

# Published Clinical Study Abstracts



## Applications of TRACMOTION for ESD



Published in *Journal of DEN Open*. 2023;3:e174.

Dennis Yang, Hiroyuki Aihara, Muhammad K. Hasan, Cem Simsek, Hafiz Khan, Tony S. Brar, Venkata S. Gorrepati, Justin J. Forde, Kambiz Kadkhodayan, Mustaa A. Arain, and Peter V. Draganov

## Novel single-operator through-the-scope traction device for endoscopic submucosal dissection: Outcomes of a multicenter randomized pilot ex-vivo study in trainees with limited endoscopic submucosal dissection experience

**Aim and method:** The aim of this ex-vivo study is to prospectively evaluate the efficacy and safety of a novel single-operator through-the-scope dynamic traction device among trainees with limited ESD experience. The randomized, controlled, pilot study compares traction-assisted ESD (T-ESD) versus conventional ESD (C-ESD) in an ex-vivo porcine stomach model. Trainees were randomized to group 1 (T-ESD followed by C-ESD) and group 2 (C-ESD followed by T-ESD).

**Results:** Five trainees performed two T-ESD and two C-ESD each, for a total of 20 procedures. Submucosal dissection speed was significantly faster in the T-ESD group compared to the C-ESD group ( $43.32 \pm 22.61$  vs.  $24.19 \pm 15.86$  mm<sup>2</sup>/min;  $p = 0.042$ ). National Aeronautical and Space Administration Task Load Index (NASA-TLX) physical demand was lower with T-ESD compared to C-ESD ( $4.5 \pm 2.17$  vs.  $6.9 \pm 2.50$ ;  $p = 0.03$ ).

	T-ESD	C-ESD	p-value
Submucosal dissection area (mm <sup>2</sup> )	110.02 ± 54.48	66.89 ± 34.53	0.048
Submucosal dissection time (min)	26.56 ± 10.68	31.26 ± 11.88	0.36
Submucosal dissection speed (mm <sup>2</sup> /min)	43.32 ± 22.61	24.19 ± 15.86	0.042
En-bloc resection	6/6 (100)	7/7 (100)	1.00
Muscle injury	1/10 (10)	5/10 (50)	0.14
Specimen injury	0	3 (30)	0.21
Perforation	0	1 (10)	1.00

	T-ESD	C-ESD	p-value
Cumulative score	36.45 ± 11.13	36.2 ± 16.11	0.92
Mental demand	6.65 ± 2.52	6.4 ± 2.95	0.83
Physical demand	4.5 ± 2.17	6.9 ± 2.50	0.03
Temporal demand	6.6 ± 2.40	5.45 ± 3.01	0.36
Performance	5.25 ± 3.10	5.15 ± 3.79	0.95
Effort	7.4 ± 1.41	6.9 ± 2.44	0.58
Frustration	6.05 ± 2.75	5.45 ± 3.33	0.67

**Conclusions:** T-ESD resulted in faster submucosal dissection and less physical demand when compared to C-ESD, as performed by trainees in an ex-vivo.

To read the abstract, visit : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9549878/>

Published in *iGIE* Volume 1, Issue 1, Dec. 2022, P3-10

Abhishek Agnihotri, MBBS , Divya Chalikonda, MD, Daniel Scanlon, BA, Brianna Shinn, MD, Ritu Nahar, MD, Christopher Cao, MD, Scott Manski, MD, Alice S. Pang, MD, Christopher J. Schmoyer, MD, Alexander G. Pop, MD, William P. Haberstroh, MD, Inki Hong, MD, David E. Loren, MD, Thomas Kowalski, MD, Anand R. Kumar, MD, MPH, Austin L. Chiang, MD, MPH, Alexander Schlachterman, MD

## Novel through-the-scope steerable grasper for dynamic traction reduces dissection time and technical demand in endoscopic submucosal dissection in novice endoscopists compared with clip-and-line traction method: an ex vivo randomized study

**Aim and method:** Investigators aimed to study the efficacy of a novel through-the-scope steerable grasper arm (SGA) for dynamic traction compared with the clip-and-line (CL) traction method ex vivo. In a porcine stomach model, two 25mm circular lesions were marked. Each participant was randomized to either SGA first (study group) or CL first (control group).

**Results:** Ten subjects participated in the study, and 5 were randomized to the SGA method first. The mean dissection time was significantly shorter with SGA compared with CL ( $5.07 \pm 2.19$  minutes vs  $20.07 \pm 8.45$  minutes,  $P < .001$ ) irrespective of order of randomization. Four instances of muscle injury and 1 perforation were noted with CL and none with SGA. Mean total NASA-TLX score was significantly lower with SGA ( $36.1 \pm 11.6$ ) versus CL ( $81.5 \pm 20.8$ ) ( $P < .001$ ).

Randomization	No. of participants	Dissection time using the SGA (min)	Dissection time using the CL (min)	P value
Total	10	$5.07 \pm 2.19$	$20.07 \pm 8.45$	<.001
SGA first	5	$5.32 \pm 2.21$	$22.6 \pm 11.42$	0.017
CL first	5	$4.82 \pm 2.41$	$17.5 \pm 3.70$	0.002

	SGA method	CL method	p-value
Total score	$36.1 \pm 11.6$	$81.5 \pm 20.8$	<.001
Mental demand	$7.9 \pm 3.1$	$15 \pm 4$	<.001
Physical demand	$6.4 \pm 2.5$	$12.9 \pm 5.6$	0.009
Temporal demand	$5.6 \pm 3.3$	$13.8 \pm 4.3$	<.001
Performance	$3.9 \pm 3.2$	$9.2 \pm 5.0$	0.02
Effort	$8.4 \pm 3.5$	$16.3 \pm 2.8$	<.001
Frustration	$3.9 \pm 2.3$	$14.3 \pm 5.1$	<.001

**Conclusions:** SGA traction method leads to faster dissection time compared with the CL method with a reduced technical workload in an ex vivo setting. The SGA is a promising tool to improve efficiency and the learning curve of performing ESD.

To read the abstract, visit : [https://www.igiejournal.org/article/S2949-7086\(22\)00013-9/fulltext](https://www.igiejournal.org/article/S2949-7086(22)00013-9/fulltext)

Published in *Journal of EIO*. 2023 Aug 16;11(8):E778-E784.

Maham Hayat, Alexander Schlachterman, Grace Schiavone, Meir Mizrahi, Jong Kyu Park, Vivek Kumbhari, Antonio Cheesman, Peter V Draganov, Muhammad Khalid Hasan, Dennis Yang

## Initial multicenter experience using a novel articulating through-the-scope traction device for endoscopic submucosal dissection

**Aim and method:** A single-operator, articulating, through-the-scope (TTS) traction device was recently developed to facilitate endoscopic submucosal dissection (ESD). Clinical data on the performance of this device are limited. Investigators report an initial multicenter experience with ESD using this articulating TTS traction device. Retrospective analysis is conducted on all consecutive patients who underwent ESD using this traction device (T-ESD) at five centers between August 2021 and December 2022. Endpoints included: rates of *en bloc* resection, R0 resection, curative resection, and adverse events.

**Results:** Thirty-six patients (median age 64.8 years; 47.2% women) underwent ESD (median lesion size 40 mm; interquartile range [IRQ]: 27.5-67.5) for lesions in the esophagus (n=2), stomach (n=8), sigmoid colon (n=6), and rectum (n=20). Submucosal fibrosis was encountered in one-third of the lesions (33.3%). Median ESD time was 104.6 minutes (IQR: 65-122). *En bloc*, R0, and curative resection were achieved in 94.4%, 91.6%, and 97.2%, respectively. The single patient with non-curative resection of an invasive rectal adenocarcinoma underwent surgery. There were no cases of delayed bleeding or perforation. There was no recurrence on surveillance endoscopy (n=20) at a median of 6 months (IQR: 3.75-6).

**Table1. Baseline and procedure characteristics**

Lesion location, n (%)	
Esophagus	2 (5.6)
Stomach	8 (22.2)
Sigmoid colon	6 (16.7)
Rectum	20 (55.5)
Lesion size, median (interquartile range), mm	40 (27.5-67.5)
ESD procedural time, median (IQR), min.	104.6 (65-122)
Total procedural time, median (IQR), min.	119 (64-151)
Elective closure, n (%)	23 (63.9)
Resected specimen size, median (interquartile range), mm	43 (30-58)

**Table2. Resection outcomes, adverse events.**

Resection outcomes, n (%)	
<b>En-bloc resection</b>	<b>34 (94.4)</b>
<b>R0 resection</b>	<b>33 (91.7)</b>
<b>Curative resection</b>	<b>35 (97.2)</b>
Adverse events, n (%)	
Abdominal pain	3 (8.3)
<b>Post-procedure bleeding</b>	<b>0 (0)</b>
<b>Perforation</b>	<b>0 (0)</b>

**Conclusions:** This initial multicenter experience demonstrates high resection rates and excellent safety profile when performing ESD with this novel articulating TTS device. Dynamic real-time traction may lower the technical difficulty of ESD. Additional studies are needed to assess its cost-effectiveness and compare its usefulness with other traction devices and techniques during ESD.

To read the abstract, visit : <https://www.thieme-connect.com/products/ejournals/abstract/10.1055/a-2117-8444>