

AN UNEXPECTED ANATOMY IN LEFT ATRIAL APPENDAGE OCCLUSION

Authors: Parth Patel MD, Inga H. Robbins MD, Jeffrey E. Van Hook DO, Devender N. Akula MD

Background: Left atrial appendage occlusion (LAAO) devices are increasingly used in atrial fibrillation (AF) patients at high stroke risk with contraindications to long-term oral anticoagulation. However, anatomical variants and unusual findings on pre-procedural imaging can challenge successful LAAO device implantation.

Case: An 82-year-old female with a history of paroxysmal AF, hypertension, hyperlipidemia, obstructive sleep apnea, and gastrointestinal bleeding due to arteriovenous malformation underwent transthoracic echocardiography for evaluation of the left atrial appendage. TEE revealed preserved left ventricular systolic function, moderate mitral regurgitation, moderately enlarged left atrium and a 1.2 cm fibrinous strand attached to base of left atrial appendage orifice. Procedure was deferred, and patient remained on Apixaban for anticoagulation for 4 months. Repeat TEE showed persistent fibrinous strand and left atrial appendage measuring 1.25 x 1.67 x 2.23 cm. Given the concern for thromboembolic risk, we implanted a 22 mm amulet device with sentinel cerebral protection device in place. No complications were noted during procedure. One-month follow-up TEE revealed well positioned amulet without peri-device leak or thrombus.

Decision-making: The presence of a fibrinous strand attached to base of left atrial appendage can increase thromboembolic risk during LAAO device placement. We felt that amulet device implantation with sentinel cerebral protection would be the safest option for our patient. The dual-seal and distal lobe anchoring mechanism of amulet device and use of cerebral embolic protection during implantation should mitigate thromboembolic risk.

Conclusion: Our case illustrates that LAAO device implantation can safely done with amulet and sentinel cerebral protection device in patient with fibrinous strand at base of left atrial appendage to mitigate thromboembolic risk. In the future, novel device designs may facilitate LAAO device implantation in patient with challenging anatomical variants.