

# Weight loss and co-morbidities evolution after bariatric surgery in former athletes versus ex-sedentary morbidly obese patients

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## Abstract

*Background.* Obesity has become a major public health problem. Morbid obesity (BMI  $\geq 40$  kg/m<sup>2</sup>), has been recognized as a contributing factor for health problems such as coronary heart disease, dyslipidemia, insulin resistance, hyperinsulinemia, type 2 diabetes, and sleep apnoea. Loss of excess weight leads to resolution or amelioration of co morbidities and to the improvement of life expectancy. Bariatric surgery is recognized as the only effective treatment for morbid obesity, given the high failure rate of non surgical means, such as exercise, diet, behavioural, and pharmaceutical management.

*Aims.* The aim of the study was to study weight loss and evolution of co-morbidities in two groups of morbidly among obese patients, consisting of former sportive and sedentary subjects, one year after silastic ring vertical gastroplasty. Evaluation of the differences between the two groups was made during the mentioned period of time.

*Methods.* Two groups one of 6 former sportive and the other consisting of 10 sedentary morbidly patients who were submitted to silastic ring vertical gastroplasty were chosen for our study. Indirect parameters such as weight, body mass index (BMI) and excess body loss (EBL), as well as direct parameters (glycaemia, total cholesterol, triglycerides, HDL and LDL cholesterol) were determined in each group before and 3,6 and 12 months after the surgical intervention.

*Results.* BMI decreased significantly from  $49.6 \pm 7.06$  kg/m<sup>2</sup> to  $31.61 \pm 2.93$  kg/m<sup>2</sup> ( $p < 0.05$ ) and EBL was  $70.69 \pm 16.69\%$  ( $p < 0.05$ ) by the end of the first year in the former sportive group. Glycaemic levels, total cholesterol and triglycerides values decreased insignificantly. In the sedentary group BMI values decreased from  $49.56 \pm 7.48$  kg/m<sup>2</sup> to  $30.74 \pm 3.81$  kg/m<sup>2</sup> ( $p = 0.005$ ), and EBL was  $77.52 \pm 10.45\%$  ( $p = 0.005$ ) by the end of the first year. Preoperative glycaemic levels decreased from  $119.10 \pm 10.97$  mg/dl to  $98.20 \pm 3.83$  mg/dl ( $p < 0,05$ ) and triglycerides values from  $242.8 \pm 150.25$  mg/dl to  $74.20 \pm 35.46$  mg/dl ( $p < 0,05$ ) by the end of the first year. There were no significant changes in total cholesterol, HDL~ and LDL-cholesterol. No differences were observed between the two groups regarding the evolution of direct and indirect parameters.

*Conclusions.* Our study showed a significant reduction of BMI by the end of the first year after silastic ring vertical gastroplasty. Also, we observed a high incidence of co-morbidities in morbidly obese. Cure or amelioration of associated diseases after surgical intervention was observed. There were no differences between the two groups of patients.

**Keywords:** morbid obesity, silastic ring vertical gastroplasty, weight loss, co-morbidities, sportsman, sedentary patients.