

Effect of Resected Gastric Fundus Fat on Ghrelin Tissue Levels: A Prospective Study

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Abstract

Introduction: Obesity is currently an important health problem that is rapidly increasing worldwide. In recent years, the number of obesity-related surgeries has increased. The most common type of obesity-related surgery is laparoscopic sleeve gastrectomy (LSG). The aim of this study was to compare the genetic expression of the hormone ghrelin in different parts of the stomach.

Materials and Methods: Nineteen obese patients who underwent LSG were examined in this study. Fat tissue from two different parts of the stomach, the fundus and the upper part of the fundus, were analysed by enzyme-linked immunosorbent assay (ELISA). The ribonucleic acid (RNA) isolation, complementary DNA (cDNA) and real-time quantitative polymerase chain reaction (RQ-PCR) techniques were applied. Additionally, a human ghrelin ELISA kit was used to measure ghrelin in obese patients. The ghrelin levels of fat tissue from the fundus and upper part of the fundus were statistically compared.

Results: In all 19 patients, the average ghrelin level in the fundus was greater than 30. The average ghrelin level of the fat pad, which is located in the upper part of the fundus, was greater than 30 for 4 patients; the average level was approximately 5 in the remaining patients. A statistically significant difference in the ghrelin level was found between the fundus and the fundus fat tissue.

Conclusion: Collection of fundus fat tissue is not routinely performed during LSG. However, ghrelin hormone elevation in this tissue may require collection of fundus tissue during surgery.

Key words: laparoscopic sleeve gastrectomy, ghrelin level, gastric fat tissue, fundus