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Nutritional Deficiencies following Sleeve Gastrectomy – can they be predicted pre-operatively?

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Background: Nutritional deficiencies are common among morbidly obese patients. Data are scarce for patients who have undergone laparoscopic sleeve gastrectomy (LSG).

Objectives: The aim of the study was to clarify the prevalence of deficiencies and to identify risk factors for postoperative deficiencies.

Settings: Hebrew University, Israel.

Methods: Preoperative and one year postoperative data were collected. We included anthropometric parameters, obesity related co-morbidities and laboratory findings.

Results: There were 192 candidates. 77 of them completed follow-up of 12 months. Prior to surgery 15% had anemia. Deficiencies of iron, folate and B_{12} were 47%, 32% and 13% respectively. Women were more deficient in iron (56% women, 26% men, $p < 0.001$). Before surgery, low levels of vitamin D and elevated PTH (parathyroid hormone) were 99% and 41%, respectively. One-year post surgery the deficiencies of hemoglobin and vitamin B_{12} worsened (20% and 17%, $p<0.001$, $p=0.048$, respectively). One year post surgery, deficiencies of iron, folate, vitamin D and PTH improved (28%, 21%, 94%, and 10%, respectively). Deficiencies of hemoglobin, folate and B_{12} prior to surgery were predictors for deficiencies one year after surgery ($p = 0.006$, OR = 0.090), ($p = 0.012$, OR = 0.069), ($p = 0.062$, OR= 0.165), respectively.

Conclusion: LSG had a modest effect on nutritional deficiencies in our patients at one-year post surgery. Focusing on the preoperative nutritional status and tailoring a specific supplemental program for each individual should prevent postoperative deficiencies.

Keywords:

Obesity, bariatric surgery, Laparoscopic sleeve gastrectomy (LSG), nutritional deficiencies, supplements