EDITORIAL

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Beyond technique: toward strategy-based endoscopic resection for rectal neuroendocrine tumors

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Rectal neuroendocrine tumors (NETs) are increasingly detected during colonoscopy. Most small NETs (≤ 10 mm) confined to the submucosa can be effectively managed with endoscopic resection as a first-line treatment [1,2]. However, their submucosal localization makes achieving histologically complete resection challenging. To overcome this challenge, advanced techniques—including modified endoscopic mucosal resection (EMR), such as ligation-assisted (EMR-L), precutting (EMR-P), and tip-in methods [3]—as well as endoscopic submucosal dissection (ESD), have demonstrated higher complete resection rates compared with conventional EMR [2,4]. Despite these advances, a clear consensus regarding the optimal technique and appropriate selection criteria has yet to be established. Moreover, direct comparative evidence—particularly among modified EMR strategies—remains limited.

A recent study compared the efficacy of EMR-L and EMR-P in small rectal NETs [5]. Both approaches demonstrated excellent technical performance, with higher rates of en bloc and complete histologic resection, low recurrence rates, and comparable safety profiles. Although EMR-P was associated with a longer procedure time, the absolute difference was modest and unlikely to be clinically meaningful. Notably, EMR-L achieved comparable complete resection outcomes despite being more frequently used in biopsy-proven lesions, which are typically associated with submucosal fibrosis.

However, despite these favorable outcomes, an important limitation remains: complete resection is not achieved in all cases, with most incomplete resections attributable to positive vertical margins—a well-recognized challenge in the endoscopic management of rectal NETs [2,6]. Although small rectal NETs generally have an excellent prognosis [7,8], incomplete resection should not be considered clinically insignificant. Residual tumor at the vertical margin may necessitate additional interventions, including repeat endoscopic resection or surgery, thereby increasing healthcare costs and imposing a psychological burden on patients. In this context, achieving complete resection at the initial procedure remains a critical goal [1,2,9]. Additionally, prior forceps biopsy may reduce the efficacy of suction-based techniques by inducing submucosal fibrosis and precluding adequate lifting [10,11]. The study indicated that EMR-L achieved comparable outcomes despite being more frequently applied to biopsy-proven lesions, suggesting a degree of procedural robustness. However, incomplete resection still occurred even in small tumors, indicating that fibrosis may substantially compromise vertical margin clearance. Consistent with this finding, recent randomized data suggest that modified EMR may yield lower complete resection rates than ESD in biopsy-proven lesions [10]. Collectively, these findings highlight the need for a more tailored approach to endoscopic treatment. Specifically, the selection between modified EMR and ESD should be guided not only by tumor size, but also by procedural factors such as lifting characteristics and the presence of fibrosis. ESD may be more appropriate for lesions with poor lifting or visible scarring, whereas modified EMR may be effective for lesions with preserved lifting.

In conclusion, endoscopic resection remains the standard treatment for small rectal NETs. However, the optimal technique has yet to be defined. While the study demonstrated

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that EMR-P yields outcomes comparable to those of EMR-L, incomplete resection—particularly due to positive vertical margins—remains an unresolved challenge. Factors such as prior forceps biopsy and presence of submucosal fibrosis significantly influence resection outcomes, underscoring the need for a more individualized approach to technique selection. Further studies are warranted to establish practical, evidence-based criteria and to optimize complete histologic resection in clinical practice.

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