Abstract

Background: Obesity is a worldwide health problem that may also induce respiratory dysfunction. Literature linking weight loss and maximum respiratory pressures is inconclusive. Objective: To evaluate longitudinally the maximum inspiratory pressure (MIP) and maximum expiratory pressure (MEP) of morbidly obese individuals before and after gastric bypass surgery, and to compare them to a control group matched by sex and age. Methods: A vacuum manometer (GeRan®, SP, Brazil) was used to assess the MIP and MEP of 30 morbidly obese participants (24 women), aged 32±8 years and with body mass index (BMI) of 43±4 kg/m², both before and then one and six months after gastric bypass surgery. After an average of 36 months, 17 patients were reevaluated. A control group of 30 individuals with normal lung function (aged 30±8 with a BMI of 22±2 kg/m²) was also studied. An unpaired t-test and ANOVA for repeated measures were used for statistical analysis, with p<0.05 considered as significant. Results: No significant differences were observed in the baseline evaluation between the two groups. A significant increase was found in MIP after approximately 36 months of surgery in the obese group. A significant decrease in MEP was observed after one month, as well as a significant increase after 36 months compared with one and six months post-surgery. Conclusion: The data showed a significant long-term increase in MIP, as well as a significant decrease in MEP after one month followed by a return to pre-operative values, which indicates that gastric bypass surgery has a positive influence on the strength of inspiratory muscles.

Keywords

Maximum respiratory pressures, assessment, physical therapy, gastroplasty, post-operative, respiratory muscle strength.