

CASE IMAGE

How to deal with a pitfall for left atrial appendix thrombus on CT?

BT'de sol atriyal apendiks trombüsü tuzağından nasıl kurtuluruz?

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A 55-year-old male patient with drug-refractory paroxysmal atrial fibrillation was referred for cardiac computed tomography (CT) for anatomical assessment of left atrium (LA) and pulmonary veins before catheter ablation. His medication included

warfarin, amiodarone, and atorvastatin. His transthoracic echocardiography showed a nondilated left ventricle with mild concentric hypertrophy and no signs of significant valvular pathologies. Transesophageal echocardiography (TEE) showed spontaneous echo contrast in the left atrial appendix (LAA) without any thrombus. Cardiac CT in the early phase showed a dense filling defect in the LAA, which was highly suspicious of thrombus. A delayed scan after 3 min demonstrated contrast filling in the LAA which unequivocally excluded the LAA thrombus (Figure 1, Video 1*).

Thrombi of LA and LAA are the frequent sites of embolic stroke, and the diagnosis of thrombus is of significance due to adequate patient management. TEE is the current gold standard technique for intracardiac thrombus detection. However, it is a semi-invasive method that requires conscious sedation and a skilled specialist for a thorough assessment. Although CT has high sensitivity rates for intracardiac thrombus detection, blood stasis may result in false-positive finding that appears as filling defects in early arterial phase thus leading to misdiagnosis. To overcome this pitfall, a delayed scan can be feasibly used to allow sufficient contrast mixture in potential anatomical locations such as LAA where circulation stasis may occur. Preprocedural evaluation of LA and pulmonary veins and detection of any LAA thrombus are vital before left atrial catheter ablation. Cardiologists and radiologists should be aware of this pitfall that can be easily resolved with delayed CT.

Informed consent was obtained from the patient for the publication of the case image.

*Supplementary video files associated with this article can be found in the online version of the journal.

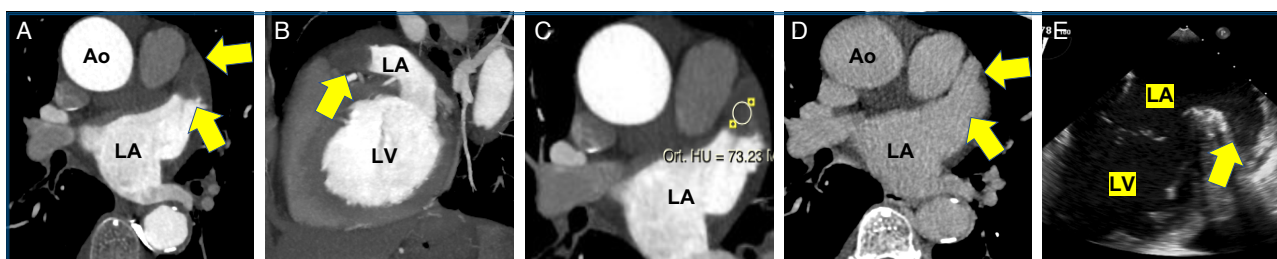


Figure 1. (A) The transversal and (B) sagittal oblique early enhanced, prospective electrocardiogram-gated cardiac computed tomography (CT) (best diastolic phase-70%) showed (C) hypo-attenuated filling defect (yellow arrows) in the left atrial appendix (LAA), which was highly suspicious of thrombus. (D) Delayed enhanced cardiac CT demonstrated normal contrast filling to LAA (yellow arrows), which confidently excluded thrombus. (E) The midesophageal two-chamber transesophageal echocardiography image showed spontaneous echo contrast in the LAA.