



Challenges in early detection and endoscopic resection of esophageal cancer: There is a long way to go

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Abstract

The publication by Qu *et al* provided a comprehensive discussion about the epidemiology, etiology, histopathology, early detection, and endoscopic treatment of esophageal carcinoma (EC) and summarized the progress in the advanced technologies for screening and endoscopic resection for EC. In this editorial, we will provide deeper insight into the challenges that hinder practical application of these advanced technologies along with the role of these technologies in upper endoscopy quality. More efforts need to be made to overcome the challenges and add the value of these technologies in upper endoscopy quality. Clinical outcomes of management strategies after noncurative endoscopic dissection for early EC patients need further investigation. The experiences with noncurative endoscopic resection of other organs may have certain implications for noncurative resection of early EC.

Key Words: Esophageal cancer; Early detection; Endoscopic submucosal dissection; Noncurative endoscopic submucosal dissection

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Core Tip: Challenges remain in practical application of advanced technologies in the detection of esophageal carcinoma (EC), and it is also important to add the value of these technologies in upper endoscopy quality. For early EC patients, the clinical outcomes of management strategies after noncurative endoscopic resection need to be further studied and the clinical experiences with noncurative endoscopic resection of other organs are helpful.

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TO THE EDITOR

We read with interest the publication by Qu *et al*[1] in which the epidemiology, etiology, histopathology, early detection, and endoscopic treatment of esophageal carcinoma (EC) were thoroughly discussed. The authors emphasized the geographical disparities in the distribution of histological subtypes and the corresponding variations in early EC screening policies and treatment modalities across different regions. Then the authors summarized the achievements that have been made and the challenges faced in the early detection and endoscopic resection of EC.

For the screening of early EC, the authors mentioned the prospect of advanced technologies, such as confocal laser endomicroscopy (CLE), volumetric laser endomicroscopy (VLE), and artificial intelligence (AI)[1]. Compared with conventional techniques, the above technologies have shown favorable performance, but challenges remain. Here, we provide deeper insight into their practical implications. First, these advanced technologies depend on sophisticated equipment, which limits their widespread use in remote institutions. Second, some of these technologies, such as CLE, cannot be used alone to distinguish tissue differentiation[2], but combining CLE with other technologies may increase the burden of EC screening. It is reasonable to evaluate these advanced technologies from the perspective of cost-effectiveness. In addition, their role in upper endoscopy quality is also a critical issue.

CLE and VLE lengthen training sessions because they require endoscopists to be proficient in reading images. However, these technologies can provide high-resolution real-time images under endoscopy to improve the detection rate[3,4]. Overall, CLE and VLE may enhance upper endoscopy quality. AI has profoundly improved upper endoscopy quality by supervising the procedure and reducing interobserver variability[5]. At present, uneven access to these advanced technologies across regions is inevitable, but we should make ongoing efforts to add their value in terms of upper endoscopy quality.

For the treatment of early EC, Qu *et al*[1] acknowledged the advantages and curability of endoscopic resection, particularly endoscopic submucosal dissection (ESD). However, we cannot merely emphasize the success of endoscopic resection, and it is also important to explore noncurative endoscopic resection in early EC. Notably, there is still controversy regarding ESD for stage T1b EC. Stage T1b EC is a risk factor for noncurative resection[6-8]. The risk of lymph node metastasis (LNM) and tumor recurrence is high in patients with stage T1b EC after noncurative ESD, and additional treatment is usually needed. A retrospective study demonstrated that patients with T1 esophageal squamous cell carcinoma (ESCC) who underwent primary surgery did not have favorable overall or recurrence-free survival outcomes compared to those who underwent salvage esophagectomy after noncurative ESD[9]. Therefore, although T1b ESCC patients often need salvage esophagectomy following noncurative ESD, they may have similar survival benefits to those who undergo surgery as primary treatment. Another retrospective study showed no difference in overall survival outcomes between follow-up alone and salvage surgery after noncurative ESD in T1b esophageal adenocarcinoma (EAC) patients[10]. This means that salvage surgery may not be the only option for patients with T1b EAC after noncurative ESD, especially those who are not surgical candidates, and follow-up may serve as an alternative. Given that chemoradiotherapy (CRT) has been used to control esophageal cancer, we agree that CRT may be effective for treating residual cancer after noncurative resection. Additional CRT after noncurative ESD may decrease cancer occurrence[11] and enable elderly patients with a high risk of LNM to obtain good survival benefits[12]. However, the high incidence of CRT-related adverse events deserves attention and the risk-benefit ratio of additional CRT in EC patient treated with noncurative ESD needs further investigation. In conclusion, current studies on the postoperative management for early EC with noncurative ESD patients have mainly involved small-scale retrospective studies. The safety and efficacy of different intervention strategies after noncurative ESD (salvage surgery, follow-up only, and additional CRT) still need to be explored in more large-sample prospective studies.

There is much research space in noncurative esophageal ESD and turning to noncurative ESD of other organs may provide us with new insights. The risk of LNM is the most important prognostic factor[13], and the eCure system[14] was recommended for quantifying the risk of LNM after noncurative gastric ESD. Morais *et al*[15] modified the eCure system and subsequently developed the W-eCura system, which outperformed the eCure. Currently, there is no evaluation system for noncurative esophageal ESD. Drawing on the eCura and W-eCura models, designing and validating a tool to evaluate the risk of LNM and residual cancer after noncurative esophageal ESD are helpful for selecting patients who are more likely to benefit from salvage surgery and avoiding unnecessary salvage surgery. We also expect that this assessment tool include items regarding patient age, which is an important factor in evaluating general conditions and predicting complications associated with additional treatment.

Noncurative colorectal ESD also faces the problems of weighing the benefits and risks of additional treatment. A multicenter retrospective study compared the benefits and risks between follow-up alone and salvage surgery after noncurative T1-colorectal ESD[16]. The results showed that at a median follow-up of 30 mo, cancer recurrence and disease-specific survival did not differ between the two groups, but the risk of death was increased in the follow-up group[16]. These findings may help guide the management of noncurative colorectal ESD in elderly patients with relatively limited life expectancy. The long-term outcomes of intervention strategies after noncurative ESD are also expected. These clinical experiences with noncurative colorectal ESD will help us carry on a series of studies on non-

curative esophageal ESD.

CONCLUSIONS

We are grateful to Qu *et al* [1] for their valuable review of early detection and endoscopic resection of early EC. Although encouraging results have been achieved, it is still necessary to further promote the practical application of the advanced technologies in the diagnosis of early EC, and their value in improving upper endoscopy quality. In addition, the management strategies for early EC after noncurative ESD should be further explored, so that patients with early EC can benefit more from endoscopic techniques.

FOOTNOTES

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