

A Rare Case of a Decade-Long Device-Related Thrombus with a Unique “Tree-Ring” Structure

A 75-year-old male with a history of atrial fibrillation and stroke presented with a 2-month history of chest pain. He had undergone left atrial appendage closure (LAAC) 10 years earlier. During follow-up post-LAAC, an occluding device-related thrombus (DRT) was identified. The patient received 2 years of warfarin therapy, which he self-discontinued. Three years ago, he developed renal insufficiency and required maintenance dialysis.

Upon the current evaluation, transthoracic echocardiography revealed severe aortic stenosis and a left atrial thrombus (Figure 1A). Transesophageal echocardiography and cardiac computed tomography demonstrated a large thrombus

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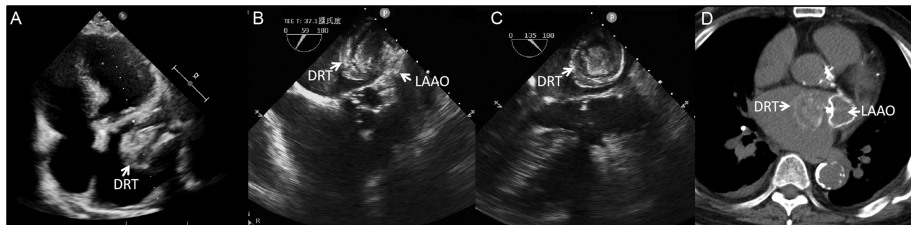


Figure 1. Multimodal imaging characterization of device-related thrombus (DRT). (A) Transthoracic echocardiogram reveals a DRT in the left atrium. (B, C) Transesophageal echocardiographic views demonstrate a DRT adherent to the left atrial appendage occluder (LAAO), showing a unique “tree-ring” structure. (D) Computed tomography confirms the presence of a “tree-ring” DRT adjacent to the LAAO.

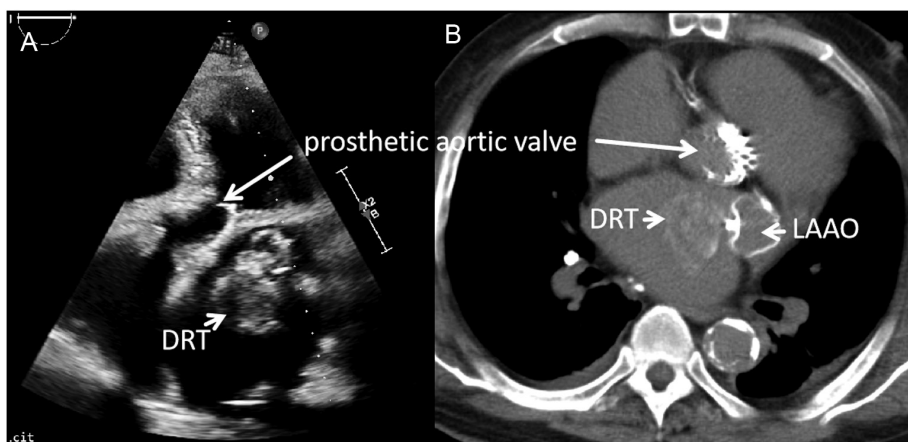


Figure 2. Follow-up (A) transthoracic echocardiogram and (B) computed tomography demonstrate DRT without evidence of progression at 6 months post-transapical aortic valve replacement.

Jieyin Yang¹

Wenjuan Bai²

¹Department of Cardiology, West China Hospital, Sichuan University, Chengdu, China

²Department of Radiology, West China Hospital, Sichuan University, Chengdu, China

Corresponding author:

Wenjuan Bai
✉ littlewhitehx@126.com

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tightly attached to the left atrial appendage occluder (LAAO) (Figure 1B-D). The DRT exhibited a unique “tree-ring” structure.

Due to its long history and high echogenic performance, the DRT was considered to have an organized architecture and low embolic potential. Next, the patient underwent transapical aortic valve replacement without complications. Postoperatively, warfarin therapy was resumed. Over 6 months of follow-up with transthoracic echocardiography and cardiac computed tomography, no thromboembolic events occurred, and the DRT remained stable (Figure 2A and B).

In this extremely rare case, the DRT existed for more than 10 years. Notably, the DRT exhibited an unprecedented “tree-ring” layered pattern on multidimensional imaging. This distinctive architecture likely stemmed from intermittent anticoagulation therapy and chronic hemodialysis for end-stage renal disease.

Informed Consent: Written informed consent was given by the patient.

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