



Navigating the Treatment Landscape for Widespread Superficial Esophageal Squamous Cell Neoplasia

Moon Won Lee, Gwang Ha Kim

Department of Internal Medicine, Pusan National University School of Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Corresponding Author

Gwang Ha Kim

ORCID <https://orcid.org/0000-0001-9721-5734>

E-mail doc0224@pusan.ac.kr

See “Long-term Outcomes of Endoscopic Radiofrequency Ablation versus Endoscopic Submucosal Dissection for Widespread Superficial Esophageal Squamous Cell Neoplasia” by Xin Tang, et al. on page 198, Vol. 19, No. 2, 2025

The management of widespread superficial esophageal squamous cell neoplasia (ESCN) remains a complex clinical challenge, balancing oncologic efficacy with procedural safety. Endoscopic submucosal dissection (ESD) is well recognized for its ability to achieve *en bloc* resection and facilitate accurate histopathological assessment; however, it is associated with a high risk of postoperative esophageal stenosis.^{1,2} In contrast, endoscopic radiofrequency ablation (ERFA) has emerged as a viable alternative, with a lower risk of stenosis, although its long-term efficacy remains under investigation. In last issue of *Gut and Liver*, Tang *et al.*³ provide a critical comparative analysis of the long-term outcomes of ESD and ERFA in patients with widespread superficial ESCN, offering valuable insights into the strengths and limitations of these treatment modalities.

ESD is a preferred treatment for superficial ESCN, achieving high rates of *en bloc* resection and R0 resection. However, its technical complexity and associated adverse events, particularly esophageal stenosis, pose significant limitations. Previous studies have shown that post-ESD stenosis rates exceed 70% in lesions involving $\geq 3/4$ of the esophageal circumference.⁴ Although preventive strategies such as oral steroids and endoscopic balloon dilation are employed, they do not completely mitigate the risk of intractable stenosis.⁵

In the current study by Tang *et al.*, recurrence-free survival was significantly longer in the ESD group than in the ERFA group ($p=0.004$). This aligns with prior research indicating that ESD minimizes recurrence risks owing to its ability to provide precise histopathological assessment and

confirm clear resection margins.⁶ However, despite this oncologic advantage, the substantial risk of post-procedural stenosis remains a major deterrent, necessitating a more balanced approach in clinical decision-making.

ERFA is a minimally invasive alternative with lower procedural complexity and a reduced risk of stenosis. Tang *et al.* reported significantly fewer cases of stenosis in the ERFA group (15.2% vs 38.0%, $p=0.016$), consistent with results of a previous studies demonstrating a stenosis incidence ranging from 0% to 31% following ERFA.⁴ Notably, prior studies have shown that at 12 months, the complete response rate was 94.6% to 97.9% in the ESD group and 90.9% to 94.4% in the ERFA group, indicating no significant difference between the two treatment modalities in achieving sustained disease control.⁶ Additionally, the shorter procedure duration (median, 35 minutes for ERFA vs 105 minutes for ESD) and reduced hospital stay suggest practical advantages, particularly in older patients or those with significant comorbidities.

Despite these benefits, the limitations of ERFA must be acknowledged. The inability to achieve histological confirmation of complete resection raises concerns regarding residual disease and recurrence. Tang *et al.* identified a higher recurrence rate in the ERFA group, with preoperative diagnosis of intramucosal cancer serving as an independent predictor of recurrence (adjusted hazard ratio, 5.55; $p=0.002$). This finding underscores the necessity of rigorous preprocedural evaluation using advanced imaging techniques, such as image-enhanced endoscopy and endoscopic ultrasound, to optimize patient selection.⁷



The authors reinforced the importance of individualized treatment selection for widespread superficial ESCN. Although ESD remains the preferred option for definitive oncologic treatment, ERFA may serve as an alternative in cases where the risk of stenosis outweighs the benefits of *en bloc* resection. Importantly, careful preoperative assessment and close post-procedural surveillance are essential to ensure optimal outcomes.⁸ Future research should focus on refining patient selection criteria, incorporating hybrid approaches that combine the benefits of both techniques, and evaluating novel strategies, such as endoscopic background mucosal resurfacing, to reduce recurrence rates. Prospective randomized controlled trials are warranted to further validate these issues and guide best practices for ESCN treatment.

This study provides critical insights into the ongoing discourse on the treatment of ESCN. As endoscopic techniques continue to evolve, the integration of multimodal assessment and personalized treatment approaches will be key to improving patient outcomes while minimizing procedural morbidities. The choice between ESD and ERFA should be guided by the tumor characteristics, patient comorbidities, and anticipated risks and benefits of each approach.

CONFLICTS OF INTEREST

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ORCID

Moon Won Lee <https://orcid.org/0000-0002-8411-6398>
Gwang Ha Kim <https://orcid.org/0000-0001-9721-5734>

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