EFFECT OF BARIATRIC SURGERY ON NON-ALCOHOLIC FATTY LIVER DISEASE IN MORBIDLY OBESE PATIENTS

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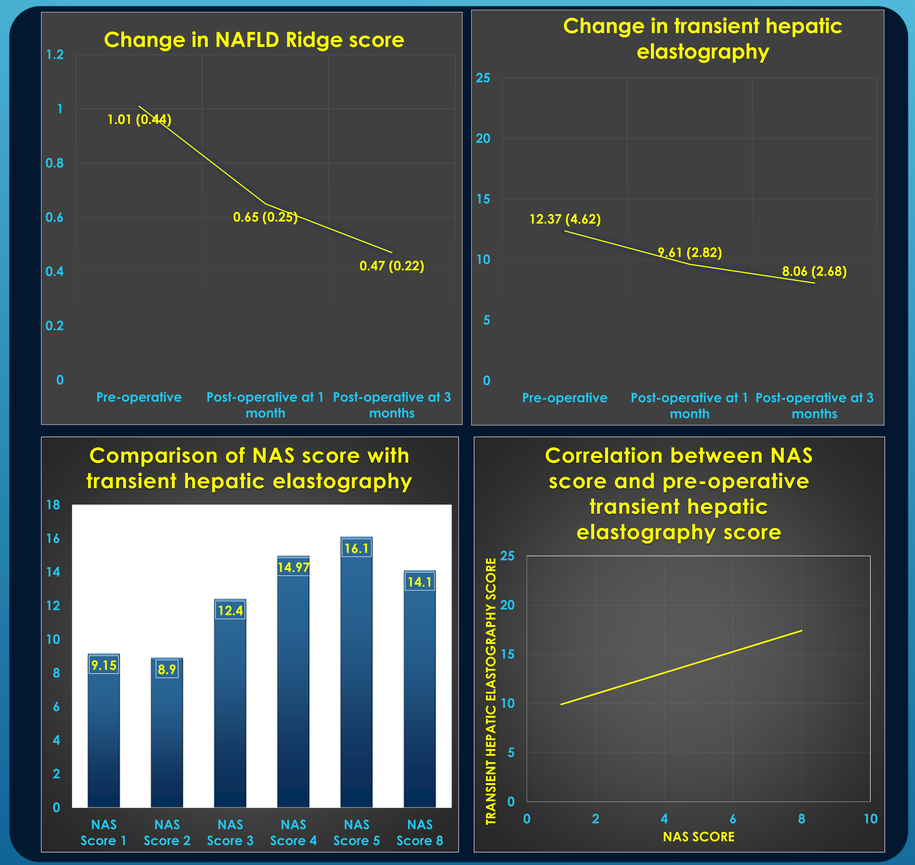
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Introduction

Out of the various co-morbidities associated with obesity, non-alcoholic fatty liver disease (NAFLD) is the most common cause of chronic liver disease with an estimated prevalence of 25 – 30 %. Bariatric surgery is the most effective modality of weight loss in morbidly obese patients and therefore should also theoretically improve the liver dysfunction associated with obesity. This study was designed to study the effect of bariatric surgery on NAFLD in obese patients.

Methods

This prospective study was planned on 20 patients being operated for morbid obesity in a tertiary care teaching hospital in New Delhi, India over a period of 1 year. A standard pre-operative workup including transient hepatic elastography (THE) and NAFLD ridge score calculation was done for all the participants. Patients underwent either laparoscopic sleeve gastrectomy or laparoscopic mini gastric bypass depending on the merits of each case. A core needle biopsy of the liver was performed intra-operatively in all the patients to correlate with preoperative THE values. The THE, liver function tests, lipid profile and NAFLD ridge score were repeated at 1 month and at 3 months after surgery.



Results

Out of a proposed sample of 20 patients, the study could include only 13 patients due to the repurposing of the hospital as an exclusive Covid-19 facility. Out of these 13, 10 patients had obstructive sleep apnoea, while 4 patients each had diabetes mellitus and hypothyroidism. The mean preoperative BMI, THE and NAFLD ridge score were 42.85±3.1, 12.37±3.03 and 1.01±0.44 respectively. Four patients had a NAS score of 3 on liver biopsy, while three patients had a NAS score of 4 ($p=0.666$ on comparison with preoperative THE). The mean BMI showed a statistically significant decrease to 35.25±2.75 at 3 months ($p<0.05$). Transient hepatic elastography ($p=0.001$), liver function tests ($p=0.001$), HbA1c ($p<0.01$) and lipid profile ($p=0.001$) also showed significant improvement at 3 months. NAFLD ridge score decreased significantly to 0.47± 0.22 over this period ($p=0.001$). All the patients had a resolution or improvement in their preoperative comorbidities.

Conclusion

This study shows that bariatric surgery not only results in a statistically significant improvement in BMI in morbidly obese patients, but in short term, also an improvement in pre-existing NAFLD as measured by THE, LFTs and NAFLD ridge score. More studies with a larger sample size and a longer follow up are needed to substantiate these results.