

## Letter to Editor

## Endoscopic Assisted Enucleation of Small Gastric Subepithelial Lesions: An Early Single Center Experience

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Dear editor,

Gastric subepithelial tumors (SETs) are not uncommonly discovered on routine endoscopy. While the majority of gastric SETs are benign, some have malignant potential. Although observation is generally recommended for SET smaller than 2 cm with no concerning features, the lack of diagnosis may precipitate significant anxiety to many patients (1). Small SETs are often associated with a diagnostic challenge, due to low yield of conventional biopsy techniques, including EUS guided biopsies, and require follow-up to ensure no interval growth suggestive of malignant potential. Retraction, Ligation, Unroofing, Biopsy (RLUB), and Suction, Ligation, Unroofing, Biopsy (SLUB) are two recently described techniques by Binmoeller et al. which were found to be highly effective to facilitate tissue diagnosis and lesion removal (2, 3). These procedures were done at a single center, and the generalizability of the results to other centers is unknown.

Here, we aimed to report our early experience of the technical success, diagnostic yield and complications using these endoscopic enucleation techniques for gastric SET. We

retrospectively reviewed our prospectively collected data for patients who underwent endoscopic assisted enucleation of small gastric SETs at our center. All patients had discussion about management options for gastric SET and provided informed consents. All patients underwent endoscopic ultrasound examination for lesion characterization using a linear echoendoscope (Olympus Medical). For the RLUB technique, a double-channel endoscope (Olympus Medical) was used. Retraction was performed using a 3-pronged anchoring device (OTSC Anchor, Ovesco) followed by a 30 mm endoloop (Olympus Medical) placement. For the SLUB technique, a therapeutic gastroscope (Olympus Medical) with an 18 mm transparent attachment cap was used. A 20 mm Endoloop (Olympus Medical) was preloaded into the cap. After suctioning the lesion into the cap, the endoloop was deployed. For both procedures, unroofing was performed using a needle knife and a polypectomy snare after ligating the SET, followed by obtaining biopsies from the exposed SET. All procedures were performed in an outpatient setting under conscious sedation. Follow-up gastroscopy was not routinely done for lesions with no malignant potential.

**Table 1.** Characteristics of gastric subepithelial lesions and findings of procedures.

Case #	Age	Size, cm	Layer	EUS Biopsy	Success	Diagnosis	Follow up Endoscopy
1	67	3	3 <sup>rd</sup>	Non diagnostic	Yes	Lipoma	No visible lesion
2	82	2	4 <sup>th</sup>	Not done	Yes	GIST	No visible lesion
3	66	3	4 <sup>th</sup>	Not done	No	NA	NA
4	19	1	3 <sup>rd</sup>	Not done	Yes	Heterotopic pancreas	NA
5	58	3	2 <sup>nd</sup>	Non diagnostic	Yes	Non specific (Benign cystic/ solid lesion)	Endoloop in situ
6	61	1.7	4 <sup>th</sup>	Not done	Yes	Neuroma	NA
7	66	1.1	2 <sup>nd</sup>	Not done	Yes	Inflammatory fibroid	No visible lesion
8	65	0.8	4 <sup>th</sup>	Not done	Yes	GIST	No visible lesion
9	82	1	3 <sup>rd</sup>	Not done	Yes	Inflammatory polyp	NA

NA, not available

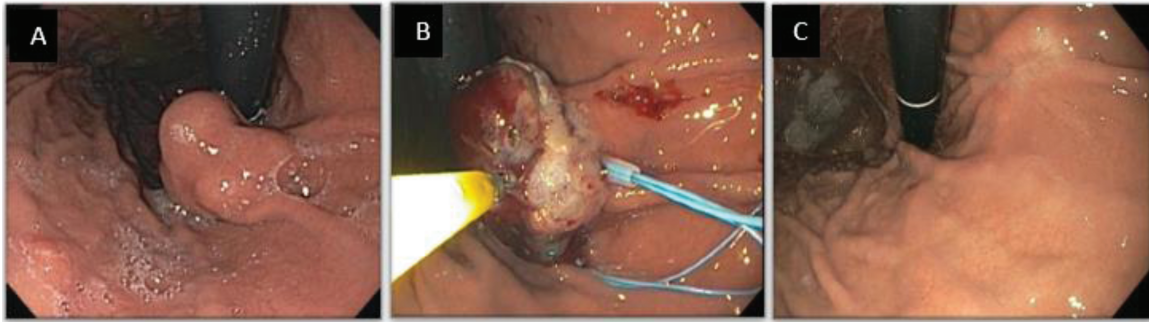


Figure 1. A 2-cm gastric SET is identified in the upper stomach, A. EUS (not shown) revealed the lesion arising from the fourth layer, muscularis propria. Lesion after retraction, ligation and unroofing, B. Biopsies revealed GIST tumor. Follow-up EGD after eight weeks revealed no visible lesion, C. Given the malignant potential, an EUS was also performed (not shown) and no residual SET was identified.

A total of nine patients underwent endoscopic-assisted enucleation between October 2015 and September 2017. Table 1 shows characterization of gastric SET and results of the procedures. The mean age was 62.8 years, and 66.6% were female. Gastric SETs were incidentally discovered on gastroscopy in seven patients, and on CT scan in one patient. One patient presented with anemia and was found to have an ulcerated SET. The endoscopic procedure was successful in eight (88.8%) out of nine patients. The patient with the unsuccessful procedure had a 3 cm SET and was referred for surgery. For the five patients who had follow-up gastroscopy or endoscopic ultrasound or both, after a median interval of two months, four had no visible lesion and one had the endoloop still in place. No complications were encountered. Figure 1 shows an illustration for one of the cases.

In conclusion, the results showed that endoscopic-assisted enucleation of gastric SETs is technically feasible and safe in concordance with the previously published studies. Endoscopic enucleation might be a good option for anxious patients who

want a specific diagnosis to be made or patients who want to avoid the need for future surveillance.

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## References

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