

Changes of bone metabolism markers in obese with laparoscopic sleeve gastrectomy individuals

Background

Bariatric surgery has proven to be a valuable treatment option for morbid obesity. Laparoscopic sleeve gastrectomy (LSG) has gained popularity as a bariatric procedure owing to its safety, low complication rate, and excellent weight loss results. As calcium requires the action of stomach acid to become solubilized, so by eliminating all HCl-secreting parietal cells and pepsin-secreting chief cells in sleeve gastrectomy, calcium becomes unable to be absorbed. A decrease in whole body bone mineral content was seen at first 2 years after SG. If bone loss continues even at slow rate, these patients may have an increased risk for fractures later in life.

Aim

The aim was to evaluate vitamin D, parathyroid hormone (PTH), and calcium serum after SG and its effect on modulation of postoperative nutritional monitoring and supplementation.

Patients and methods This prospective study was done on 50 morbidly obese patients (33 females and 17 males), with mean age of 31.8 ± 7.6 years and mean BMI of 41.5 ± 4.6 , who underwent LSG operation. Serum calcium, PTH, and vitamin D were measured before and 6 months after LSG.

Results

There was a statistically significant reduction in calcium level from baseline to postoperatively ($P<0.0001$), compared with statistically significant elevation in PTH and vitamin D from baseline to postoperatively ($P<0.0001$). There were negative correlations between vitamin D level and weight and BMI.

Conclusion

LGS is an effective surgery for the management of morbid obesity. An adequate supplementation is important to avoid micronutrient deficiencies, and greater weight loss does not require higher dosage of multivitamins.

Keywords:

BMI, gastrectomy, obesity, parathyroid hormone, vitamin D