An Electrifying Connection: A Case of Atrio-Esophageal Fistula

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Introduction

- **Atrio-esophageal fistula (AEF)** is a rare but highly fatal complication of catheter ablation for atrial fibrillation, with a mortality rate up to 71%.
- **Thermal injury during ablation** is the primary cause, due to the esophagus's proximity to the left atrium.
- **Early detection is difficult** due to deceptive symptoms, requiring high vigilance and prompt action.
- **AEF and pericardial-esophageal fistula (PEF)** are related conditions that can both lead to serious complications like cardiac tamponade.

Case Presentation

- **75-year-old female** was initially admitted to an outside hospital due to chest pain and worsening dyspnea after cardiac ablation (POD #10).
- She was transferred to our facility due to concerns about moderate pericardial effusion developing into cardiac tamponade.
- **Medical history**: atrial fibrillation on Eliquis, hypertension, arthritis, depression, previous hepatitis (unclear if treated).
- **Surgical history**: appendectomy, cardiac catheterization, recent cardiac ablation

Media

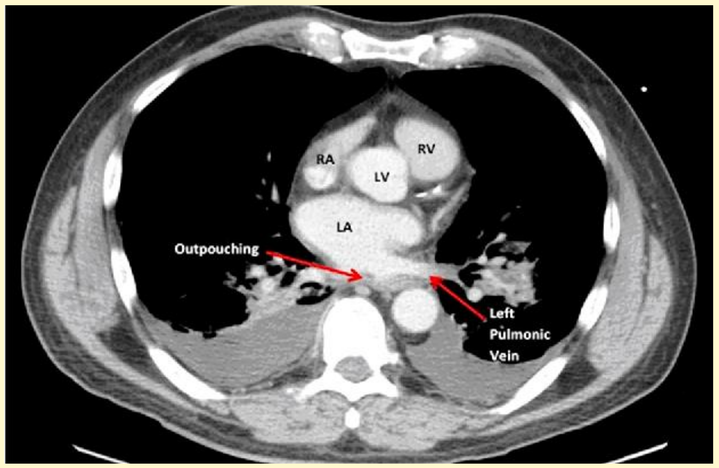

Figure 1. Atrio-Esophageal Fistula Annotated.
Singh, Robby et al. "Atrial-Esophageal Fistula After Catheter Ablation: Diagnosing and Managing a Rare Complication of a Common Procedure." The American Journal of Case Reports 20 (2019): 557 - 561.

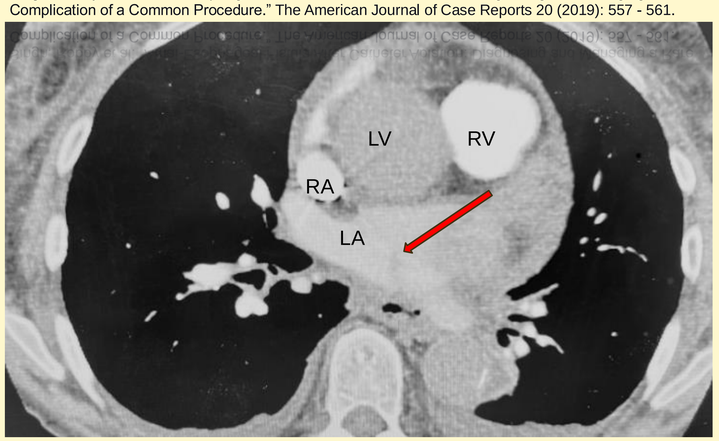

Figure 2. Patient CTA. The image shows intraluminal air at the level of the left atrium and pulmonary veins, with a faint tract (red arrow) suggesting a fistula.

Discussion

- **Atrio-esophageal fistula (AEF)** is a rare but life-threatening complication of atrial fibrillation catheter ablation, with an incidence of 0.03-0.08%.
- **Thermal injury** during ablation causes tissue necrosis, forming a fistula between the left atrium and esophagus, leading to serious complications such as sepsis, air embolism, and hemodynamic instability.
- **Symptom Onset**: Non-specific infectious, gastrointestinal, cardiac, or neurological symptoms **within two months post-ablation** should raise suspicion of AEF.
- **Diagnosis**: Early chest CT with PO and IV contrast or MRI is recommended; avoid endoscopy (EGD) due to a 28% risk of rapid deterioration, including death, in suspected AEF cases.
- Esophageal-Pericardial Fistula (PEF) and AEF are interconnected, with PEF potentially progressing to AEF, emphasizing the need for prompt diagnosis and aggressive management to prevent fatal outcomes.

Conclusion

Early detection of AEF is vital to prevent life-threatening complications; prompt imaging and cautious management are key.

References (at request)

POD1-9:	POD10:	POD11/HD1:	POD12-13/HD2-3:	POD16/HD4:	POD17/HD5:	POD19/HD7:	POD19/HD7:
• Progressive chest pain and dyspnea.	• ED visit for Afib with RVR; treated with Cardizem and Digoxin drip. • CTA of the Chest from outlying hospital, negative for pulmonary embolism.	• Transferred for cardiology and CTS evaluation; started on Colchicine, Ibuprofen, and Norepinephrine drip. • Labs: WBC 33k, 86% neutrophils, Na 131, Cr 2.8, BUN 55.	• HR 103, BP 90/68, RR 26, SpO2 95% on 4L NC, ill-appearing, JVD present. • ECHO and pericardiocentesis performed (320 cc serous fluid drained, pigtail drain placed).	• Ventimask (50L, 60%), then BiPAP; started on Zosyn and Doxycycline for suspected pneumonia.	• On BiPAP; *S. pyogenes* found in pericardial fluid; blood cultures negative.	• Planned downgrade, but experienced hypotension before transport, stabilized with 1L NS bolus.	• Code Blue due to massive bleeding from the oral cavity; intubated, MTP activated but no blood products given; asystole and 35 minutes of resuscitation.