

Images in Cardiovascular Disease



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Conflict of Interest

The authors have no financial conflicts of interest.

Author Contributions

Conceptualization: Dagher O; Data curation: Dagher O; Supervision: Novick RJ; Validation: Novick RJ; Writing - original draft: Dagher O; Writing - review & editing: Dagher O, Novick RJ.

Left Atrial “Tumor Blush” Supplied by the Right Coronary Artery

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A 50-year-old woman with atrial fibrillation was investigated for a one-month history of worsening shortness of breath and lower limb edema. A chest computed tomography and transthoracic echocardiogram revealed an 8 × 9 cm left atrial mass delineated by a peripheral calcified rim that was attached to the interatrial septum (**Figure 1; Movie 1**). A coronary angiogram was performed prior to planned urgent resection. It revealed non-flow limiting lesions in the coronary arteries and demonstrated a hypervascular “tumor blush” supplied by a left atrial branch originating from the proximal right coronary artery (**Figure 2; Movie 2**).

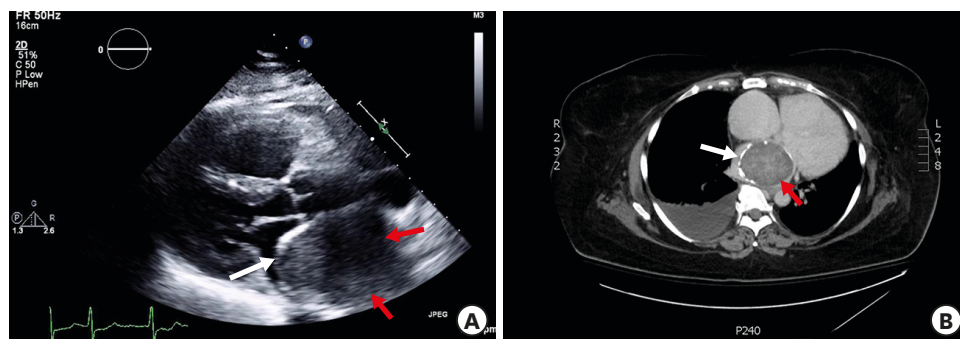


Figure 1. (A) TTE in parasternal long-axis view and (B) pre contrast transverse CT section demonstrating a large soft-tissue mass (red arrows) that virtually fills the entire left atrium, causing it to severely dilate. The presumed myxoma also obstructs left atrial inflow through the pulmonary veins. As a result, the right ventricular cavity is moderately dilated as a way to adapt to the volume and retrograde pressure overload. Note the peripheral calcified rim delineating the tumor (white arrow), a feature that is rarely described in atrial myxomas. CT: computed tomography, TTE: transthoracic echocardiogram.

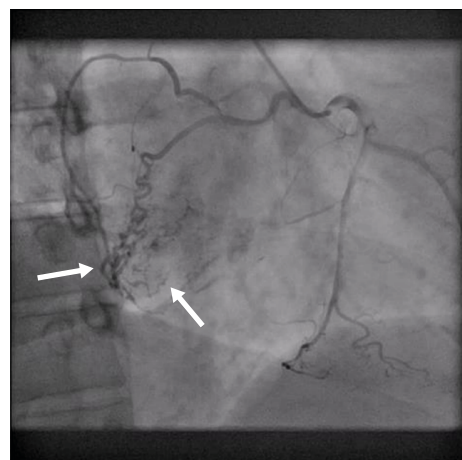


Figure 2. Selective right coronary angiogram showing enhancement of the tumoral mass (white arrows) located in the left atrium.

Intraoperatively, dense adherence of the mass to the left atrial wall, roof and interatrial septum was noted. *En bloc* resection was performed using a vertical trans-septal approach via the right atrium. The patient recovered uneventfully and her heart failure symptoms quickly resolved. Pathological analysis confirmed the diagnosis of myxoma.

Myxomas account for 30%–50% of benign primary cardiac tumors and usually affect middle-aged women.¹⁾ They are most often found in the left atrium (75%),²⁾ in which case, neovascularization typically originates from the left coronary artery.³⁾ Unusual locations include the right ventricle,⁴⁾ the left atrial appendage⁵⁾ and attachment to the coumadin ridge.⁵⁾ On computed tomography and echocardiography, myxomas appear as a spherical mass with heterogenous attenuation or echogenicity, and occasional specked foci of internal calcifications.²⁾ However, the presence of a calcified peripheral rim, such as seen in our case, is rarely described. Coronary angiogram is not part of the routine preoperative assessment, and its utility should be evaluated based on patients-specific factors. It is generally used to rule-out subclinical coronary artery disease as per institutional policies. In addition, this modality best demonstrates the neovascular network of the tumor. On one hand, it helps differentiate the myxoma from an intracardiac thrombus.³⁾ On the other hand, it is pertinent for surgical planning if ligation of the blood supply is indicated to prevent a steal phenomenon.³⁾

SUPPLEMENTARY MATERIALS

Movie 1

Transthoracic echocardiogram in a parasternal long-axis view demonstrating a large soft-tissue mass (atrial myxoma) that virtually fills the entire left atrium.

[Click here to view](#)

Movie 2

Selective right coronary angiogram showing enhancement of the tumoral mass located in the left atrium.

[Click here to view](#)

REFERENCES

1. Hoffmeier A, Sindermann JR, Scheld HH, Martens S. Cardiac tumors--diagnosis and surgical treatment. *Dtsch Arztebl Int* 2014;111:205-11.
[PUBMED](#) | [CROSSREF](#)
2. McAllister BJ. Multi modality imaging features of cardiac myxoma. *J Cardiovasc Imaging* 2020;28:235-43.
[PUBMED](#) | [CROSSREF](#)
3. Omar HR. The value of coronary angiography in the work-up of atrial myxomas. *Herz* 2015;40:442-6.
[PUBMED](#) | [CROSSREF](#)
4. Nina VJ, Silva NA, Gaspar SF, et al. Atypical size and location of a right atrial myxoma: a case report. *J Med Case Reports* 2012;6:26.
[PUBMED](#) | [CROSSREF](#)
5. Moustafa S, Patton DJ, Connelly MS, Alvarez N, Prieur T, Mookadam F. An atypical case of left atrial myxoma. *Rev Port Cardiol* 2015;34:75-7.
[PUBMED](#) | [CROSSREF](#)