

Rudimentary left atrial appendage in atrial fibrillation, congenital occlusion device, or continued thrombotic risk

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Recent advances in interventional procedures for left atrial appendage (LAA) closure and instrumentation have made it clinically important to understand LAA anatomy and evaluation. Rare anatomic variants including rudimentary and congenitally absent LAA have been identified, complicating anticoagulation decisions in these patients.^{1,2}

A 55-year-old man presented with recurrent stroke. Ambulatory electrocardiogram monitoring diagnosed paroxysmal atrial fibrillation. CHA₂DS₂-VASc score was 5, with points attributed to hypertension, diabetes, peripheral artery disease and stroke. LAA occlusion device placement was discussed given elevated bleeding risk. HAS-BLED score was 4, with points for hypertension, renal disease, stroke, and prior gastrointestinal bleeding. Transoesophageal echocardiogram (TOE) operator was unable to visualize the LAA (*Figure 1*). Cardiac computed tomography (CT) was ordered to further evaluate the patient's anatomy, and only rudimentary LAA was present (*Figure 2*). Due to this anatomy, the patient was not a candidate for an occlusion device, but the necessity of anticoagulation was less certain.

Differential diagnosis for non-visualization of LAA during TOE includes flush thrombus, variant anatomical features, poor echocardiography windows, prior surgical ligation, and insertion of an occlusion device.¹ Further imaging using CT or magnetic resonance imaging is recommended to evaluate LAA anatomy.² LAA occlusion is a reasonable alternative to warfarin therapy for stroke prevention in patients with non-valvular atrial fibrillation.³ It has been previously postulated, though not proven, that congenital absence of LAA could infer a reduced thromboembolic risk similar to LAA occlusion.⁴ However, limited outcome data or discussion of rudimentary appendages has been published. Given the uncertain thromboembolic risk associated

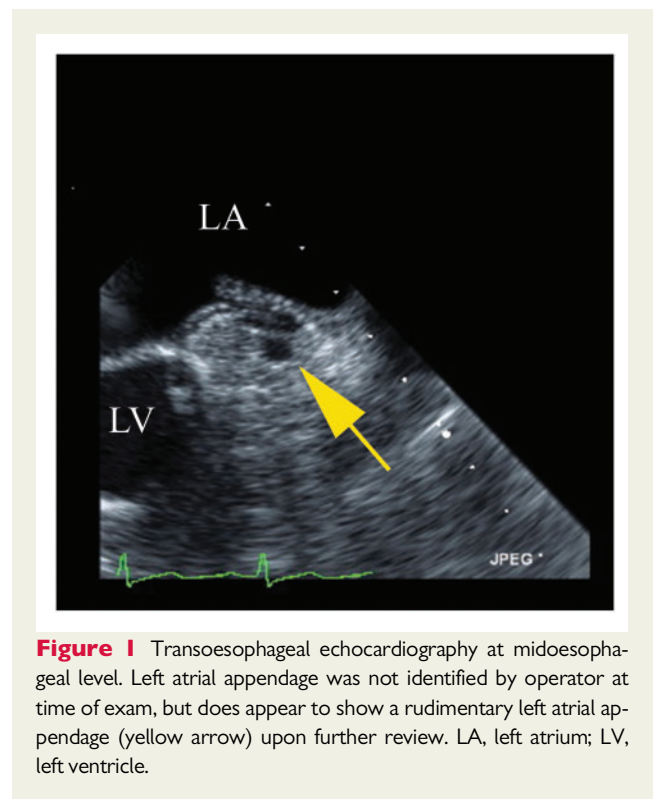


Figure 1 Transoesophageal echocardiography at midesophageal level. Left atrial appendage was not identified by operator at time of exam, but does appear to show a rudimentary left atrial appendage (yellow arrow) upon further review. LA, left atrium; LV, left ventricle.

with rudimentary LAA, anticoagulation decisions should be based on individual risk assessment. Given our patient's recurrent strokes and high CHA₂DS₂-VASc score, he was discharged on rivaroxaban 20 mg daily after a patient-centred discussion.

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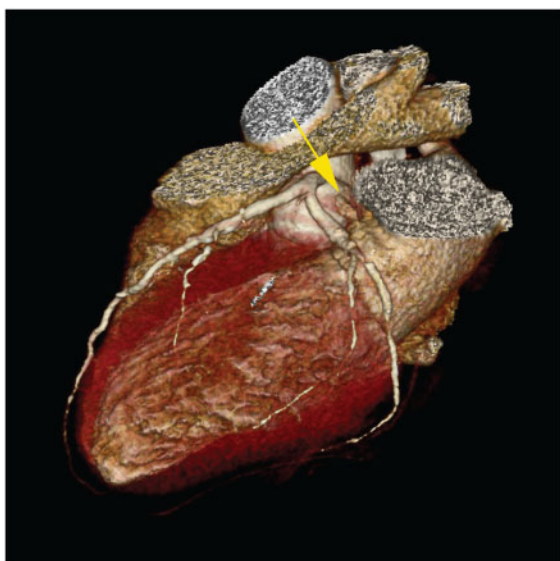


Figure 2 Computed tomography imaging of the heart showing three-dimensional volume rendered imaging sequence demonstrating rudimentary left atrial appendage (yellow arrow). Limited visibility of left atrial appendage in both imaging modalities emphasizes the importance of thorough multimodality assessment of left atrial appendage anatomy.

This case highlights a rare but increasingly identified anatomic variant of LAA, the importance of a multimodality imaging approach for evaluation of its anatomy, and a challenging clinical decision regarding anticoagulation.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

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