A 73-year-old man was referred to the Department of Radiology for assessment of a liver disorder. He initially underwent liver sonography which showed hepatic nodules (12–16 mm) mainly confined to the right hepatic lobe. One of these was diagnosed as a hepatocellular carcinoma and the other as a small hemangioma (Fig. 1). There was a small, global pericardial effusion (11–20 mm). In addition, a solitary, very hypoechoic ovoid mass was incidentally observed in the right-side atrioventricular groove (Fig. 2). These findings were confirmed by computed tomography (CT) (Fig. 3).

Surgical biopsy of the lesion in the right-side atrioventricular groove was subsequently obtained by thoracoscopy. A diagnosis of a primary cardiac large B cell non-Hodgkin’s lymphoma was made based on histology. The patient was treated with rituximab with cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP) chemotherapy. After eight courses of R-CHOP chemotherapy, successful remission of the disease was confirmed by a further CT scan (Fig. 3). The amount of pericardial effusion had decreased.

Conflicts of interest: None.

Fig. 1 Oblique transverse scan of the right hepatic lobe shows an apparently hyperechoic nodule (16 mm) in the region of S5 (large arrow) and another relatively heterogeneously hyperechoic nodular (12 mm) in the region of S7 (small arrow). Both lesions were subsequently confirmed by computed tomography and the latter lesion, diagnosed as a hepatocellular carcinoma, was successfully treated by surgical resection.

Fig. 2 Transverse scan of the left hepatic lobe. (A) A hypoechoic lesion was incidentally seen in the right-side atrioventricular groove (arrow), partially surrounded by the pericardial effusion (arrowheads). (B) The lesion (arrow) is better shown by further study of the pericardial space (arrowheads).

Fig. 3 Contrast-enhanced computed tomography scan showing pericardial effusion and a minimally enhanced lesion located in the right-side atrioventricular groove (arrow).
(5–8 mm) and the pericardial tumor was not visible with follow-up sonography.

Primary cardiac lymphomas are rare and are typically of the non-Hodgkin type. By definition, these tumors only affect the heart or pericardium at diagnosis, with no evidence of extracardiac lymphoma. Chest radiographs of patients with primary cardiac lymphomas usually show cardiomegaly secondary to pericardial effusion, and also signs of heart failure. Echocardiography typically shows hypoechogenic myocardial masses. The areas most often affected by primary cardiac lymphomas are the right atrium, followed by the right ventricle, left atrium, atrial septum, and ventricular septum. More than one cardiac chamber is affected in over 75% of patients, although tumors confined to the atria, pericardium, and coronary arteries may also occur. Contiguous invasion of the pericardium is typical. The atrial or ventricular tumors are often associated with pericardial effusion [1–4].

Echocardiography accurately identifies masses, wall thickening, and functional myocardial impairment owing to infiltration, and can be used to detect the presence of a pericardial effusion. Cardiac lymphomas most commonly present as a nodular or polypoid mass with variable myocardial infiltration. They have a propensity to affect the right-side chambers of the heart. Cardiac lymphomas are hypodense or isodense with respect to the myocardium on a CT scan and show heterogeneous enhancement after intravenous administration of contrast [4–6]. Magnetic resonance imaging shows poorly marginated and heterogeneous lesions, which are isointense to slightly hypointense relative to the myocardium on T1-weighted magnetic resonance images and isointense on proton density and T2-weighted images [7, 8]. Gadolinium administration produces a heterogeneous pattern of enhancement. Magnetic resonance imaging plays a key part in establishing an early diagnosis and assessing the response to treatment [4].

References


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