



## Making the transition from endoscopic submucosal dissection fellowship to independent practice: successful ESD of a large near-circumferential rectal lesion

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Widespread adoption of endoscopic submucosal dissection (ESD) in the United States has been challenging, partly because of the limited availability of training opportunities.<sup>1</sup> Recently, a junior faculty member based in the United States completed a novel 1-year ESD training program within a traditional American Society for Gastrointestinal Endoscopy fourth-year advanced endoscopy fellowship.<sup>2</sup> During the course of the training program, the trainee had assisted with or observed 19 cases, partially performed 18 cases, and fully or mainly performed 26 cases, in which the mean lesion diameter was 44.5 mm and in which 79.2% of lesions were colorectal. Here we discuss the transition to subsequent faculty practice by presenting the former trainee's first independent ESD case.

A 68-year-old man underwent colonoscopy for evaluation of mucous diarrhea and fecal incontinence, at which time a large polyp was seen in the distal rectum. Given the size of the lesion and concern about the harboring of advanced features or intramucosal carcinoma, he was referred for ESD.

Before the endoscopist proceeded with the case, plans for undertaking a first ESD case were discussed with senior faculty colleagues. Given the endoscopy staff's existing familiarity with electrosurgical generators, EMR, and complex pancreaticobiliary procedures, it was decided, after consultation with the staff and anesthesiology department, to proceed within the endoscopy unit. The procedure was scheduled on a day when the endoscopist had no other commitments. A step-by-step resection strategy was discussed in detail with the endoscopist's former ESD mentor. A formal clinic consultation was arranged with the patient, and informed consent was obtained.

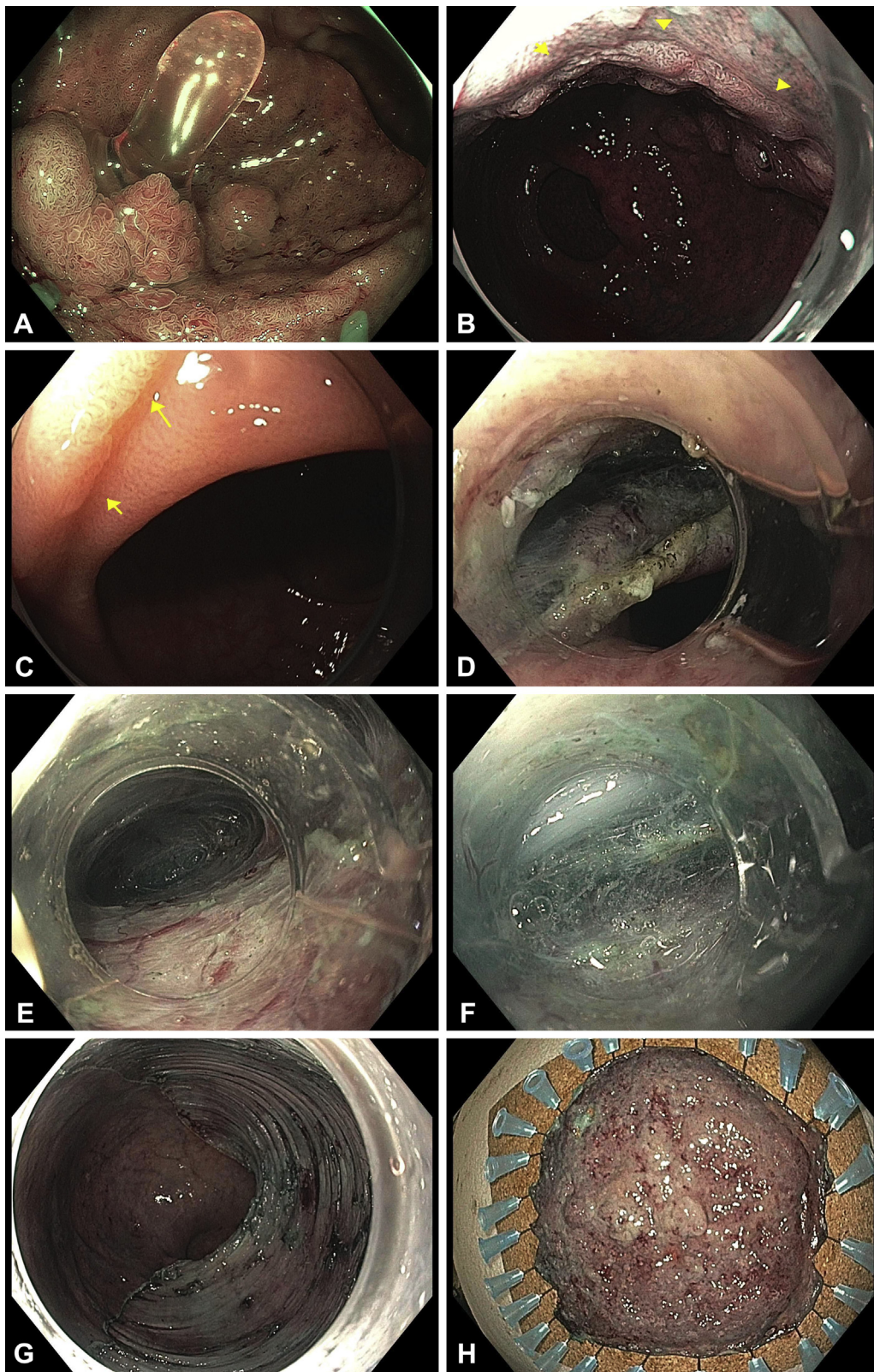
The procedure was performed with the patient under general endotracheal anesthesia. The lesion was noted to be a large mixed-type laterally spreading tumor (LST-G[mixed], Paris IIa+Is) spanning three-quarters of the rectal circumference (Fig. 1) (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)). Submucosal lifting was performed with a 6% hydroxyethyl starch solution, starting from the anal side of the lesion. An injectable needle-type ESD knife (Dual Knife-J; Olympus America, Center Valley, Pa, USA) with the assistance of a tapered tip cap (ST Hood; Fujifilm Medical Systems, Stamford, Conn, USA) was used to start

the mucosal incision. The pocket creation method was used,<sup>3</sup> and a submucosal tunnel was created extending to the proximal margin of the lesion. Hemostatic forceps (Coagrasper; Olympus America) were used to coagulate visible vessels encountered during submucosal dissection.

Owing to the large size of the lesion, significant difficulty was encountered halfway through the case, at which time the endoscopist reached out to his ESD mentor, who assessed the situation by video conference and provided valuable intraprocedural advice. In accordance with the mentor's advice, the sides of the pocket were fully opened, revealing a safe submucosal dissection plane in a position favorable to gravity. The lesion was ultimately resected in an en bloc fashion. The specimen measured 10.0 × 9.5 cm, and the pathologic diagnosis was tubulovillous adenoma with high-grade dysplasia. The margins were negative; thus, complete and curative resection was obtained. The procedure lasted 6 hours and 24 minutes, with a calculated resection speed of 11.7 cm<sup>2</sup>/hour. The endoscopist fully debriefed with the mentor within 1 week after completion of the case, soliciting feedback on handling challenging situations.

The patient was electively admitted for observation and recovered without bleeding or perforation. His symptoms of mucous diarrhea and fecal incontinence completely resolved, and at his 6-month follow-up visit, the ESD scar was fully healed, with no evidence of endoscopic or histologic recurrence.

Although ESD and its associated learning curve have been previously described,<sup>4-6</sup> this case highlights multiple challenges relevant to endoscopists starting independent ESD practice. Especially in the transition from fellowship training to independent practice as junior faculty, several important aspects merit special consideration in terms of obtaining appropriate support, arranging the logistics behind starting a long procedure, and anticipating unexpected events (Table 1). The anticipation and planning that went into this transition arguably assured the success and safety of the case and subsequent development of an ESD practice. Finally, routine debriefings with the ESD mentor allowed the endoscopist to continue making significant improvements in technique and strategy in the postgraduate setting.



**Figure 1.** Successful transition from endoscopic submucosal dissection fellowship to independent practice. **A**, Endoscopic view of a 10-cm laterally spreading tumor in the rectum. **B**, Extension of the distal margin to within 1 mm of the dentate line. **C**, Extension of the proximal margin to the first valve of Houston. **D**, Initial mucosal incision at the dentate line. **E**, Use of pocket creation approach for (**F**) submucosal dissection. **G**, Endoscopic appearance of defect after successful en bloc resection. **H**, Resection specimen.

**TABLE 1. A 14-point logistics checklist before an endoscopic submucosal dissection (ESD) practice is started**

Support
1. Is there firm support from senior faculty, department leadership, and the institution behind starting an ESD practice?
2. If a gastroenterologist is starting an ESD practice, will there be support/backup and/or collaboration from surgical colleagues?
3. Is there support from anesthesia staff to accommodate an unfamiliar long procedure in the endoscopy unit, or will an operating room environment be required?
4. How will the procedure be reimbursed? Is there departmental support to accommodate the financial burden of ESD?
5. Is continued support available from previous ESD mentor(s) in case of difficult situations? If so, how will the support be provided (eg, live proctoring, video conference, telephone call)?
6. Should the patient be electively admitted for observation, especially during the early/proctoring phase?
Preparation
7. Is the patient willing to undergo the procedure, given the circumstances or the knowledge that it is being performed by a junior faculty member?
8. Is the endoscopy staff motivated to learn and understand ESD devices and electrosurgery generator settings?
9. Can the case be scheduled in a low-stress fashion (ie, at least 4 hours for a first case, with no additional cases to follow)?
Anticipating the unexpected
10. What if the lesion is much bigger than anticipated? At what point should ESD be aborted and piecemeal EMR be performed instead?
11. What if the procedure takes much longer than anticipated? Can staff and schedule allow and support an unexpectedly prolonged procedure?
12. Do you feel comfortable handling possible complications (ie, bleeding and perforation) during or after the procedure?
Debriefing
13. What went well? What did not go well? Is there a "wish list" of things that would have been ideal to have?
14. Will the previous ESD mentor(s) be available to help debrief and troubleshoot?

ESD, Endoscopic submucosal dissection.

In conclusion, a successful first ESD case was performed after the endoscopist completed a 1-year ESD fellowship program in the United States. This video highlights multiple considerations and challenges that were addressed during the transition to independent ESD practice. A larger ESD learning curve study is under way.

## DISCLOSURE

*Dr Aihara is a consultant for Boston Scientific, Olympus America, and Fujifilm Medical Systems. Dr Thompson is a consultant for Boston Scientific and Olympus and the recipient of research support from Olympus. All other authors disclosed no financial relationships relevant to this publication.*

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*Abbreviation: ESD, endoscopic submucosal dissection.*

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