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Incidental left ventricular apical papillary fibroelastoma: unusual localization of a rare cardiac tumour

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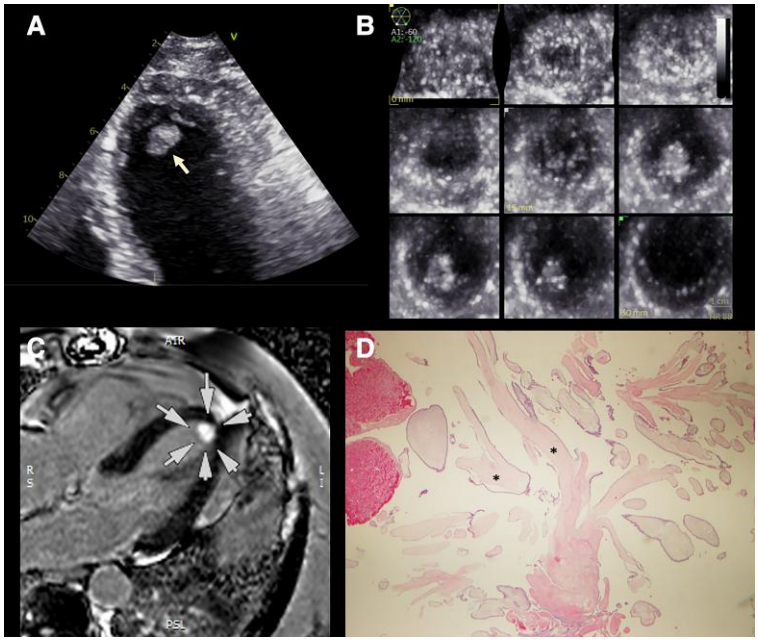

Figure 1 (*A*) Transthoracic echocardiography (apical four-chamber view). Note the structure located at the tip of the left ventricular apex (arrow) showing increased echogenicity; (*B*) transthoracic echocardiography three-dimensional learning vector quantization (3D-LVQ) imaging. The location of the mass relative to the left ventricular myocardium can be further appreciated; (*C*) late gadolinium enhancement cardiac magnetic resonance for additional tissue characterization (four-chamber view). Intense late gadolinium enhancement is observed at the level of the mass (arrows), while sparing the surrounding left ventricular myocardium; (*D*) histopathology—HE (×4): multiple, branching fronds (*) of paucicellular, avascular fibroelastic tissue lined by a single layer of endocardium.

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Case summary

Papillary fibroelastomas (PFEs) are currently considered the most common type of benign heart tumours.[1] These are generally diagnosed as incidental findings on cardiac imaging, typically involving the left-sided heart valves.[2–3] We here report the case of an 81-year-old male who was found to have an incidental apical left ventricular (LV) mass on routine transthoracic echocardiography (TTE), later confirmed to be a single PFE on histopathology post-surgical removal.

Case presentation

His past history was notable for a surgical aortic valve replacement with a biological valve due to severe symptomatic aortic stenosis (9 years prior to presentation), well-controlled hypertension, and diabetes mellitus. He was asymptomatic and came to our outpatient clinic for the routine annual TTE. Other than a soft systolic murmur, clinical examination was unremarkable. The exam was mostly notable for a mobile, ovoid, ~9 × 11 mm mass, located at the tip of the LV apex (*Figure 1A and B*; Supplementary material online, *Videos S1–3*). The prosthetic aortic valve was normally functioning and no segmental wall motion abnormalities (SMWA) were noted. The cardiac magnetic resonance (CMR) confirmed the LV apical mass, found to be isointense in T_1 and T_2 hyperintense (Supplementary material online, *Figures S1* and *S2*), with late gadolinium enhancement (LGE) that spared the centre of the mass and surrounding myocardium (*Figure 1C*; Supplementary material online, *Figure S3* and *Videos S4* and *S5*).

The 'Heart Team' discussed the possible differential diagnosis, including heart tumours (primary or secondary) and non-neoplastic masses (namely, a LV thrombus). The clinical presentation and multimodality imaging findings (e.g. absence of SMWA and LGE pattern) strongly argued against thrombus. Despite prior cardiac surgery, surgical risk was deemed low (e.g. EuroSCORE II 2.7%). Surgery was, thus, favoured, considering that a tumour with potential cardioembolic risk was most likely. Accordingly, the patient underwent surgical mass resection, through LV apical ventriculotomy guided by intraoperative transoesophageal echocardiography. The mobile, friable-looking, mass was totally excised, including the pedicle through which it attached to the LV apex. The definite diagnosis of PFE was confirmed on histopathology (*Figure 1D*; Supplementary material online, *Figure S4*). The patient was discharged a week later on anticoagulation (for *de novo* atrial fibrillation), plus his usual drug regimen. We plan on scheduling an annual TTE for follow-up, which, thus far, has been uneventful at 1 year.

Here, we report the case of an incidental PFE with an unusual LV apical localization. This case highlights the crucial role of imaging in the fortuitous diagnosis of heart tumours, as well as the role of multimodality imaging for the non-invasive evaluation of intracardiac masses. The atypical presentation should not detain one from reaching the diagnosis and, thus, offer the best course of treatment to the patient and to avoid dreadful complications.

Supplementary material

Supplementary material is available at *European Heart Journal – Case Reports*.

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None.

Slide sets: A fully edited slide set detailing this case and suitable for local presentation is available online as Supplementary data.

Consent: The patient verbally consented to the publication of his medical case medical case in a peer-reviewed medical journal. The authors of this article (B.R., S.M., M.M., and J.A.), who actively participated in the decision process and management, obtained the written informed consent from the patient, in accordance with COPE guidelines.

Conflict of interest: B.R. is a Junior Editor for EHJ-Case Reports. The other authors have no conflict of interest.

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Ethics approval: The authors declare that figures and videos within the article, including supplementary material, do not allow the identification of the patient. Dates were omitted to comply with confidentiality. This case report was exempt from ethics' board approval.

Data availability

The data underlying this article are available in the article and in its online supplementary material.

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