritional status and weight loss pattern.

Methods: All patients who underwent a SG as a stand-alone procedure between 2008 and 2012 were included. Data were obtained from our prospective database and are reported as means ± standard deviation and percentages. Bivariate analyses were conducted to evaluate the influence of selected variables on outcomes.

Results: The mean age of the 537 patients was 48.0±11.3 years, with an initial BMI of 48.1±8.7. Excess weight loss was 56.2% at 1 year and 41.1% at five years ($p<0.0001$). The mean follow-up time was 34.3±17.2 months. Hypoalbuminemia was present in 1.1% preoperatively and 4.2% at five years ($p=0.0043$), low ferritin levels in 8.6% and 37.8% ($p<0.0001$), low vitamin B12 levels in 30.3% and 16.4% ($p<0.0001$), low vitamin D levels 63.2% and 24.3% ($p<0.0001$), and hyperparathyroidism in 23.4% and 20.8% ($p<0.0001$), respectively. There was no significant difference in the prevalence of anemia over time ($p=0.4301$). The prevalence of vitamin A insufficiency peaked from 7.9% pre-op to 28.7% at 3 months ($p<0.0001$). Baseline weight was positively correlated with albumin, ferritin, and parathyroid hormone levels, and negatively correlated with vitamin B12 and vitamin D.

Conclusion: Nutritional deficiencies are common in morbidly obese patients, before and after surgery. Pre-operative supplementation and long-term nutritional follow-up are required to prevent nutritional deficiencies.