

## Is Endoscopic Submucosal Dissection for Colorectal Lesions Performed in the Endoscopy Suite Safe and Cost-Effective

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### Background

- Overtreatment of patients with benign-appearing complex colorectal lesions with a colectomy causes significant healthcare expenditures and potentially avoidable patient morbidity.
- Colorectal surgeons typically perform endoscopic submucosal dissections (ESD) in the operating room (OR) due to the potential risk of procedural complications such as bleeding and perforation. We hypothesized that with increasing experience, selecting patients to have ESD performed in the endoscopy suite (ES), rather than the OR, is safe, feasible and more cost effective.

### Methods

- All patients underwent ESD by a single surgeon, experienced in ESD, between 2013 and 2019 in our tertiary referral center were included in the study. Consecutive patients who underwent ESD in the OR (between 2013 and 2017) were compared to consecutive patients who underwent ESD in the ES (between 2017 and 2019). Patients who underwent colectomies for suspicion of cancer following ESD and cases that were performed before the surgeon achieved proficiency (between 2011 and 2013) were excluded. Patients who underwent colonic resection for any complication following ESD were included.
- Age, gender, BMI, polyp size, polyp location, final pathology, length of stay, perioperative complications, and total cost of procedures were collected and compared between the groups.

### Results

- During the study period a total of 236 patients underwent ESD with a mean age of  $63.6 \pm 10.67$  and 51% were male.
- Overall, 163 patients underwent ESD in the ES and 73 in the OR.
- ES and OR cases were comparable in terms of age, gender, BMI, intra-procedural and postoperative 30-day complications.
- ES cases had significantly greater polyp size, right-sided polyps and shorter hospital stay.
- The total cost ratio of ESD in ES to OR was 47% ( $p < 0.001$ ).

	Endoscopy Suit n=163 (69.2%)	Operating Room n=73 (30.8%)	p
Age	63.6 ( $\pm 10.1$ )	63.8 ( $\pm 12.0$ )	0.9
Sex (female)	79 (48%)	37 (51%)	0.42
BMI	28.5 [24.5;33.0]	28.8 [24.6;31.7]	0.54
Polyp Size	35[25;45]	26[20;35]	>0.001
Polyp localization (right-sided)	115 (71%)	62 (85%)	0.01
En-bloc resection	82 (51%)	26 (49%)	0.87
R0 resection	139 (85%)	62 (85%)	>0.99
Intra-procedural complications	2 (1%)	7(10%)	0.3
Postoperative 30-day complications	10 (6%)	4(6%)	0.94
Length of Stay	0.12 [0-3]	1.21 [1-9]	<0.001
Total Cost	47%	100%	<0.001

### Conclusions

- We report one of the largest series that elucidate endoscopic submucosal dissection in the endoscopy suite vs operating room and focuses on cost implementations. Performing endoscopic submucosal dissection for colorectal lesions in the endoscopy suite rather the operating room is safe with comparable complications and results in shorter length of stay with significant cost-saving benefits when performed by an experienced colorectal surgeon.