

**3DCT conduit and oesophageal metrics, a valuable method to diagnose post sleeve gastrectomy angularis stenosis.**

**Background:**

Reflux post laparoscopic sleeve gastrectomy (LSG) is multifactorial. Identifying the aetiology of refractory reflux following key in establishing the management. Angularis stenosis is increasingly gaining attention as a potential cause. There are no objective measurements to diagnose it. Endoscopy is helpful but observation dependent. 3-Dimensional CT (3DCT) scans can be effective in delineating gastric anatomy and complications.

**Purpose:**

To establish measurements that constitute and is associated with clinical stenosis on 3DCT scan as an approach to standardise post gastric surgery anatomy assessment.

**Methods:**

Retrospective study patients undergone 3DCT following LSG. Clinical & demographic data including age, gender, BMI in kg/m<sup>2</sup> pre LSG and at 3DCT were extrapolated.

Symptomatology invoking scan and other investigations including endoscopy, Manometry, pH monitoring was also collected.

3DCT gastric measurements obtained including angularis angle (AA), surface area (ASA), proximal (PMSA), distal maximal surface area (DMSA) and length of gastric conduit.

Oesophageal diameter above the conduit was also recorded. R software used for statistical analysis. Patients grouped according to endoscopy findings and their 3DCT indications.

**Results:**

64 patients, (20% males), underwent LSG. Preop BMI and at 3DCT were 45.57 ( $\pm 8.3$ ), 36.3 ( $\pm 8.7$ ), surgery to scan period 6.2 ( $\pm 6.9$ ) years. 71.8% had symptoms of reflux and/or regurgitation/ dysphagia, the rest had weight regain alone as indication for 3DCT.

Gastric volume, (ASA) ( $10.1 \pm 4.2 \text{ cm}^2$ ), and (DMSA) ( $21.2 \pm 4.1 \text{ cm}^2$ ) were significantly less in those with endoscopic findings of stenosis/reflux ( $p=.002$ ) and ( $p=.007$ ) respectively. (AA) and (PMSA) of gastric conduit were lower in those with endoscopic findings of stenosis/reflux and in patients presenting with reflux/regurgitation/dysphagia respectively but lacked statistical association. The latter group however had lower BMI with on multivariate analysis. Furthermore, Oesophageal diameter and length of sleeve were higher in those with lower (AA) ( $p=.008$ ) and ( $p=.01$ ). Duration between LSG and 3DCT strongly correlated with higher BMI at 3DCT, longer conduit length and higher PMSA.

**Conclusion:**

Correlation exists between clinical stenosis and 3DCT measurements. 3DCT can help predict and guide further treatment of post LSG refractory reflux and regurgitation.