Gaining Traction: A Novel Through-the-Scope Steerable Grasping Arm versus Clip Line Traction for Gastric and Rectosigmoid ESD

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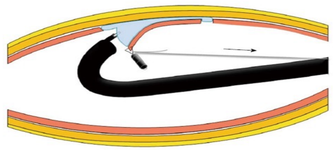
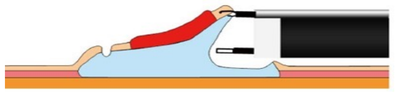
INTRODUCTION

- Clip line traction is an established method for ESD where string is attached to a clip applied at the proximal edge of the lesion and tension is applied to create counter-traction.
- A novel through-the-scope steerable grasping arm device (SGA) (TracMotion™ FujiFilm) became available which allows for better visualization, tissue manipulation, and retraction due to its independently moveable and rotatable jaws.



Clip-line traction[1]



SGA traction[1]

STUDY AIM

Here we compare the dissection speed, achievement of R0 resection, and complication rate of two traction methods for ESD of gastric and rectosigmoid lesions.

METHODS

- This was a retrospective medical record review of consecutive patients who underwent ESD by a single endoscopist at a tertiary care center between 3/2019 and 11/2021.
- Inclusion criteria were gastric and rectosigmoid lesions removed en bloc by ESD where either SGA or clip line was utilized for traction.
- The primary outcomes measured were dissection speed, R0 resection rate, and rate of complications.

RESULTS

Table 1: SGA vs Clip Line ESD for Gastric Lesions

	SGA	CLIP LINE
Number of Cases	2	4
Avg Dissection Speed (mm^2/min)	5.36	12.04
Avg Specimen Size (mm^2)	604	671
R0 Resection Rate	100%	75%
Complications Requiring Endoscopic Repair	0	1

Table 2: SGA vs Clip Line ESD for Rectosigmoid Lesions

	SGA	CLIP LINE
Number of Cases	4	4
Avg Dissection Speed (mm^2/min)	18.64	12.39
Avg Specimen Size (mm^2)	1911	2680
R0 Resection Rate	75%	75%
Complications Requiring Endoscopic Repair	0	0

- For gastric lesions, average dissection speed was faster using clip line (12.04 mm^2/min) compared with SGA (5.36 mm^2/min).
- For rectosigmoid lesions, SGA (18.64 mm2/min) outperformed clip line traction (12.39 mm2/min).
- R0 resection rate was higher overall for SGA cases compared to clip line (83% vs 75%, respectively).
- There were no complications for any SGA cases, but there was one episode of delayed bleeding following dissection of a gastric lesion with clip line traction which required endoscopic intervention.

CONCLUSIONS

- SGA outperformed clip line traction for removal of rectosigmoid lesions, but not gastric lesions.
  - We hypothesize that this may be due to use of an older two channel endoscope with limited retroflexion making gastric ESD more difficult.
  - The learning curve associated with the increased working distance created by the SGA device which extends out of the scope may have also contributed to a delay in dissection speeds with SGA traction.
- ESD conducted with SGA yielded higher rates of R0 resection for both gastric and rectosigmoid lesions without any complications suggesting increased efficacy and safety of this new device.

REFERENCES

1. Imaeda H, Hosoe N, Kashiwagi K, et al. Advanced endoscopic submucosal dissection with traction. *World J Gastrointest Endosc*. 2014;6(7):286-295. doi:10.4253/wjge.v6.i7.286