

Unusual Atrial Myxoma with Neovascularization Associated with Fistula to Right Atrium

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An 80-year-old woman was evaluated for the first-detected atrial fibrillation found during a regular health check. Transthoracic echocardiography revealed a 30 x 40 mm, pedunculated, inhomogeneous left atrial (LA) mass attached to the interatrial septum (Fig. 1, asterisk) with indeterminate blood flow inside. Short-axis T2-weighted MRI with fat suppression (acquired on a MAGNETOM Skyra 3T) showed the mass attached to the fossa ovalis with strongly hyperintense signal (Fig. 2), and isointense to myocardium on noncontrast T1-weighted images without (Fig. 3A) and with fat suppression (Fig. 3B). Perfusion imaging nicely demonstrated the rapid contrast uptake via the cluster of tortuous vascular channels within the tumor (Fig. 4, asterisk).

A fistula to the right atrium (RA) was suspected due to the presence of contrast leakage from the tumor into the RA cavity. Preoperative coronary angiography (Fig. 5) confirmed the large, tortuous feeding artery to the mass arising from the left circumflex artery with fistula to RA (calculated pulmonary-systemic shunt ratio 1.2:1).

The patient successfully underwent elective tumor removal with fistula closure. A gross specimen of the bisected tumor showed a large, well-formed intratumoral vessel measuring 8 mm in diameter (Fig. 6, arrow) with a diffuse area of internal hemorrhage. Histology confirmed the diagnosis of myxoma with abundant delicate blood vessel formation.

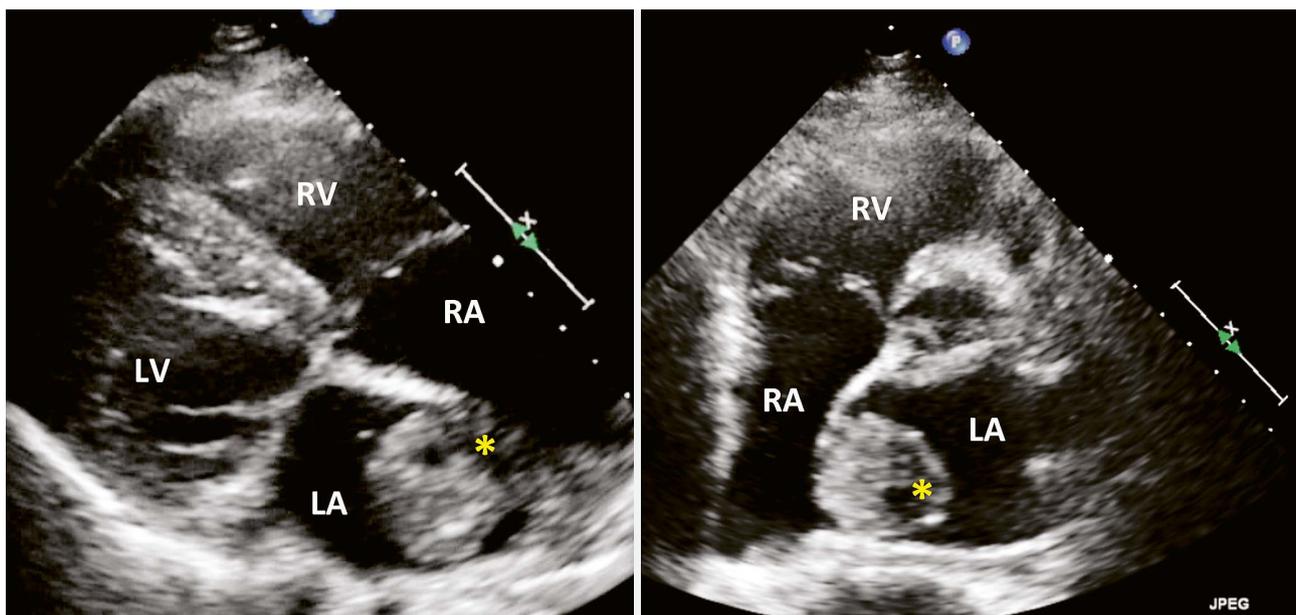


Figure 1:
Transthoracic echocardiography
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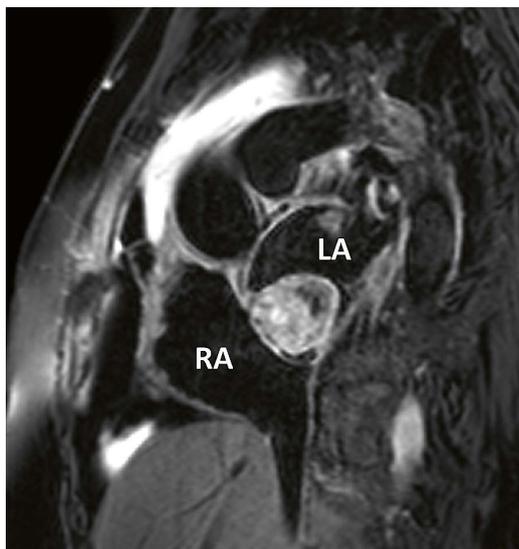


Figure 2:
Short-axis T2-weighted TSE with fat suppression;
Imaging parameters:
FOV 276 x 340 mm, slice thickness 5 mm,
TR 1860 ms, TE 62 ms, matrix 166 x 256,
pixel resolution of 1.66 x 1.33 mm, TA 11.2 s.



Figure 3A and 3B:
Short-axis T1-weighted TSE;
Imaging parameters:
FOV 276 x 340 mm, slice thickness 5 mm,
TR 1320 ms, TE 29 ms, matrix 188 x 256,
pixel resolution of 1.47 x 1.33 mm, TA 13.2 s.
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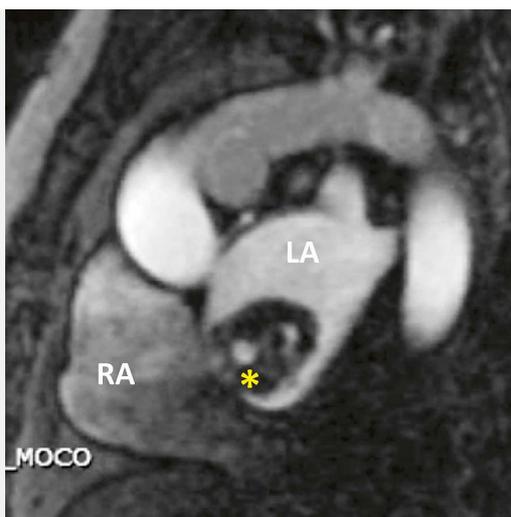
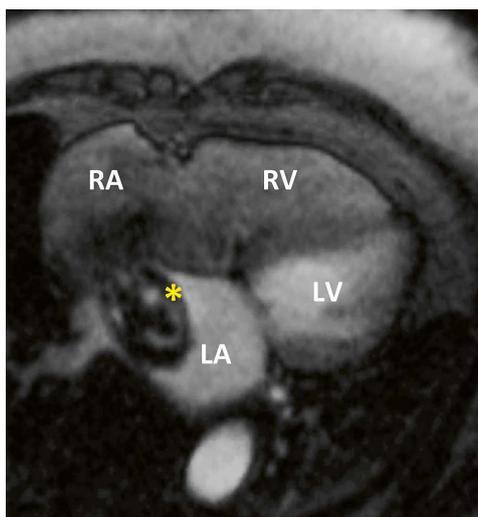


Figure 4:
Perfusion-weighted imaging (tfl2d) dynamic scan with motion correction in 4-chamber view;
Imaging parameters:
FOV 300 x 360 mm, slice thickness 10 mm,
TR 164.8 ms, TE 1.1 ms, TI 100 ms, matrix 146 x 256, pixel resolution of 2.05 x 1.4 mm.

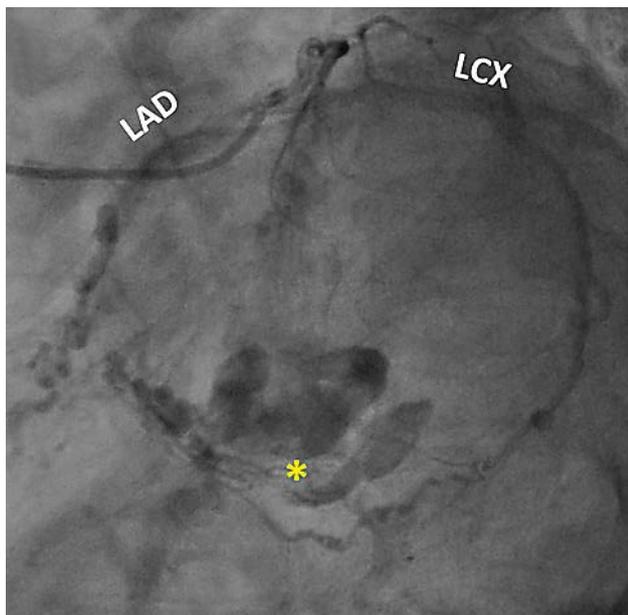


Figure 5:
Angiography
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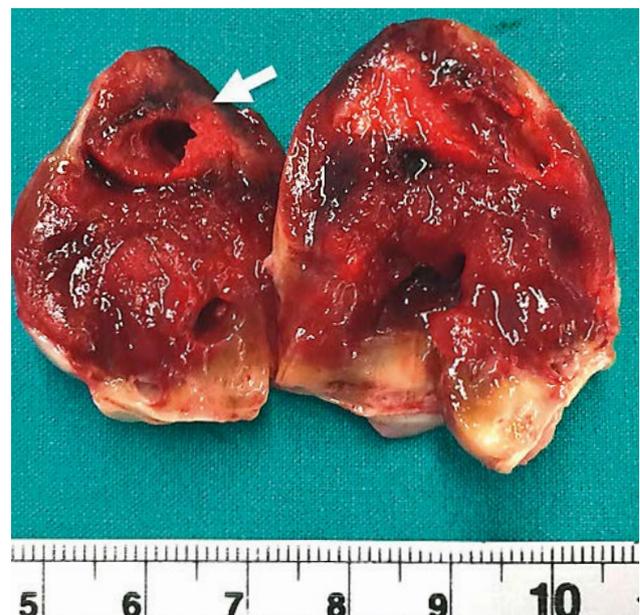


Figure 6:
Bisected tumor

Conclusion

This is the first case report of hypervascularized myxoma associated with fistula to RA that highlights the role of multimodality imaging in preoperative assessment. A high-performance CMR scanner can provide the high-resolution perfusion images, necessary for contemplating the surgical technique.

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Reference:

- 1 Huntrakul A, Numchaisiri J, Buddhari W, Chattranukulchai P. Unusual atrial myxoma with neovascularization associated with fistula to right atrium. *Eur Heart J.* 2017 Oct 14;38(39):2971.