

The transverse pericardial sinus: an unpleasant third wheel

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Atrial fibrillation (AF) is one of the most common arrhythmias in clinical practice,¹ and transesophageal echocardiography (TEE) of the left atrial appendage (LAA) is used to rule out intracardiac thrombus formation in the setting of AF.²

A number of masses and pseudomasses can be identified on echocardiography of the LAA, including the pericardial recesses. The transverse pericardial sinus is one of the most notable among them and has important clinical implications.^{3,4}

Epicardial fat between the transverse pericardial sinus and the ascending aorta is a normal finding.⁵ However, its presentation is highly variable, ranging from almost absent to significantly evident.

We present the case of a man with dense epicardial fat in the transverse pericardial sinus mimicking thrombosis of the LAA and showing unusual ultrasound features.

A 65-year-old white man, who complained of dyspnea on exertion, was referred to our echocardiography laboratory (echocardiograph: iE33 xMATRIX, Koninklijke Philips N.V., Eindhoven, the Netherlands). Electrocardiography demonstrated AF, and TEE was performed to exclude LAA thrombosis. An isoechogenic mass was found in the LAA and diagnosed as a thrombus.

Transesophageal echocardiography showed no change after 4 weeks of anticoagulation with dabigatran administered at a dose of 150 mg twice a day. However, a careful review of the TEE results confirmed that the intracavitary mass was actually dense epicardial fat in the transverse pericardial sinus.

The complex anatomy of the pericardial coverings over the left atrium may be confounding on echocardiography. This is because the transverse sinus lies between the anterior

left atrium and posterior wall of the ascending aorta and pulmonary artery, and is filled with fluid as well as occasionally with an echodense fibrinous structure that could be mistaken for a thrombus.

In our case, after rotating the transducer and/or changing its imaging angle, the structure showed features of: 1) an echodense fibrinous mass within the adjacent transverse sinus that could be confused with an LAA thrombus (FIGURE 1A; Supplementary material, *Video S1*); 2) the LAA with the evident transverse sinus (FIGURE 1B); 3) the LAA free of thrombosis (FIGURE 1C; Supplementary material, *Video S2*).

Our case illustrates that the evaluation of TEE in different planes and angulations is of paramount importance in establishing a proper diagnosis. Identifying anatomical landmarks and the judicious use of contrast agents and TEE may prove helpful in this respect.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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HOW TO CITE Pergolini A, Zampi G, Pontillo D, Pino PG. The transverse pericardial sinus: an unpleasant third wheel. *Kardiol Pol.* 2020; 78: 165-166. doi:10.33963/KP.15087

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Received: November 9, 2019.
Revision accepted:
December 5, 2019.
Published online:
December 5, 2019.
Kardiol Pol. 2020; 78 (2): 165-166
doi:10.33963/KP.15087
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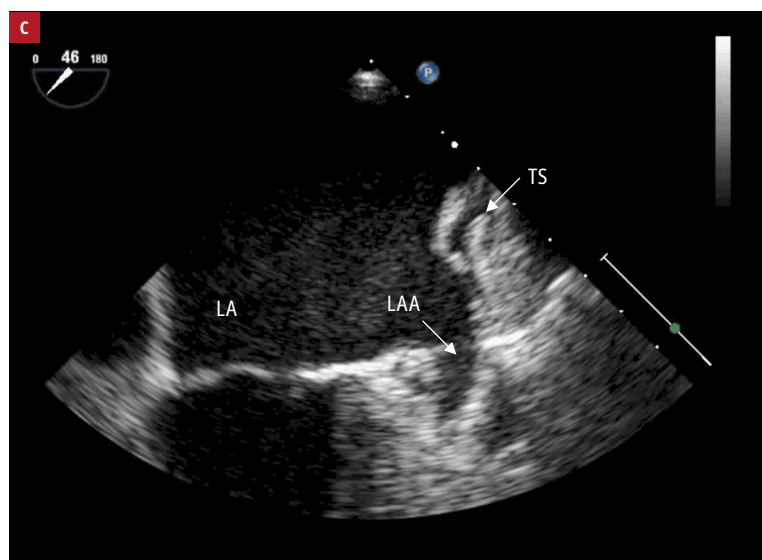
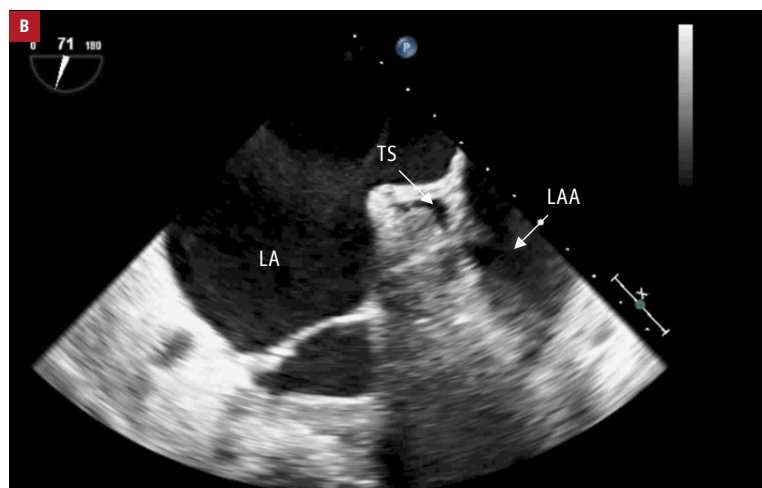
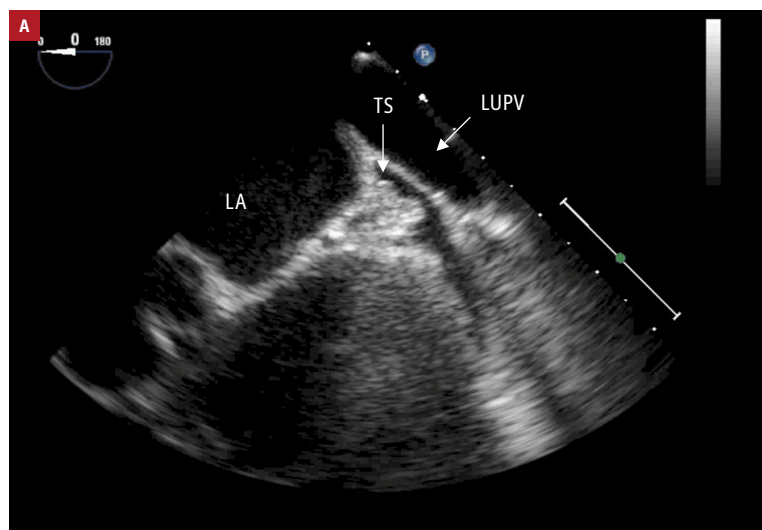


FIGURE 1 Transesophageal echocardiography (mid-esophageal view): **A** – an echodense fibrous structure within the adjacent transverse sinus, mimicking a thrombus in the left atrial appendage; **B** – after rotating the transducer: the left atrial appendage with the evident transverse sinus; **C** – the left atrial appendage without any thrombus
Abbreviations: LA, left atrium; LAA, left atrial appendage; LUPV, left upper pulmonary vein; TS, transverse sinus

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