Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

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DOI: 10.17235/reed.2025.11237/2025
Link: PubMed (Epub ahead of print)

Please cite this article as:
Tanaka Hitoshi, Furukawa Kazuhiro, Hirose Takashi, Suzuki Takahiro , Shibata Hiroyuki , Kurata Yoshiyuki , Fukuzawa Kazuma , Nakamura Masanao, Kawashima Hiroki. Esophageal dysmotility after catheter ablation for atrial fibrillation. Rev Esp Enferm Dig 2025. doi: 10.17235/reed.2025.11237/2025.

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Esophageal dysmotility after catheter ablation for atrial fibrillation

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Conflicts of Interest: The authors state that they have no Conflict of Interest.

Abstract

A 57-year-old male patient presenting with dysphagia two years following catheter ablation for atrial fibrillation was referred to our department. Upper gastrointestinal endoscopy and barium esophagography revealed no apparent abnormalities; however, high-resolution manometry demonstrated markedly abnormal contractions. The patient subsequently received treatment with gastroprokinetic agents, leading to symptomatic improvement. To date, only a limited number of reports have documented esophageal motility disorders as a complication of catheter ablation. This case, therefore, represents a novel clinical entity of significant relevance.

Keywords: Catheter ablation. High-resolution manometry. Dysphagia. Esophagus dysmotility.

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Dear Editor,

Catheter ablation is a widely employed therapeutic intervention for cardiac arrhythmias and plays a pivotal role in drug-free arrhythmia management. (1) While rare, severe complications such as left atrial-esophageal fistula and gastroparesis have been reported following ablation procedures.(2) However, esophageal motility disorders following ablation remain poorly characterized, with only a limited number of cases documented in the literature.(3,4) Herein, we report a case of esophageal dysmotility identified using high-resolution manometry (HRM) following catheter ablation.

A 57-year-old male patient with dysphagia was referred to our department two years after undergoing catheter ablation for atrial fibrillation. Esophagogastroduodenoscopy revealed no apparent abnormalities, and barium esophagography demonstrated normal barium transit without significant findings. However, HRM identified pronounced abnormal esophageal contractions. HRM revealed that distal contractile integral was 11,082 mmHg・cm・s, integrated relaxation pressure was 16.1 mmHg, and distal latency was 9.4 second. During the pulmonary vein and left atrial ablation procedure, a region approximately 10–15 cm in length (corresponding to 4–6 vertebral bodies) above the diaphragm had been ablated. As this region coincided with the area exhibiting abnormalities on HRM (Figure 1) and the patient had been asymptomatic prior to ablation, we inferred that the symptoms were attributable to abnormal esophageal contractions at the ablation site. The patient was subsequently treated with gastroprokinetic agents, resulting in symptom resolution.

When patients present with gastrointestinal symptoms such as dysphagia, endoscopic evaluation is typically performed to rule out obstructive etiologies, including malignancy, reflux esophagitis, and eosinophilic esophagitis. Esophageal manometry is a specialized diagnostic modality primarily available at tertiary care centers. However, as demonstrated in the present case, HRM can identify significant motility abnormalities that may not be apparent on endoscopic or radiographic assessments. Thus, HRM should be considered as a diagnostic tool for patients presenting with persistent gastrointestinal symptoms suggestive of esophageal dysmotility.

Esophageal motor function abnormalities after catheter ablation include hypercontractile

esophagus (one case)(3) and distal esophageal spasm disappearance (one case)(4). The precise mechanism underlying ablation-induced esophageal motility disturbances remains unclear. However, considering that esophageal erosion has been reported in approximately 20% of patients following ablation, it has been postulated that thermal stimulation associated with the procedure may impact the esophageal plexus, subsequently resulting in motility dysfunction.

In conclusion, esophageal motility disorders can manifest following catheter ablation. In addition to endoscopic evaluation, HRM should be considered when patients present with gastrointestinal symptoms following ablation, such as esophageal tightness sensation, to facilitate early diagnosis and appropriate management.

Acknowledgments

We would like to thank Editage (www.editage.jp) for English language editing.

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Neurogastroenterol Motil 2020;32:e13886. DOI: 10.1111/nmo.13886.

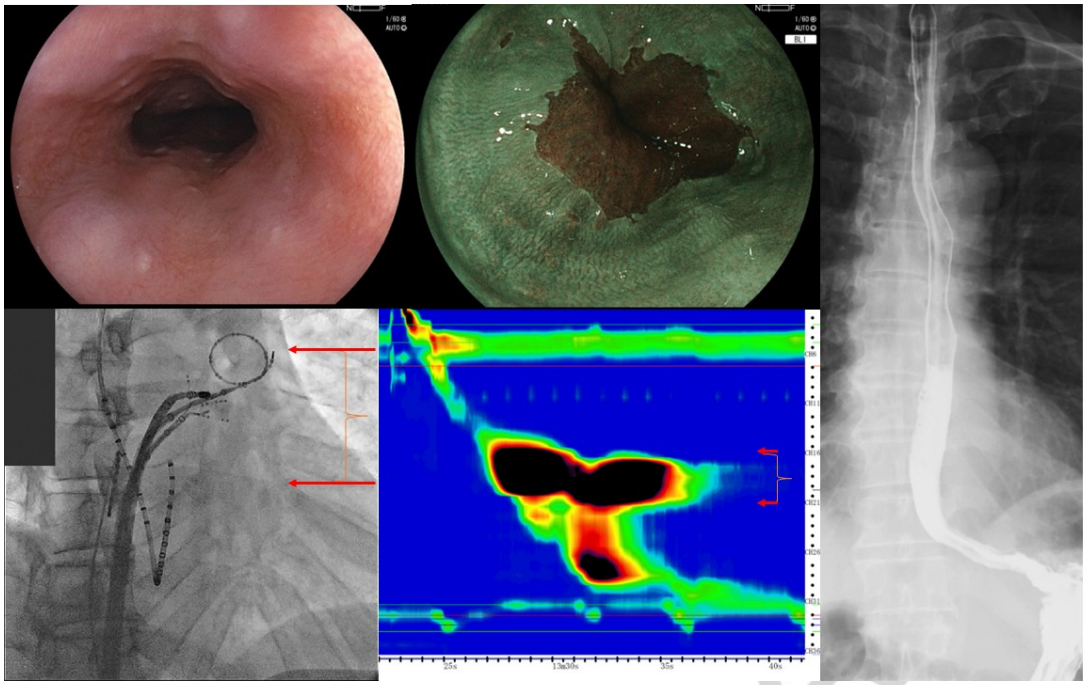

Fig. 1. Esophagogastroduodenoscopy images. No ulcers, tumors, or strictures are observed in the thoracic esophagus. No findings of gastroesophageal reflux disease, tumors, or strictures are observed in the esophagogastric junction. No abnormal findings are observed in the esophagogastric junction during image-enhanced endoscopy. Esophageal dysmotility observed via high-resolution manometry above 10 cm from the lower esophageal sphincter. Esophageal barium angiography images. No barium retention or strictures are observed in the esophagus.