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Acute embolic stroke secondary to prolapsing left atrial mass in a patient with synovial sarcoma

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ESC curriculum 2.2 Echocardiography • 6.8 Cardiac tumours

Case description

A 32-year-old man presented with left facial droop and left arm weakness of 50 min duration. He had been diagnosed with synovial sarcoma (SS) of the right lung (*Figure 1A*) 7 months before. A subacute cerebellar infarct and a left atrium (LA) mass were also identified at the time. He had completed nine cycles of chemotherapy.

Our patient received tenecteplase after head computed tomography (CT) ruled out haemorrhagic stroke. Brain magnetic resonance imaging the following morning demonstrated infarctions in the frontal, parietal, and right cerebellar regions (*Figure 1B*). Transthoracic echocardiogram (TTE) and cardiac CT revealed an elongated LA mass prolapsing through the mitral valve into the left ventricle (*Figure 1C* and *D*). On Day 4, our patient underwent surgical resection via sternotomy under cardiopulmonary bypass to prevent further embolic events. The tumour originated from the right superior pulmonary vein (RSPV) (*Figure 1E*) and consisted of necrotic and partially hyalinized fibrous tissue (*Figure 1F*). Postprocedural TTE showed moderate mitral regurgitation. Our patient recovered well, did not have lingering neurologic deficits, and was discharged home on Day 11. Seven weeks later, elective resection of the lung mass showed viable malignant cells involving the margin at the RSPV. By Month 5, he completed adjuvant radiotherapy. No residual disease was noted on positron emission tomography.

Cardiac metastases may arise via haematogenous spread, lymphatic spread, transvenous extension, or direct extension.[1] Synovial sarcoma, a rare mesenchymal malignancy and a subtype of soft tissue sarcoma, may very rarely metastasize to the heart. The unclear margin at the RSPV, the site of origin of the LA tumour, evidences direct heart invasion. Left atrial tumours may embolize by releasing tumour fragments or thrombi.[2] There are no high-quality data regarding the prevention of stroke in patients with LA tumours. In these cases, systemic anticoagulation or resection may be beneficial.[3]

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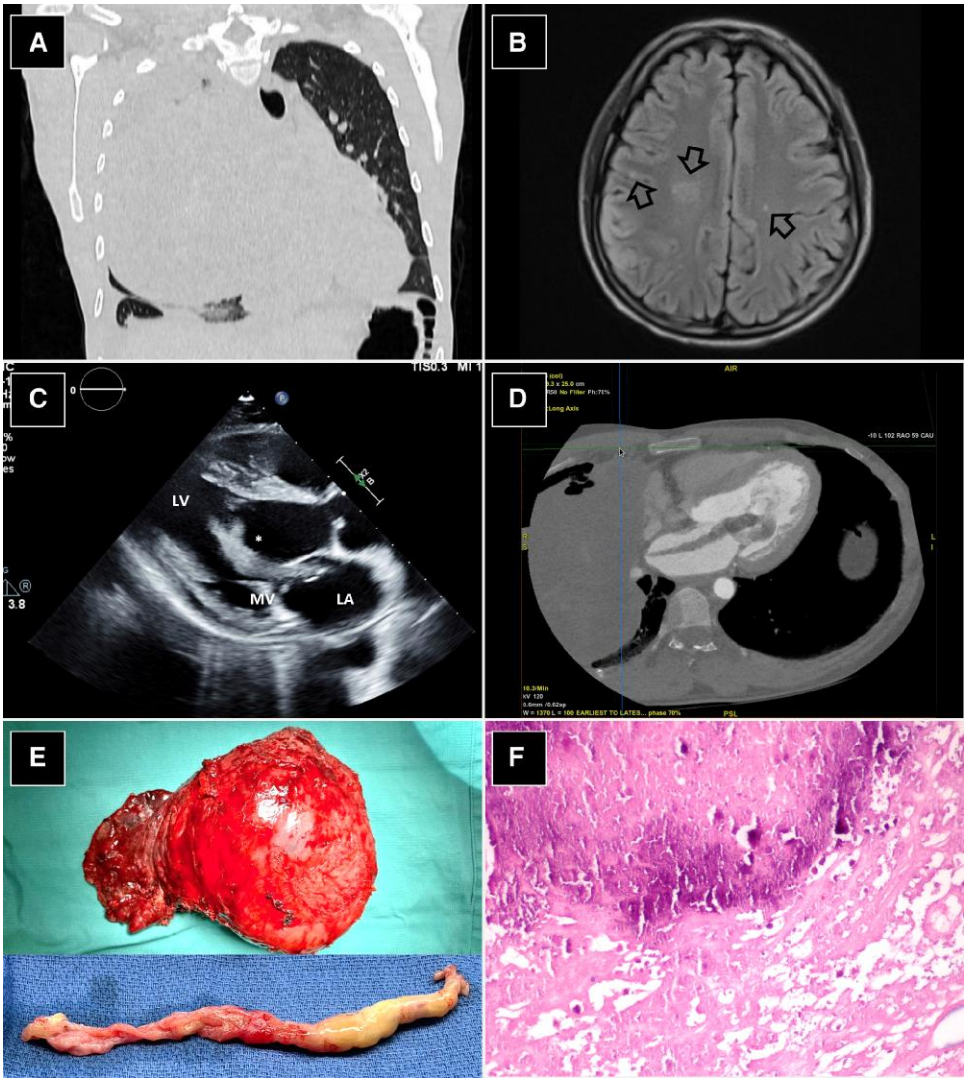

Figure 1 Chest computed tomography angiography (*A*) showing an 18 × 11 cm mass in the right upper lung lobe. T2/FLAIR brain magnetic resonance imaging (*B*) showing multiple embolic infarcts (arrows). Transthoracic echocardiogram (*C*) revealing an elongated mass in the left atrium prolapsing through the mitral valve into the left ventriculeduring diastole. Cardiac computed tomography (*D*) showing left atrial mass adjacent to synovial sarcoma in the right lung. Gross pathology (*E*) of the 15 × 14 × 12 cm right upper lung tumour (upper, post-chemotherapy) and the 15 × 1.5 × 1 cm left atrial tumour (lower). Microscopic pathology (*F*) of left atrial tumour composed of necrotic and partially hyalinized tissue. LA, left atrium; MV, mitral valve; LV, left ventricle.

Supplementary material

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

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Consent: The authors confirm that written consent for the use of de-identified information for publication of this case has been obtained from the patient following COPE guidance.

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Data availability

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

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