

**Title:**  
**Endoscopic management of an unexpected cause of esophageal perforation**

**Authors:**  
De-feng Li, Zheng-lei Xu, Li-sheng Wang

DOI: 10.17235/reed.2021.8084/2021

Link: [PubMed \(Epub ahead of print\)](#)

Please cite this article as:

Li De-feng, Xu Zheng-lei , Wang Li-sheng . Endoscopic management of an unexpected cause of esophageal perforation. Rev Esp Enferm Dig 2021. doi: 10.17235/reed.2021.8084/2021.

*This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.*

## Endoscopic management of an unexpected cause of esophageal perforation

De-feng Li, Zheng-lei Xu, and Li-sheng Wang

Shenzhen People's Hospital (the Second Clinical Medical College, Jinan University; the First Affiliated Hospital, Southern University of Science and Technology), Shenzhen, Guangdong, China

### Correspondence to:

Zheng-lei Xu MD or Li-sheng Wang MD, Department of Gastroenterology, Shenzhen People's Hospital (the Second Clinical Medical College, Jinan University; the First Affiliated Hospital, Southern University of Science and Technology), No.1017, Dongmen North Road, Luo hu District, Shenzhen 518020, P. R. China. E-mail: 78249073@qq.com or wanglsszrmyy@163.com.

### Author contribution:

Zheng-lei Xu and De-feng Li designed the study. De-Feng Li drafted the manuscript. Zheng-lei Xu revised the manuscript. Li-sheng Wang and Zheng-lei Xu performed the operation. All authors read and approved the final manuscript.

## Case report

A 46-year-old man complained of epigastric pain for 3 months without previous disease history. An esophagogastroduodenoscopy (EGD) revealed a submucosal tumor (SMT) adjacent to a diverticulum in the lower esophagus (Figure 1A). Endoscopic ultrasound (EUS) examination implied homogeneous hypoechoic lesions (4\*2mm) originated from the muscularis mucosae (Figure 1B). The images of chest CT scan were normal (Figure 1C). Subsequently, the SMT was successfully removed with endoscopic mucosal resection (EMR) (Effect 3, Duration 2, Interval 3, ERBE, Germany) as usual (Figure 1D). Histopathology confirmed a leiomyoma (Figure 1E). Unfortunately, the patient was suffered from severe chest pain and dyspnea in the second day after the operation. The chest CT scan revealed pneumomediastinum and left lower lobe inflammatory indicating the esophageal perforation (Figure 1F). Then, the EGD was performed again, and showed an esophageal ulcer in the lower esophagus (Figure 1G). Finally, the esophageal ulcer was successfully closed using clips (Micro-Tech, China) and nylon loop (Olympus, Japan) (Figure 1H). The patient was eventually recovered in a week after his fasting and anti-infection therapies.

## Discussion

EMR is an feasible and safe modality to remove the esophageal SMT originating from muscularis mucosae less than 10mm, and the adverse events are rare<sup>1</sup>. However, the patient was undergone esophageal perforation in this study. A possible explanation could be the adjacent diverticula perforation due to deep thermal injury when the SMT removed, because the esophageal diverticula was absence of cricopharyngeal muscle<sup>2</sup>. Therefore, we would like to remind the possible complication of esophageal perforation when removing small esophageal SMT adjacent to an esophageal diverticulum.

## Acknowledgements

This work was supported by Natural Science Foundation of Guangdong Province (No. 2018A0303100024), Three Engineering Training Funds in Shenzhen (No. SYLY201718, No. SYJY201714 and No. SYLY201801), Technical Research and Development Project of Shenzhen (No. JCYJ20150403101028164, No. JCYC20170307100911479 and No. JCYJ20190807145617113), National Natural

Science Foundation of China (No. 81800489).

### Conflict of Interest

The authors declare no conflict of interest.

### Reference

1. Choi CW, Kang DH, Kim HW, et al. Endoscopic resection for small esophageal submucosa tumor: Band ligation versus conventional endoscopic mucosal resection. *Medicine (Baltimore)* 2017;96:e7574.
2. Morita FHA, Bergantini Neto H, Sakai P, et al. Magnet-assisted endoscopic diverticulotomy for an esophageal diverticulum after anterior cervical spine surgery: First case report. *Endosc Int Open* 2021;9:E824-E827.

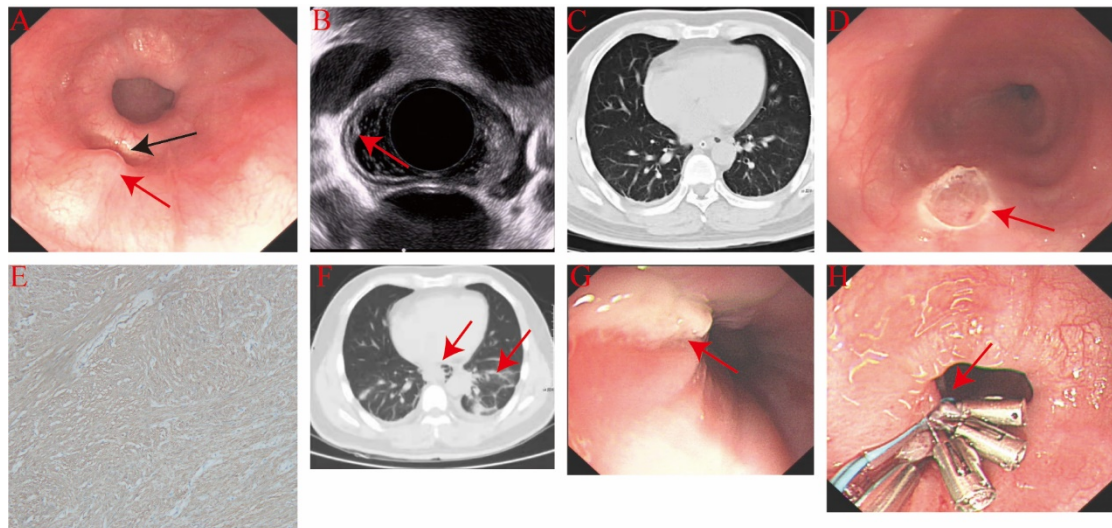


Figure 1: A, A submucosal tumor (SMT) (red arrow) adjacent to a diverticulum (black arrow) in the lower esophagus; B, The SMT originated from the muscularis mucosae (4\*2 mm) (red arrow); C, Chest CT scan was normal before the operation; D, The SMT was successfully removed; E, Immunohistochemistry showed that SMA is positive, whereas CD117 is negative; F, Chest CT scan revealed pneumomediastinum and left lower lobe inflammatory (red arrow); G, A defect in the lower esophagus after operation; H, The defect was closed using clips and nylon loop (red arrow).