# LONG TERM WEIGHT LOSS AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY CORRELATES WITH THE VOLUME OF THE RESECTED SPECIMEN AND NOT WITH THE VOLUME OF THE GASTRIC SLEEVE


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## Introduction

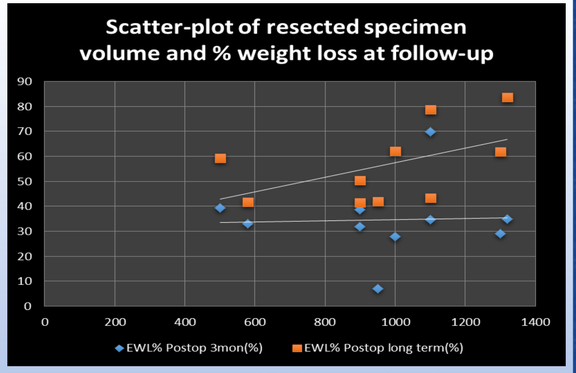
- LSG is a definitive and stand alone procedure for morbid obesity with excellent weight loss and resolution of comorbidities
- Its effectiveness in causing weight loss is largely determined by pre and postoperative stomach volume
- Our pilot study published previously (SurgEndosc2015;29(10):2921-7) showed that the early postoperative weight loss correlated with the volume of excised stomach and not with the volume of the gastric sleeve.
- The present study reports on the same cohort and aims to find out the long term correlation of weight loss after LSG with the gastric sleeve volume.

## Methods

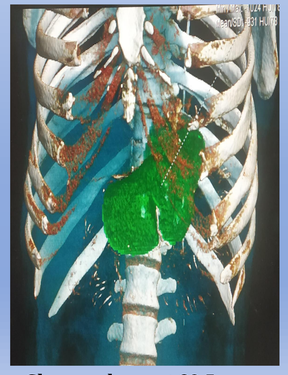
- Twenty patients with BMI ≥40 kg/m2 and medical comorbidities who underwent LSG between 2011 and 2013 at our institution were reanalyzed prospectively at a minimum follow up of 80 months post LSG.
- Out of an initial cohort of 20, 10 patients (50%) were lost to follow up over this period.
- An MDCT of upper abdomen was performed for the remaining 10 patients to calculate the volume of gastric sleeve using the same protocol as initially, at a follow up ranging from 80 – 102 months (average 89.5 months).
  - Gastric sleeve was distended with negative contrast using effervescent agent immediately before imaging.
  - Adequacy of sleeve distension was assessed on CT scout image
  - Thin slice volume rendered images were generated and sleeve volume was calculated.
- The overall weight loss and the sleeve volume were assessed at this time point and the results are presented.



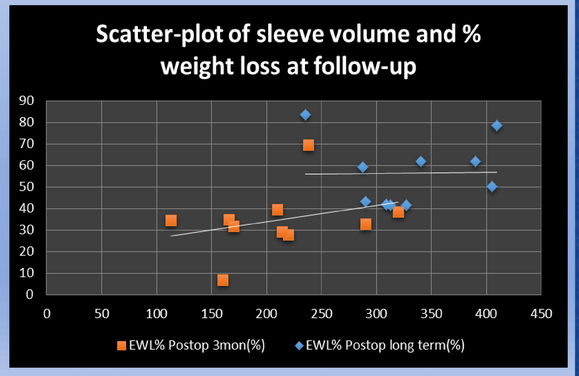
**Sleeve volume at 3 mon- 150.06ml**




**%EWL correlates with the resected specimen volume**



**Sleeve volume at 89.5 mon- 390.24ml**




**%EWL does not correlate with the gastric sleeve volume**

## Results

- The mean pre-operative weight, BMI and stomach volume of these patients were 134.20±25.32 kg, 47.62±5.70 kg/m2 and 1216.30±230.01 ml respectively.
- The mean volume of the resected specimen and the gastric sleeve were 965±268.54 ml and 251.30±186.03 ml respectively.
- The mean weight loss, % excess weight loss (%EWL) and the gastric sleeve volume at 3 months post LSG were 20.65±8.01 kg, 34.64±4.86% and 210.10±62.33 ml respectively.
- The mean weight loss, % excess weight loss (%EWL) and the gastric sleeve volume at long term follow up (average 89.5 months post LSG) were 34.21±12.44 kg, 56.46±4.90% and 330.90±56.42 ml respectively.
- Thus it was seen that though the volume of the gastric sleeve increased between 3 months and 89.5 months post LSG, this did not translate into a decrease in %EWL.
- At both the time points of observations, post-operative weight loss correlated with the volume of the excised specimen (r=0.451, p=0.190 @ 3 months; r=0.826, p<0.01 @ 89.5 months) and not with that of the gastric sleeve.

## Conclusion

The present study extrapolates the results of our pilot study to show that contrary to the popular belief, postoperative weight loss after LSG correlates well with the volume of the resected specimen and not with that of gastric sleeve, both in the short term (3 months) as well as in the long term (average 89.5 months).