

IMAGE FOCUS

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A case of primary cardiac lymphoma: *in vivo* imaging and pathologic correlation

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An 86-year-old woman was admitted because of heart failure. Trans-thoracic echocardiography demonstrated a pericardial effusion and masses occupying the right atrium. Axial non-contrast computed tomography (CT) image showed isoattenuating masses relative to the myocardium in the right atrium (Panel A1). Contrast-enhanced CT revealed mildly enhancing right atrial masses with relatively homogeneous enhancement (Panel A2: axial image, Panel A3: coronal image, arrows). Planar whole body Gallium-67 scintigraphy 72 hours after injection showed diffuse uptake in the heart walls and the pericardial cavity (Panel B). She had an elevated level of a soluble interleukin-2 receptor (5353 U/mL, normal range: 145–519 U/mL). We highly suspected malignant lymphoma. However, because our patient's general condition was poor, neither the surgical biopsy nor the transarterial catheter biopsy could be performed. The heart failure progressed to death despite medical treatment. An autopsy revealed several nodular tumours in the right atrium (Panels C and D). Haematoxylin and eosin staining revealed large lymphocytes with high mitotic activity showing diffuse infiltration (Panel E). In immunochemical staining, CD20 (the B cell marker) showed a positive result, whereas CD 3 (the T cell marker) showed a negative result. Histopathological examination confirmed the tumours to be diffuse large B-cell lymphoma. Malignant lymphoid cells had diffusely infiltrated into the pericardium and myocardium (Panels F: low power view and G: high power view). Pathological diagnosis was consistent with primary cardiac lymphoma (PCL). PCL, involving solely the heart and/or pericardium at presentation, is a very rare disorder with poor prognosis. Right heart involvement has been reported to be far more common than left heart. Histologically, most of PCL are diffuse B-cell lymphoma, as in the present case.

Panel F: Epi, epicardium; Endo, endocardium.

