

Beyond the Appendage: Left Atrial Wall Thrombosis in Rheumatic Mitral Stenosis

Bernardo Resende,¹ Tomás Carlos,¹ Rogério Teixeira,^{1,2} Lino Gonçalves³

Unidade Local de Saúde de Coimbra,¹ Coimbra – Portugal

Universidade de Coimbra,² Coimbra – Portugal

Centro Hospitalar e Universitário de Coimbra EPE,³ Coimbra – Portugal

A 61-year-old woman with a history of rheumatic valvular heart disease and permanent atrial fibrillation (AF), chronically anticoagulated with rivaroxaban, presented with acute ischemic stroke and bilateral upper-limb ischemia. Neuroimaging revealed an acute infarction in the right middle cerebral artery territory and a subacute infarction in the left posterior cerebral artery territory (Figure 1A). Doppler ultrasound confirmed arterial occlusion in both upper limbs (Figure 1B).

Transesophageal echocardiography demonstrated marked left atrial (LA) enlargement, dense spontaneous echocardiographic contrast within the left atrial appendage (LAA), and reduced appendage flow velocities, without evidence of an organized thrombus (Figure 1C). The mitral valve exhibited features consistent with chronic rheumatic disease, with an estimated valve area of 1.0 cm² (Figure 1D). Notably, two- and three-dimensional imaging identified a large mural thrombus adherent to the LA wall, extending along the lateral and posterior walls and measuring approximately 4 × 0.8 cm (Figure 1E-F; Supplementary Videos 1-3).

Three months after hospital discharge, the patient remains enrolled in a rehabilitation program, with persistent severe motor and cognitive deficits.

LA mural thrombus is an uncommon finding, reported in approximately 2.7% of anticoagulated patients with AF.^{1,2} Although oral anticoagulation reduces thromboembolic risk, the INVICTUS trial demonstrated superior outcomes with vitamin K antagonists (VKAs) compared with rivaroxaban in patients with rheumatic heart disease–associated AF.^{3,4}

This case highlights a rare but clinically significant presentation of LA mural thrombus and reinforces current recommendations favoring VKA therapy in rheumatic AF. Importantly, it underscores that cardioembolic sources may extend beyond the LAA.

Author Contributions

Conception and design of the research: Resende B, Carlos T, Teixeira R; Acquisition of data, analysis and interpretation of the data e writing of the manuscript: Resende B, Carlos T; critical revision of the manuscript for intellectual content: Teixeira R, Gonçalves L.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Sources of Funding

There were no external funding sources for this study.

Study Association

This study is not associated with any thesis or dissertation work.

Ethics Approval and Consent to Participate

This article does not contain any studies with human participants or animals performed by any of the authors.

Use of Artificial Intelligence

The authors did not use any artificial intelligence tools in the development of this work.

Availability of Research Data

The underlying content of the research text is contained within the manuscript.

Keywords

Echocardiography; Mitral Valve Stenosis; Atrial Fibrillation

Mailing Address: Bernardo Resende •

Unidade Local de Saúde de Coimbra. Praceta Professor Mota Pinto Coimbra.

Postal code: 3004-561. Coimbra – Portugal

E-mail: bernardoresende028@gmail.com

Manuscript received May 5, 2026; revised May 5, 2026; accepted June 6, 2026

Editor responsible for the review: Marcelo Dantas

DOI: <https://doi.org/10.36660/abcimg.20260069i>

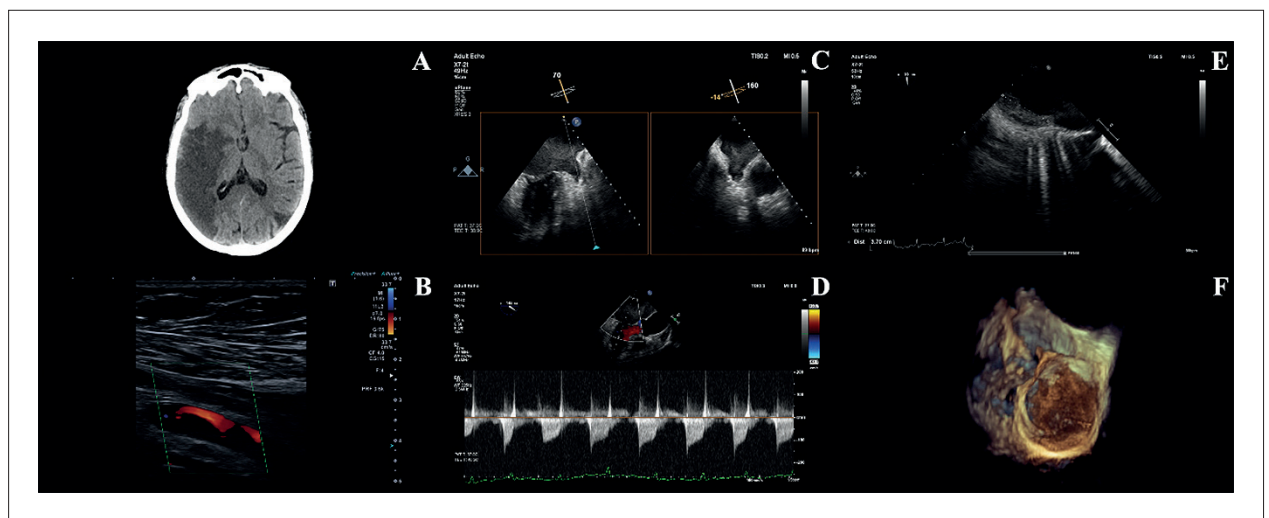


Figure 1 – Multimodality imaging findings; A) Brain computed tomography performed three days after admission showing an evolved cortico-subcortical ischemic lesion in the right temporoparietal region; B) Upper-limb arterial Doppler ultrasound of the right subclavian artery demonstrating arterial occlusion; C) Transesophageal echocardiography showing the LA appendage with marked spontaneous echocardiographic contrast and no organized thrombus; D) Transesophageal echocardiographic assessment of the mitral valve demonstrating features of rheumatic mitral stenosis, with spectral Doppler findings consistent with significant valvular obstruction; E) Two-dimensional transesophageal echocardiographic image demonstrating a large mural thrombus adherent to the lateral and posterior walls of the left atrium, measuring up to 37 mm in its longest axis; F) Live three-dimensional transesophageal echocardiographic imaging of the LA mural thrombus

References

1. Lurie A, Wang J, Hinnegan KJ, McIntyre WF, Belley-Côté EP, Amit G, et al. Prevalence of Left Atrial Thrombus in Anticoagulated Patients with Atrial Fibrillation. *J Am Coll Cardiol*. 2021;77(23):2875-86. doi: 10.1016/j.jacc.2021.04.036.
2. Di Biase L, Santangeli P, Anselmino M, Mohanty P, Salvetti I, Gili S, et al. Does the Left Atrial Appendage Morphology Correlate with the Risk of Stroke in Patients with Atrial Fibrillation? Results from a Multicenter Study. *J Am Coll Cardiol*. 2012;60(6):531-8. doi: 10.1016/j.jacc.2012.04.032.
3. Wolf PA, Abbott RD, Kannel WB. Atrial Fibrillation as an Independent Risk Factor for Stroke: The Framingham Study. *Stroke*. 1991;22(8):983-8. doi: 10.1161/01.str.22.8.983.
4. Connolly SJ, Karthikeyan G, Ntsekhe M, Haileamlak A, El Sayed A, El Chamrawy A, et al. Rivaroxaban in Rheumatic Heart Disease-Associated Atrial Fibrillation. *N Engl J Med*. 2022;387(11):978-88. doi: 10.1056/NEJMoa2209051.

