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Evaluation of Esophageal Migration during Extensive Pulmonary Vein Isolation for Atrial Fibrillation

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Background: Esophageal migration during left atrial (LA) ablation for atrial fibrillation (AF) may cause inadvertent esophageal injury. Objectives: The aim of this study was to evaluate the prevalence and mechanism of esophageal migration during extensive encircling pulmonary vein isolation (EEPVI) for AF.

Methods: We examined 61 consecutive patients with drug-resistant AF (age: 56 ± 10 years, paroxysmal/permanent; 46/15) undergoing EEPVI. After simultaneous esophagography and pulmonary venography, a gastric tube was inserted into the esophagus to monitor a real-time esophageal location during the procedure. EEPVI was performed using an anatomical approach along the posterior LA wall with 35 watts of radiofrequency (RF) energy, and an electrophysiological approach at the anterior aspect of the ipsilateral pulmonary veins with 40 watts. Result: Successful pulmonary vein isolation was achieved with a mean RF duration of 26 ± 5.1 minutes in all patients. In two (3.3%) of 61 patients, the esophagus moved immediately from the center of the posterior LA wall to close to the left pulmonary vein ostium during RF energy deliveries at the anterior aspect of the right pulmonary vein. The esophagus stayed there until the end of the procedure.

Conclusions: The esophagus migrated reflexively to the ablation at the ostium of the pulmonary vein. Although it rarely occurred, the real-time monitoring of esophageal location should be performed to avoid esophageal injury during LA ablation for AF.