

Giant Left Atrial Mural Thrombus: Successful Conservative Management with Warfarin – A Case Report Emphasizing Reduced Mortality Compared to Early Surgical Reintervention

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Abstract

Background: Left atrial (LA) mural thrombus is a rare but serious complication after mitral valve (MV) repair, particularly with postoperative atrial fibrillation (POAF), LA enlargement, and altered hemodynamics, even after left atrial appendage (LAA) closure and anticoagulation.

Case Summary: A 51-year-old man developed a giant LA mural thrombus (5.6×2.95 cm) four weeks after MV annuloplasty with Physio II ring, CABG $\times 3$, and AtriClip LAA closure, despite therapeutic apixaban for new-onset POAF. Multidisciplinary heart team discussion favored conservative management over high-risk early re-sternotomy.

Discussion: The patient was bridged from intravenous heparin to warfarin (target INR 2.5–3.5, initially higher). Serial TEE and CT imaging demonstrated progressive resolution, with complete thrombus disappearance at eight months without embolization, major bleeding, or reoperation.

Take-Home Messages

Giant LA mural thrombus can develop rapidly despite LAA closure and DOAC therapy. In high surgical-risk patients who are hemodynamically stable, aggressive anticoagulation with VKA and rigorous multimodality imaging surveillance can achieve complete resolution, avoiding substantial reoperative morbidity.

Keywords: Left atrial mural thrombus; Giant left atrial thrombus; Mitral valve repair/annuloplasty; Coronary artery bypass grafting; Left atrial appendage clip/closure; Direct oral anticoagulant; Apixaban; Warfarin; Conservative management; Serial imaging; Case report; Multidisciplinary heart team

Case Presentation

A 51-year-old man with hyperlipidemia, heavy tobacco use, and family history of premature coronary disease presented with NSTEMI. Coronary angiography showed severe multivessel disease. He underwent MV repair (30 mm Physio II annuloplasty ring for severe mitral regurgitation due to annular dilation), CABG $\times$ 3 (LIMA to LAD/diagonal, SVG to PDA), and prophylactic 45 mm AtriClip LAA closure. Intraoperative TEE showed LA diameter 5.0 cm and EF 45%. He was discharged on postoperative day 6 on amiodarone, DAPT, beta-blocker, and statin.

Three weeks later, asymptomatic atrial fibrillation was noted. Apixaban was started. Pre-cardioversion TEE revealed a moderately dilated LA (51.4 mm) with a giant mural thrombus (5.6×2.95 cm) attached to the septal wall, moderate residual mitral regurgitation, and moderate-to-severe tricuspid regurgitation. CTA confirmed the thrombus without pulmonary embolism. Cardioversion was aborted.

After heart team discussion involving cardiology, cardiothoracic surgery, and valvular specialists, conservative management was chosen due to prohibitive reoperative risks (recent sternotomy, patent LIMA grafts, bleeding risk on DAPT, adhesions). The patient was bridged from therapeutic IV heparin to warfarin (target INR 2.5–3.5, initially higher). Rate control was maintained with beta-blocker.

Serial imaging showed progressive resolution: TEE at three months demonstrated ~80% reduction in thrombus burden; CT at eight months confirmed complete thrombus resolution. The patient remained asymptomatic with no thromboembolic or bleeding events.

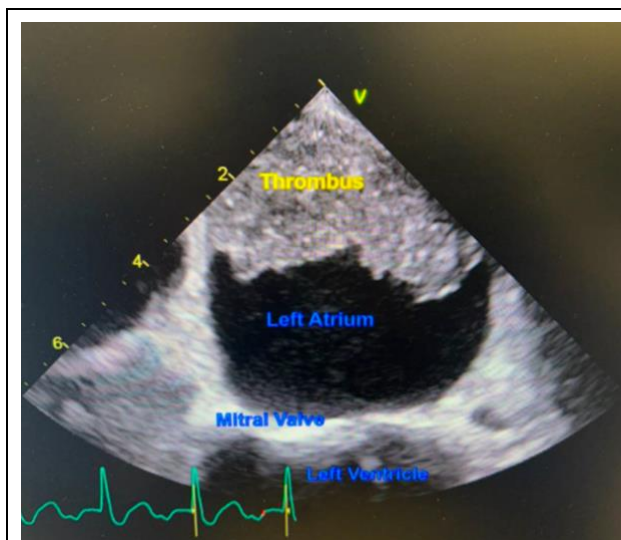


Figure 1

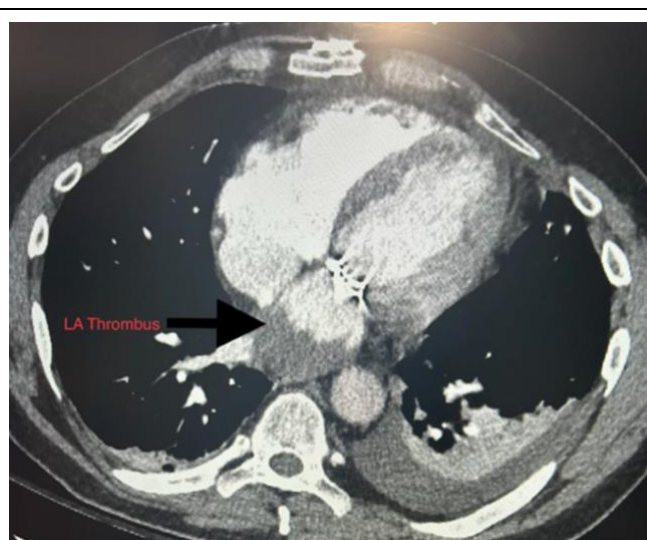


Figure 2: TEE showing large LA mural thrombus.

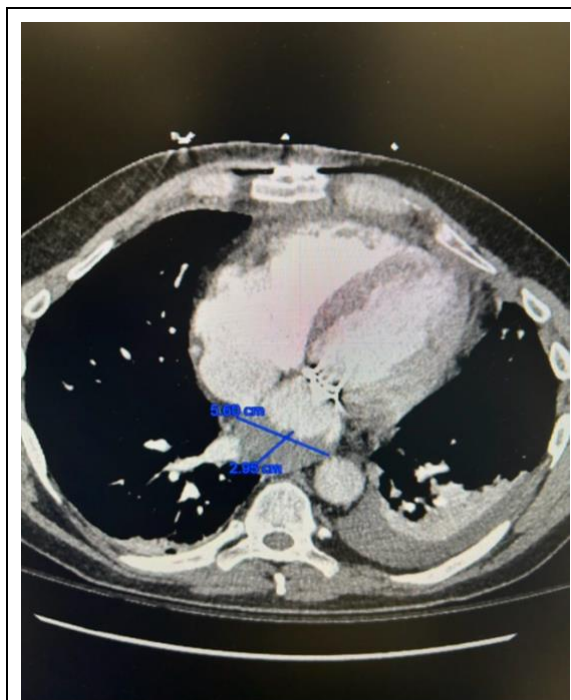


Figure 3: CTA chest demonstrating LA thrombus.

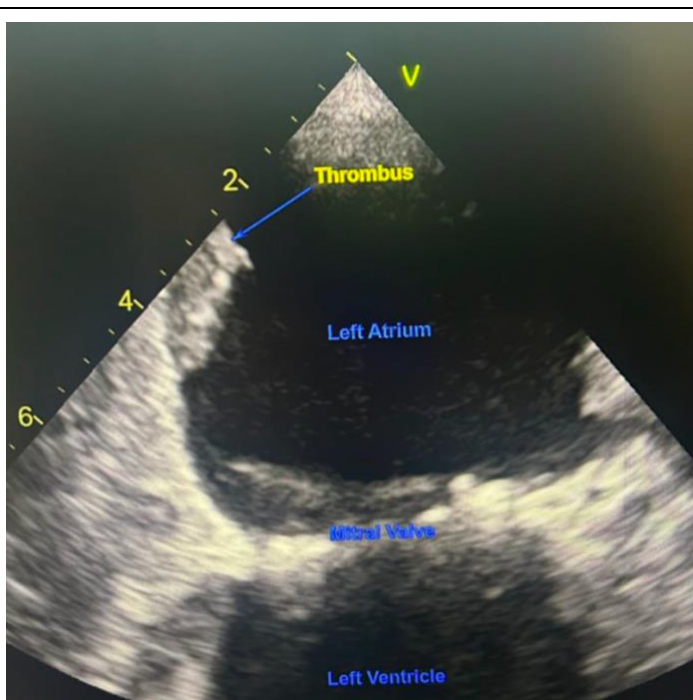


Figure 4: LA thrombus measuring 5.6 × 2.95 cm.

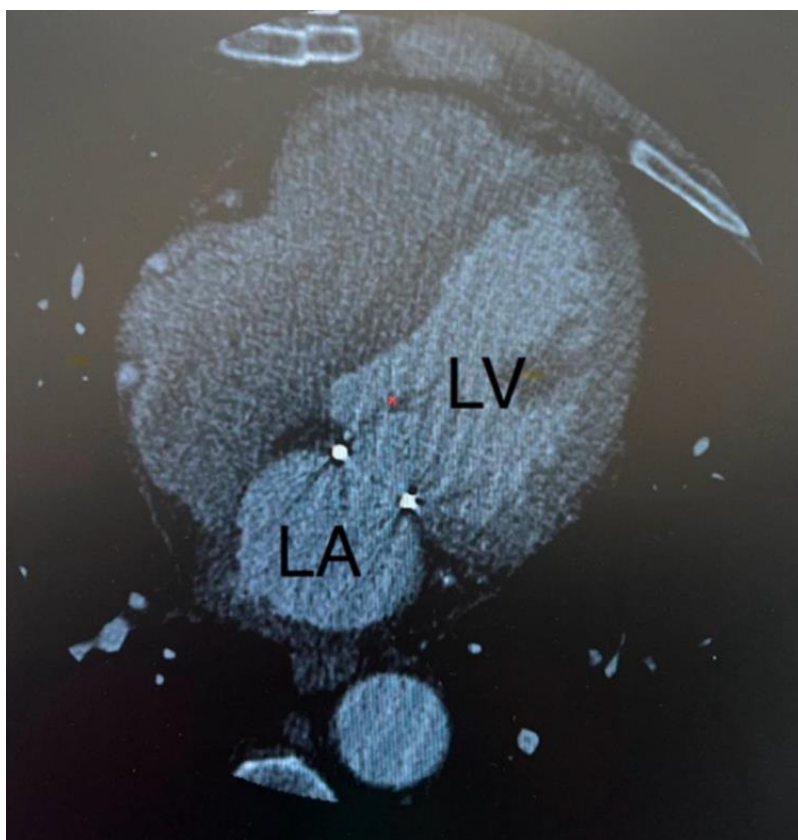


Figure 5: Repeat TEE at three months showing decreased clot burden; CT at eight months showing complete resolution.

Discussion

This case illustrates one of the most rapid and largest LA mural thrombi reported after MV repair and CABG, developing within four weeks despite LAA clip placement and therapeutic apixaban. It highlights several important cardiology learning points.

First, MV annuloplasty corrects regurgitation but does not immediately normalize LA hemodynamics. Elimination of high-velocity regurgitant jets can lead to new regions of stasis in an enlarged LA, especially along the septal wall, despite successful repair [1,5]. Second, new-onset POAF remains a major driver of LA thrombus formation in the early postoperative period, even with LAA exclusion [6]. While the AtriClip provides excellent mechanical occlusion, it does not protect against mural thrombus in the LA body [10,11]. Third, this case demonstrates the feasibility of conservative management in carefully selected patients. Early re-sternotomy carries significantly elevated risks including LIMA graft injury, bleeding, sternal infection, and higher mortality [16,17]. In hemodynamically stable patients without mobile or obstructive thrombus features, aggressive anticoagulation (heparin bridge to VKA with higher initial INR target) combined with serial TEE and CT surveillance can lead to complete resolution, as seen here at eight months.

This approach aligns with heart team principles emphasized in current valvular and atrial fibrillation guidelines [22,23]. It also underscores the value of pre-cardioversion TEE even after LAA closure and DOAC therapy.

Learning Points for Cardiology Practice

- Maintain high suspicion for LA mural thrombus in the early post-MV repair period, particularly with POAF and LA enlargement.
- Multidisciplinary decision-making is critical when balancing thromboembolic risk against reoperative morbidity.
- Serial multimodality imaging is essential to guide duration of intensified anticoagulation and confirm resolution.

Limitations: Single case report; management remains individualized given the rarity of giant LA mural thrombus.

Conclusions / Take-Home Messages

Giant LA mural thrombus can form rapidly after MV repair despite LAA closure and DOAC therapy. In high surgical-risk but hemodynamically stable patients, medical management with heparin bridge to warfarin and rigorous serial imaging surveillance offers a safe, effective alternative to early reoperation, achieving complete resolution without adverse events. This strategy highlights the importance of heart team collaboration and vigilant imaging in complex post-cardiac surgery scenarios.

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Author's Contributions

B.W. (Brandon Willis, MD) collected and synthesized clinical data, performed the literature review, drafted the initial and revised manuscripts, and coordinated imaging figure descriptions.

Z.J. (Zachariah Jensen, MD) contributed to clinical data verification, literature synthesis on management comparisons, and critical manuscript review.

P.C. (Prasad Chalasani, MD) provided overall clinical oversight, heart team leadership, critical revision for important intellectual content, and final approval of the version to be published.

All authors read and approved the final manuscript and agree to be accountable for all aspects of the work.

Conflicts of Interest

The authors declare that they have no conflicts of interest, financial or otherwise, related to the content of this case report.

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Patient Consent and Ethical Considerations

Informed consent for publication of this fully de-identified case report (including clinical details, timeline, and imaging descriptions) was obtained from the patient in accordance with institutional policies and applicable regulations. No identifying information (name, date of birth, medical record numbers, or recognizable images) is included. The report adheres to CARE guidelines for case reports.

Data Availability

All relevant de-identified clinical data supporting the findings of this report are contained within the manuscript and its references. Additional details may be available from the corresponding author upon reasonable request, subject to privacy and institutional review board considerations.

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