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A stone in the heart's keystone

Ena Kurtić[1]*, Antonio Bulum[2], Matija Marković[1], Valentina Obadić[1], Ivica Premužić Meštrović[1], Vlado-Vlaho Ćubela[1], Tomislav Letilović[1]

[1]University Hospital "Merkur", Zagreb, Croatia
[2]Dubrava University Hospital, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Ena Kurtić, Klinička bolnica Merkur, Zajčeva 19, HR-10000 Zagreb, Croatia. / Phone: +385-91-1666-116 / E-mail: ena.kurtic88@gmail.com

ORCID: Ena Kurtić, https://orcid.org/0000-0001-6673-6510 • Antonio Bulum, https://orcid.org/0000-0002-0321-5088
Matija Marković, https://orcid.org/0000-0002-2852-3730 • Valentina Obadić, https://orcid.org/0000-0001-9915-5122
Ivica Premužić Meštrović, https://orcid.org/0000-0002-2592-8302 • Vlado-Vlaho Ćubela, https://orcid.org/0000-0002-5664-1873
Tomislav Letilović, https://orcid.org/0000-0003-1229-7983

Introduction: Cardiac calcified amorphous tumor (CAT) is a rare, non-neoplastic intracavitary mass first described in 1997. Histologically, it consists of calcified nodules within an amorphous fibrinous matrix. It is most often found on the mitral annulus and is associated with mitral annular calcification and end-stage renal disease. It can mimic myxoma, fibroelastoma, thrombus or vegetation. Surgical excision is considered the standard of care, mainly because of embolic potential, yet the optimal approach to asymptomatic, immobile lesions remains undefined.[1-6]

Case report: We present a 74-year-old woman in whom CAT was suspected on echocardiography during workup for coronary artery disease. Multimodality imaging with computed tomography and cardiac magnetic resonance confirmed a sizeable, broad-based calcified mass of the aortomitral continuity extending onto the anterior mitral leaflet, with imaging features consistent with CAT and only mild to moderate functional impact on the mitral valve. The patient had no embolic events. The multidisciplinary heart team opted for conservative management with regular clinical and imaging follow-up.

Conclusion: Three arguments guided the decision. First, imaging showed an avascular, calcified, non-enhancing mass, arguing against neoplasm and thrombus, so surgery was not required for diagnosis. Second, embolic risk in CAT is driven primarily by lesion mobility, and a broad-based, sessile mass carries low risk. Third, and decisively, the aortomitral continuity is part of the cardiac fibrous skeleton, adjacent to the membranous septum and the bundle of His. Resection of a large mass involving the anterior mitral leaflet would require decalcification of the intervalvular fibrous body, almost certainly mean mitral valve replacement, possibly aortic valve intervention, and carry a risk of atrioventricular block and aorto-ventricular discontinuity. With only mild to moderate valvular dysfunction, the risk of surgery outweighed the risk of the mass itself. CAT and caseous calcification of the mitral annulus likely form a dynamic spectrum, and regression under antiplatelet therapy has been reported. In immobile lesions without embolic events, structured surveillance is a justified alternative to surgery, regardless of lesion size, with management individualized by the heart team.

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