

# Endoscopic submucosal dissection and submucosal tunneling endoscopic resection of gastric subepithelial tumors originating from the muscle layer. A multicenter retrospective study.

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## INTRODUCTION

### Background:

- SEL arising from the muscularis propria are treated either surgically or put under surveillance according to their size (<2cm vs >2cm)<sup>1,2,3</sup>
- Surgical treatment associated with gastroparesis, stomach deformity and technical challenges (fundus, cardia, posterior wall)
- ESD/STER for gastric SEL mainly applied in Northeast Asia, with very limited data from Europe/West.
- Main challenges: training in ESD/STER and wall defect closure<sup>4</sup>

### Surveillance Challenges:

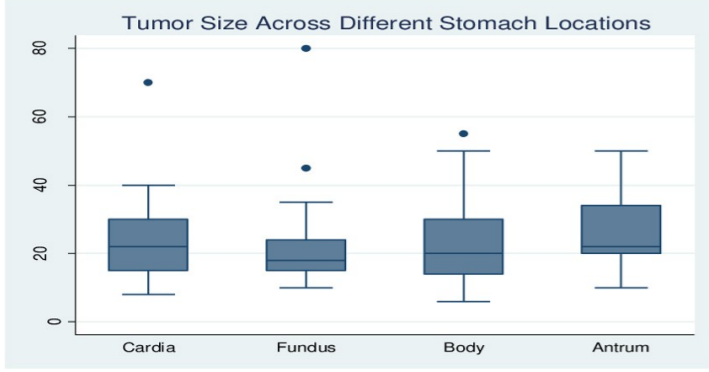
- Follow-up, adherence, increased cost from repeated examinations, delayed diagnosis, patient anxiety

## AIM

Feasibility, efficacy, and safety of ESD/STER for gastric SELs arising from the muscularis propria layer in European, Middle East, Southamerican, and Southasian centers (non-Northeastasian countries)

## METHOD

- **Study Design:**
  - Multicenter (n=18) retrospective study.
  - ESD/STER for gastric SELs arising from the muscularis propria layer
  - Period: 02/2017 to 09/2024, 82 patients
- **Study Outcomes:**
  - **Primary outcomes:** En bloc resection rate, endoscopic-related adverse events (AEs) and recurrence rate.
  - **Secondary outcomes:** Procedure time, need for surgical intervention, adjuvant therapy and hospital stay duration.



## RESULTS

A total of 82 lesions were included. 41.5% of case were performed in non academic hospitals. The median patient age was 58.5 (20 -81) and women were 62.2%. The median lesion size was 2.0 cm (0.6 – 8). From the 82 lesions, 33 (40.2%) were in the body, 15 (18.3%) in the fundus and cardia respectively and 19 (23.2%) in the antrum. Histologically, 64 lesions were categorised as GISTs, 16 as leiomyomas and 2 as schwannomas. 16 (19.5%) of the lesion had extraluminal extension and 6 (7.3%) were breaching the serosa. ESD was performed in 54 cases (65.9%) and STER in 28 (34.1%). The median procedure time was 120 minutes (24 – 305). Deliberate perforation of the serosa was performed in 26 cases (31.7%), of which 24 could be managed endoscopically (Fig 1). En-bloc resection was achieved in 79 cases (96.3%). Wall defect closure was performed in 74 cases (90.2%). The techniques used were haemostatic clips only (51.4%), haemostatic clips and loops (35.1%), suturing (9.5%) and OTSC (4.1%). The complication rate was low (7.3%) and only documented in the ESD group. Overall were 6 complication (AGREE classification II-IV). 2 cases had to be treated surgically due to difficulties to close the defect (1 case was operated immediately and 1 case due to secondary peritonitis). Only 2 recurrences were noted in the ESD group after a medial follow up of 12 months.

## CONCLUSIONS

- ESD/STER for gastric SELs arising from the muscularis propria layer is feasible and even for lesions invading the serosa.
- Deliberate perforation was necessary in 1/3 of cases and was managed endoscopically in most cases with surgical backup needed in only 2 cases.
- 41.5% of the procedures were performed in non academic hospitals
- No mortality

**Table 1. Clinical and demographic characteristics of 82 patients undergoing endoscopic resection of gastric subepithelial lesions across 18 centers.**

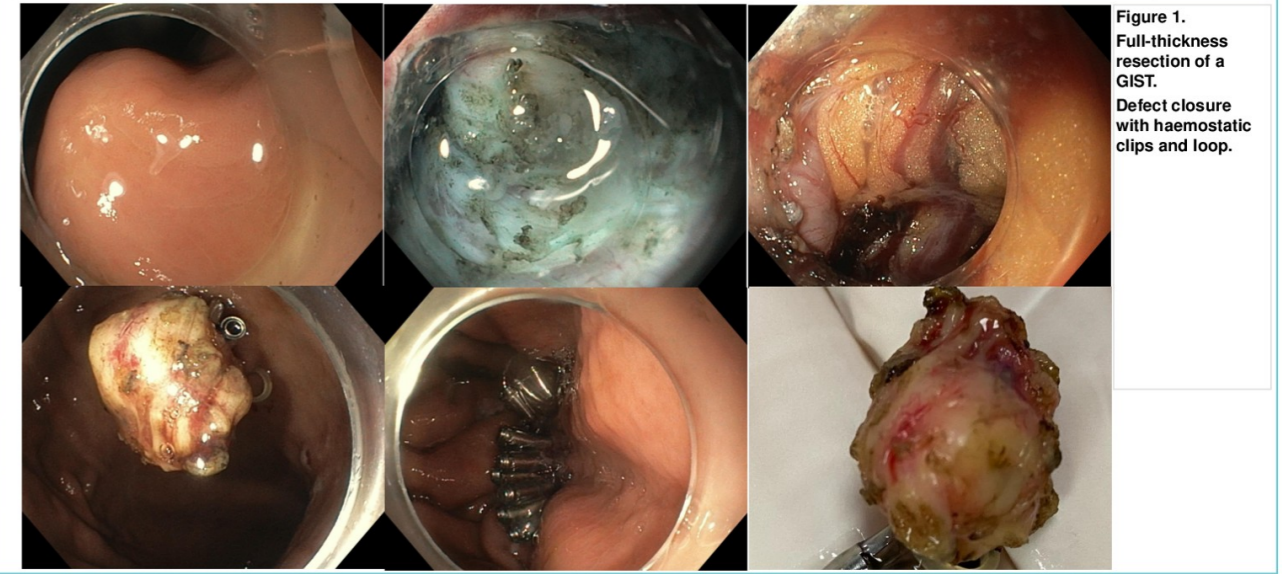
Variable	N (% , range)
Type of center, NON-University hospitals	34 (41.5%)
Age (years), median	58.5 (20-81)
Gender, male	31 (37.8%)
Location	
Cardia	15 (18.3%)
Fundus	15 (18.3%)
Body	33 (40.2%)
Antrum	19 (23.2%)
Size (mm), median	20.0 (6-80)
Extraluminal and/or beyond the serosa growth	22 (26.8%)
Muscularis propria in EUS	57 (69.5%)
Indication	
GIST in Histology	31 (37.8%)
Uncertain Diagnosis / MP Origin	21 (25.6%)
Obstruction or bleeding	3 (3.7%)
Patient Preference	11 (13.4%)
Combination of the above	16 (19.5%)
Histology	
GIST	64 (78.0%)
Leiomyoma	16 (19.5%)
Schwannoma	2 (2.5%)

**Table 2. Procedure-related details by endoscopic technique (ESD vs. STER).**

Variable, n (%)	ESD N=54	STER N=28	p-value
Size (mm), mean(SD)	26.7 (15.1)	19.0 (7.2)	<0.005
Dissection of the serosa	17 (31.5%)	9 (32.1%)	0.951
Procedure location			0.378
Endoscopy room	38 (70.4%)	17 (60.7%)	
Surgical theatre	16 (29.6%)	11 (39.3%)	
Closure technique			
No need	2 (3.7%)	6 (21.4%)	
Haemostatic Clips (HC)	20 (37.0%)	18 (64.3%)	
HC/Loop	22 (40.7%)	4 (14.3%)	
OTSC	3 (5.5%)	0	
Suturing	6 (11.1%)	0	
Combination	1 (2.0%)	0	
HC: haemostatic clip, OTSC: over-the-scope endoscopic clips			

**Table 3. Primary and secondary outcomes by endoscopic technique (ESD vs. STER).**

Variable, n (%)	ESD N=54	STER N=28	p-value
En bloc resection	53 (98.2%)	26 (92.9%)	0.226
Adverse events (AGREE classification)			
No	41 (76.0%)	24 (85.7%)	
Grade I	7 (13.0%)	4 (14.3%)	
Grade II	3 (5.5%)	0	
Grade III	2 (3.7%)	0	
Grade IV	1 (1.8%)	0	
Duration of the procedure (minutes), mean (SD)	126.3 (53.2)	105.3 (36.9)	0.066
Hospital stay (days), mean (SD)	3.7 (0.4)	2.3 (0.2)	0.019
Adjuvant treatment			
Chemotherapy/ immunotherapy	2 (3.8%)	1 (3.7%)	
Surgery	2 (3.8%)	0	
No	49 (92.4%)	26 (96.3%)	
Follow-up (months), mean (SD)	12.2 (1.6)	12.7 (2.8)	0.873
Recurrence	2 (3.7%)	0	



**Figure 1.** Full-thickness resection of a GIST. Defect closure with haemostatic clips and loop.

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### CONTACT INFORMATION FOR PARTICIPATION IN OUR STUDIES ON 3<sup>RD</sup> SPACE ENDOSCOPY

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