Changes in bone mineral density, body composition and adiponectin levels in morbidly obese patients after bariatric surgery

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Background: Gastric bypass surgery (GBP) is increasingly used as a treatment option in morbid obesity. Little is known about the effects of this surgery on bone mineral density (BMD) and the underlying mechanisms. To evaluate changes on BMD after GBP and its relation with changes in body composition and serum adiponectin, a longitudinal study in morbid obese subjects was conducted. Methods: Forty-two women (BMI 45.0±4.3 kg/m2; 37.7±9.6 years) were studied before surgery and 6 and 12 months after GBP. Percentage of body fat (%BF), fat-free mass (FFM), and BMD were measured by dual-energy X-ray absorptiometry and serum adiponectin levels by RIA. Results: Twelve months after, GBP weight was decreased by 34.4±6.5% and excess weight loss was 68.2±12.8%. Significant reduction ($p<0.001$) in total BMD (-3.0±2.1%), spine BMD (-7.4±6.8%) and hip BMD (-10.5±5.6%) were observed. Adiponectin concentration increased from 11.4±0.7 mg/L before surgery to 15.7±0.7 and 19.8±1.0 at the sixth and twelfth m