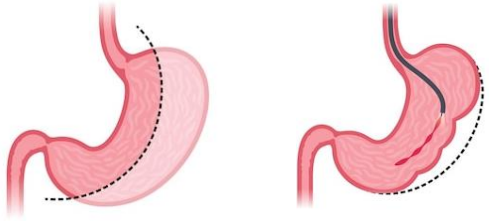
Dynamic Magnetic Resonance Imaging to evaluate Stomach Geometry Modifications following Endoscopic Sleeve Gastroplasty

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Introduction



Sleeve Gastrectomy (SG)

Endoscopic Sleeve Gastroplasty (ESG)

Tubulization of the stomach leading to **weight loss**

Unlike SG, ESG does not involve fundus removal, hence despite similarities among the two procedures, **gastroesophageal junction (GEJ) modifications differ among ESG and SG.**

Aim: **quantification of GEJ modification after ESG**

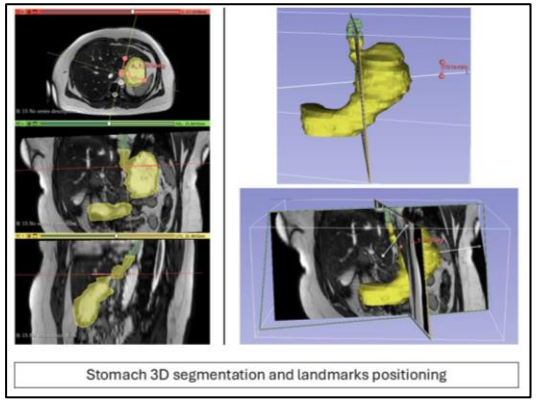
Methods



Dynamic Magnetic Resonance Images (Dy-MRI) before and 6 months after ESG

Dy-MRI: ingestion of 400ml of liquid with images taken every 20 minutes for 120 minutes

3D stomach segmentation was performed on pre- and postoperative Dy-MRI to **measure the His angle.** Landmarks were added across three planes for pre- and postoperative comparison.



Stomach 3D segmentation and landmarks positioning

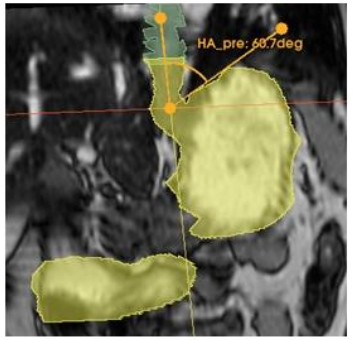
Results

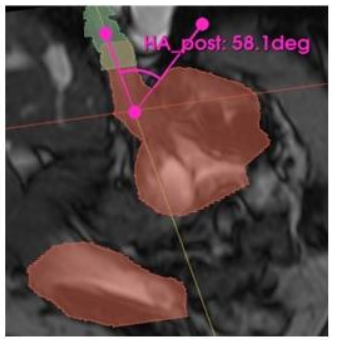
12/26 included patients completed all Dy-MRI series.

GERD incidence in included patients

	GERD yes (n, %)	GERD no (n,%)	GERD de novo (n, %)
Pre-ESG	4 (33.3%)	8 (66.6%)	NA
Post-EGS	3 (25%)	9 (75%)	0 (0%)

Significant (p-value=**0.01**) **difference** between mean **pre-procedure His angle** 62.3° (56.2°-84.4°) and mean **post-procedure degree** 57.4° (37.8°-76.1°)





Conclusions

The **decreased His angle** following ESG may serve as **protective factor against GERD development**.

Next steps:

- His angle calculation for all the included patients.
- Development of automatic segmentation algorithm and use of software as VTK to reduce measurements variability.

If you'd like to discuss more you can find me here: