BARIATRIC SURGERY ALLEVIATES NON-ALCOHOLIC FATTY LIVER DISEASE: A STUDY CONDUCTED WITH TRANSIENT ELASTOGRAPHY

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Introduction

Non-alcoholic fatty liver disease (NAFLD) has become the most common liver disease in the last decades. It has an increasing prevalence because of the strong relation with morbid obesity.
Obesity surgery is a promising treatment for NAFLD in obese patients.

In this study, it was aimed to investigate the possible positive changes in liver tissue, following bariatric surgery performed on morbid obese patients, by using Transient Elastography (TE).
Additionally, it was aimed to examine if there is any alteration in TE measurements according to the selected surgical method in the treatment of morbid obesity.

Method

Patient selection: 302 patients who had bariatric surgery due to morbid obesity between Nov 1st, 2016 and Dec 31st, 2019 in Marmara University Medical School Training and Research Hospital were examined.
112 patients, with pre-op and post-op 12th month follow-up Fibroscan(F/S) examinations, were included in the study.
290 patients who died, had viral hepatitis or other metabolic disorder history, had no preoperative or postoperative TE measurement, were not able to obtain elastography measurement criteria, and who had revisional or other type of bariatric surgery from LSG and LRYGB were excluded from the study.

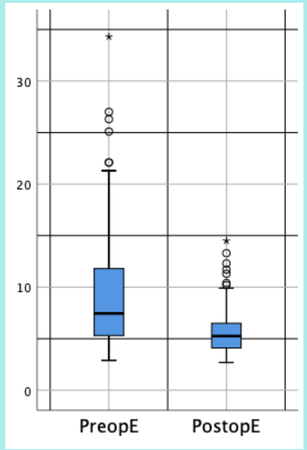
Groups: Patients were divided into two groups: Laparoscopic Sleeve Gastrectomy(LSG) (n=39) and Laparoscopic RnY Gastric Bypass (LRYGB) (n=73).

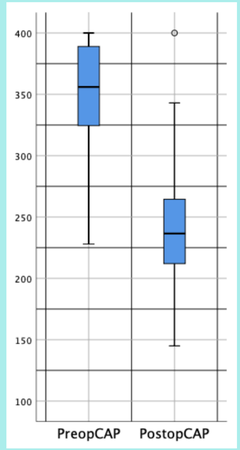
Measurements: Liver tissue was evaluated by F/S. Weight loss was measured by %EWL. F/S measurements; Liver Stiffness Measurement (LSM, E) for fibrosis and Continued Attenuation Parameter (CAP) for steatosis, were used as the primary measurement values. Also, the fibrosis and steatosis status of patients, according to the determined threshold values in literature, were used.

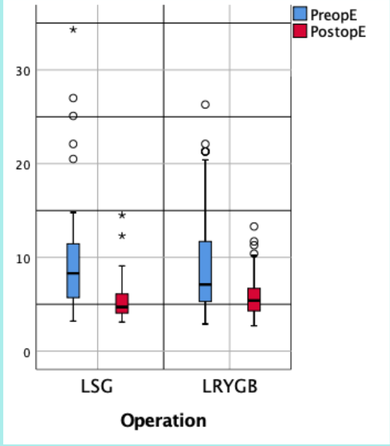
All data were collected prospectively, analysed retrospectively.

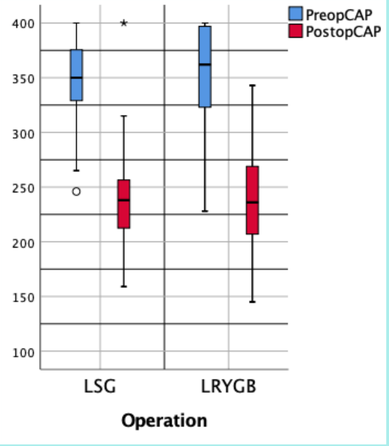
Results

Mean pre-op E value was significantly decreased from 9,5±6kPa to 5,7±2,2kPa at postop 12th month (p<0,001).
Mean pre-op CAP value was significantly decreased from 350±43dB/m to 240±42dB/m at postop 12th month (p<0,001).
LSG reduced the E value from 10,2±6,9kPa to 5,5±2,3kPa (p<0,001), the CAP value from 345±41dB/m to 237±43dB/m (p<0,001).
LRYGB reduced the E value from 9,2±5,5kPa to 5,8±2,2kPa (p<0,001), the CAP value from 352±45kPa to 242±42dB/m (p<0,001).
There was no significant difference between pre and post-op E and CAP values of two groups.
In stages of fibrosis and steatosis, a significant regression was observed in the post-op 12th month.
Both surgical techniques obtained similar amounts of improvement in liver steatosis and fibrosis.









Conclusion

Bariatric surgery improves fatty liver disease in morbidly obese patients.
Also, LSG and LRYGB are equally effective in improving NAFLD.
This improvement can be demonstrated reliably with the TE method.