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A giant primary monophasic synovial sarcoma in the mediastinum

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A 32-year-old pregnant woman presented with bilateral lower extremity edema and was found to have an anterior and middle mediastinal mass on echocardiographic examination. Subsequently, the patient underwent caesarean section at 35 weeks of gestation and was referred to our hospital after delivery. Transthoracic echocardiography showed a large, cystic-solid space-occupying lesion situated anterosuperior to the heart and compressed the cardiac chambers and great vessels (Fig. 1A–D). An irregular mass with suture growth along the large vascular space in the middle and superior mediastinum and pleural effusion were noted on computed tomography (CT). Contrast-enhanced CT examination displayed the mass with heterogeneous enhancement of the solid components (Fig. 1E, F). For a better evaluation of the primary tumor and distant disease, positron emission tomography-CT (PET-CT) imaging was performed. PET-CT imaging revealed high 18F-FDG uptake of solid components in the mass, consistent with malignant tumor lesions without distant metastasis (Fig. 1G).

The cardiovascular surgeons opted for surgical resection of the mass. The postoperative pathological and immunohistochemical analysis indicated the extremely rare primary mediastinal monophasic spindle cell type synovial sarcoma (SS) with cystic degeneration (Fig. 1H). Fluorescence in situ hybridization demonstrated the presence of SS18 gene translocation in the SS (Fig. 1I). The patient was discharged half a month after surgery.

Synovial sarcoma is an extremely rare type of malignant mesenchymal tissue cell tumor and rarely appears in the mediastinum and pericardium. This case highlights the utility of multimodality imaging in the adjuvant definitive diagnosis and treatment planning of the mediastinal SS.

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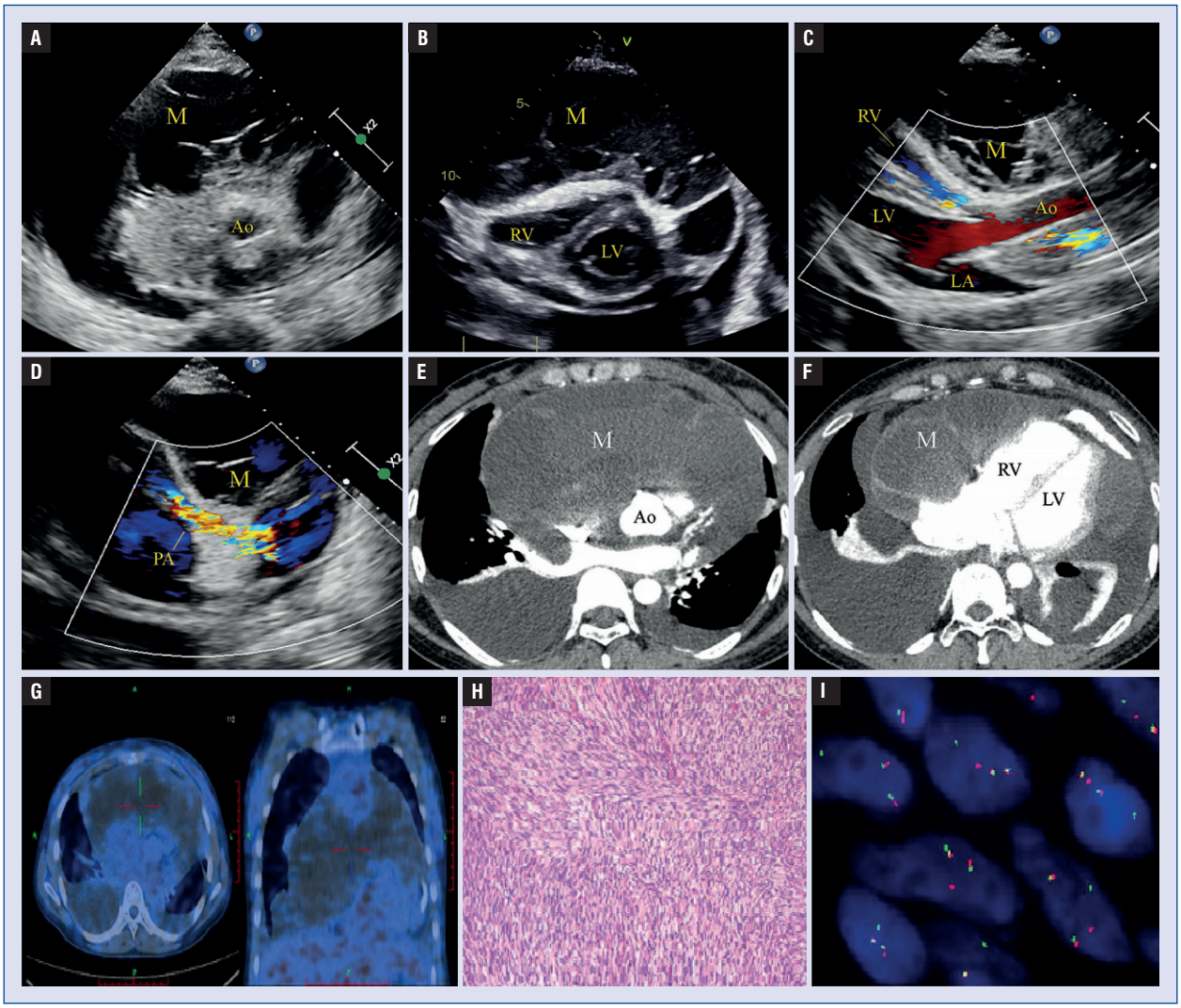

Figure 1. Multimodality imaging and histopathological findings; **A–D.** Transthoracic echocardiography indicating a large, cystic-solid space-occupying lesion situated anterosuperior to the heart and compressed the cardiac chambers and great vessels; **E, F.** Axial contrast-enhanced computed tomography (CT) examination showing the heterogeneous enhancing mass in the mediastinum; **G.** Positron emission tomography-CT revealing a hypermetabolic mass in the pericardium and superior mediastinum; **H.** Histology of the surgical specimen indicating the monophasic spindle tumor cells; **I.** Fluorescence in situ hybridization displaying the presence of SS18 gene translocation; Ao — aorta; LA — left atrium; LV — left ventricle; M — mass; PA — pulmonary artery; RV — right ventricle; SS — synovial sarcoma.