

# Esophageal Perforation Following Atrial Fibrillation Ablation: A Review of Ablation-Associated Esophageal Injury



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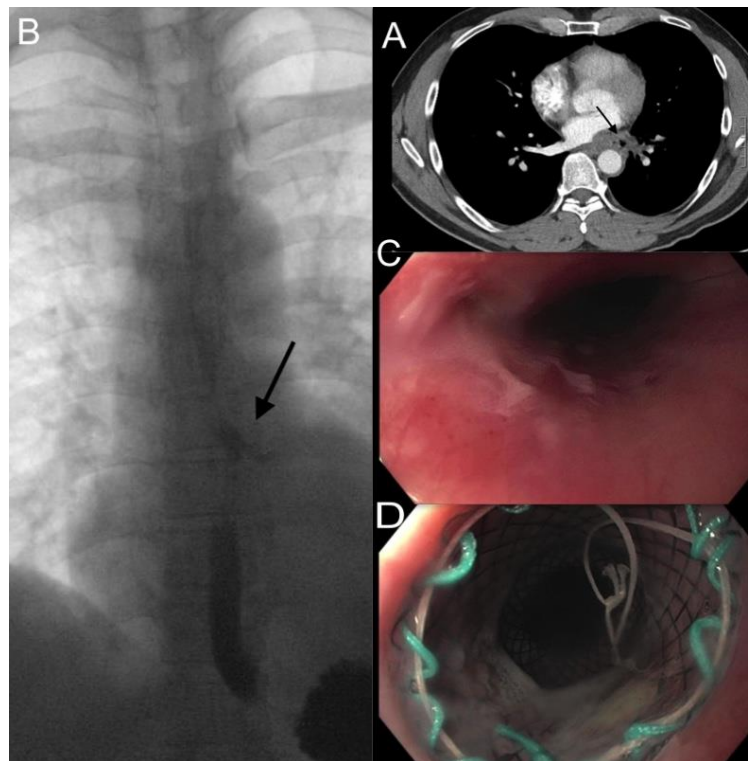
## Introduction

Catheter ablation is a common treatment for refractory atrial fibrillation (AF). Due to the close proximity of the esophagus to the left atrium, there is risk for severe esophageal injury. We present a case of a patient who developed an esophageal perforation, pulmonary vein thrombosis, and embolic stroke one month after AF ablation.

## Case Presentation

A 49-year-old male with a history of AF ablation one month ago presented with heartburn, dysphagia, fevers and interscapular pain. On exam, T 103.3 F, abdomen was benign, and no crepitus was appreciated. CT chest with IV contrast showed thickening in the posterior wall of the left atrium and small air pockets in the left infrahilar region (Image A). Blood cultures were positive for *Streptococcus mitis*. On hospital day 2, he developed left upper extremity weakness. Brain MRI showed small embolic infarcts. TEE was attempted but incomplete due to resistance in the proximal esophagus. Gastrograffin esophagram showed extravasation of contrast from the esophagus, consistent with an esophageal perforation (Image B). CTA chest showed hemorrhage in the left lower lobe (LLL) and occlusion of the left pulmonary vein. EGD showed blood throughout the esophagus with a small mucosal defect with clot at 38 cm, without evidence of atrio esophageal fistula (AEF) (Image C). He underwent a left lower lobectomy, and after failed conservative therapy, a partially covered esophageal stent was placed (Image D). He has since needed serial esophageal dilations.

## Figures



**Image A.** Computed tomography (CT) chest with intravenous contrast showing mild thickening in the left posterior aspect of the left atrium, tiny pockets of air in the left infrahilar region (arrow).

**Image B.** Gastrograffin fluoroscopic swallow study showing evidence of an esophageal leak (arrow) 3cm below the left mainstem bronchus at the site of the tiny air pockets previously seen on CT imaging.

**Image C.** Endoscopic imaging showing a small mucosal defect.

**Image D.** Endoscopic imaging showing a partially covered esophageal stent.

## Discussion

As catheter AF ablation becomes increasingly common, it is important to recognize the potential for esophageal injury. Patients can present 1 to 4 weeks post-ablation with chest pain, acid reflux, and dysphagia. Imaging of choice is CT with IV and oral contrast to rule out AEF. Endoscopy should generally be avoided due to risk of air embolism. Management depends on the extent of injury but ranges from endoscopic stent placement to open surgical intervention. Techniques to reduce the risk of injury include using an esophageal temperature probe and gastric suppression therapy, although data is lacking on efficacy. Esophageal injury may occur in up to 47% of patients, and includes mild thermal burns, vagus nerve injury, perforation and AEF. This case outlines the potential esophageal complications in patients who present in the months following AF ablation.

## References

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