Paradoxical embolism in a patient with a large tricuspid myxoma and patent foramen ovale

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A 61-year-old man with an uneventful medical history presented with two transient ischaemic attacks (TIA) with bulbar and peripheral deficit. Transthoracic and transoesophageal echocardiography revealed a patent foramen ovale (PFO) and a large, lobulated, pedunculated, non-calcified, and heterogenic mass attached to the septal tricuspid leaflet (Panels 1–3) with important mobility.

MRI suggested a myxoma, being isointense on T1-weighted turbo spin echo (TSE), iso-hyperintense on T2-weighted TSE, and hypointense on spoiled gradient echo. First-pass perfusion showed a heterogeneous and hypoperfused enhancement pattern, while contrast-enhanced inversion recovery images showed diffuse hyperenhancement (Panels 4 and 5). Carotid echo-Doppler, Holter monitoring, and a normally contracting left atrial appendage devoid of thrombus excluded other aetiologies for TIA. Cardiac surgery was performed with PFO closure and tumour excision, including the peduncle and the middle part of the septal leaflet.

Biopsy showed a firm, multilobular, and smooth-surfaced tumour. Cut-sections revealed a white-yellowish, collagen-rich myxoid tissue, containing several vascular caverns and focal hemorrhages (Panel 6). Histological sections confirmed the diagnosis of a myxoma, containing multiple vascular structures (Panel 7) as well as spindle and stellate cells with pale ovoid nuclei in a loose myxoid stroma (Panel 8A), some arranged as primitive vessels (Panel 8B). Immunohistochemistry showed stellar and fusiform cells positive for S100 (Panel 8B and C) and CD34 (Panel 8D).

Myxoma originating from the tricuspid valve is exceptional and only 2% of the cases are associated with a PFO. We presented the first case of a tricuspid myxoma associated with a PFO and paradoxical embolism.

Panel 1: Transthoracic echocardiographic apical four-chamber view showing a myxoma attached to the septal leaflet of the tricuspid valve by its peduncle.
Panel 2: Transoesophageal echocardiographic transgastric visualization of the myxoma clearly showing the heterogenous aspect of the tumour.
Panel 3: Transthoracic echocardiographic 3D image of the myxoma attached to the septal leaflet by its peduncle, visualized in the plain of tricuspid, mitral, and aortic valve.
Panel 4: Cardiac MRI. On balanced SSFP images, the tumour moved completely into the right ventricle during diastole along with the valve.
Panel 5: Cardiac MRI. On T2 TSE, the tumour is iso-hyperintense to the signal of myocardial tissue.
Panel 6: Cut-section, showing pearly white-yellowish, fleshy myxoid tissue with a cavernous aspect, punctuated by small dark-red hemorrhage. The peduncle is attached.
Panel 7: Haematoxylin–eosin (HE) stain showing vascular caverns (asterisks) and pale myxoid areas (arrow).
Panel 8. (A) Alcian blue stain, showing stroma containing large amounts of proteoglycans (blue), matching the pale myxoid areas in the HE stain. Note the prominent pale ovoid nuclei (pink). (B) S100-positive stellar myxoma cells (brown), arranged in a vasiformative ring structure in the centre of the image. (C) S100+ myxoma cells (arrowhead) beside S100-endothelial cells (arrow) bordering the vascular lumen. (D) Fusiform myxoma cells (arrow) and endotheliocytes (arrowhead) both expressing the endothelial marker CD34.

Conflict of interest: none declared.

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