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Case Report

Hepatic sarcoidosis with atypical radiological manifestations: A case report

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ABSTRACT

Sarcoidosis is a multisystemic inflammatory disease of unknown origin characterized by the formation of noncaseating granulomas and accumulation of inflammatory cells. Sarcoidosis most commonly affects the lungs and lymphoid system. However, the liver can also be involved in 50%-65% of cases. On magnetic resonance imaging, sarcoidosis lesions usually present as hypointense lesions on all sequences. However, we present a rare case of nodular liver sarcoidosis presenting with T2 hyperintense lesions. In addition, while most cases of hepatic nodular sarcoidosis present with multiple small hepatic nodules, liver masses of our case are larger than usual. Moreover, this case suggested that when intact vascular structures penetrating liver nodular lesions are observed as in the current case, liver sarcoidosis can be included in a list of differential diagnosis.

Introduction

Sarcoidosis is a multisystemic granulomatous disease of unknown origin which typically affects the lungs and mediastinal lymph nodes [1]. However the central nervous systems, bones, eyes, skin, spleen, and liver can also be involved, in addition, 50%-65% of the patients' biopsies show a histological involvement of the liver [2]. Homogeneous hepatomegaly is often detected on computed tomography (CT). Focal nodular lesions observed on both CT and magnetic resonance imaging (MRI) represent additional radiological manifestations of Sarcoidosis [3]. Here, we report atypical manifestations of liver sarcoidosis on both CT and MRI.

Case

A 68-year-old woman presented to our hospital following a suspicion of liver tumors detected on noncontrast CT during a medical check-up. She had no significant clinical history and was not on any medication. Initial laboratory results were

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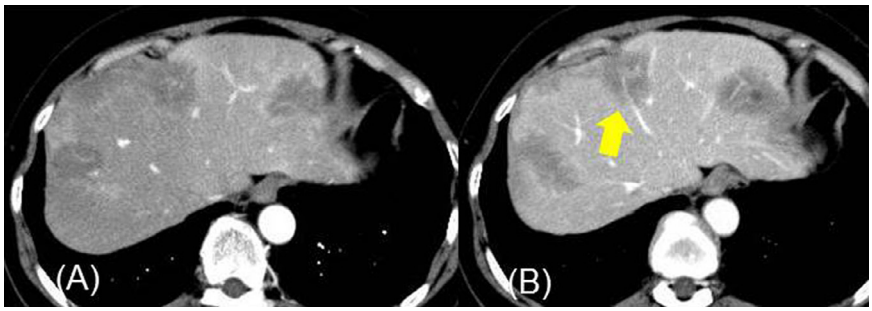

Fig. 1 – (A) Arterial phase of enhanced computed tomography scan revealed hypodense tumors in the liver. (B) Portal phase of enhanced computed tomography scan further evidenced tumor hypodensity and the intact vascular architecture in the tumor region (arrow).

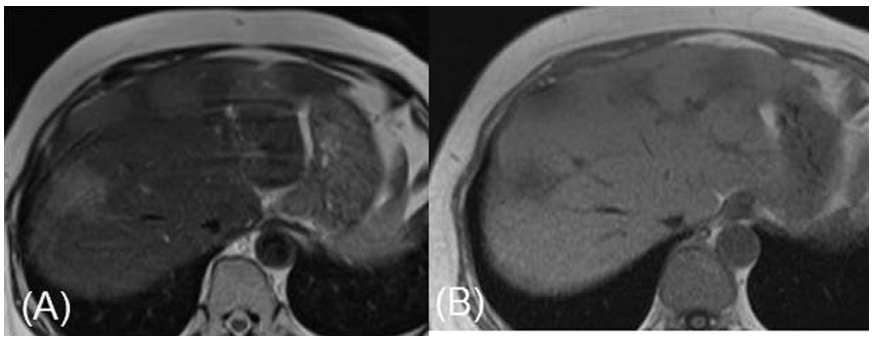

Fig. 2 – (A) T2-weighted magnetic resonance imaging images showed slightly hyperintense tumors. (B) T1-weighted magnetic resonance imaging images showed hypointense tumors.

unremarkable. Physical examination results and blood pressure were also normal.

Portal phase of dynamic CT revealed several hypodense lesions with homogeneous enhancement in the liver (Fig. 1). These lesions measured approximately 1-4 cm. Intrahepatic vascular structures penetrating the lesions seemed to be intact. CT showed no organomegaly or enlargement of abdominal lymph nodes.

Furthermore, a contrast-enhanced MRI using gadolinium ethoxybenzyl diethylenetriamine pentaacetic acid also revealed several mass lesions in the liver. The lesions were slightly hyperintense on T2-weighted MR images and hypointense on T1-weighted MR images as compared with the surrounding hepatic parenchyma (Fig. 2). On hepatobiliary-phase these lesions were identified as hypointensity areas (Fig. 3). Diffusion-weighted image revealed tumors with high signal intensity with a restriction of water diffusivity on the apparent diffusion coefficient maps (Fig. 4).

Ultrasound-guided liver biopsy using a 16-gauge true-cut needle was performed. Histological specimen showed several multinucleated giant cells as well as multiplications of epithelioid cells were observed in the portal and periportal spaces (Fig. 5). The lobular structure of the liver was intact. Hepatic sarcoidosis was diagnosed based on such pathological findings. After starting treatment with prednisolone (30 mg), the patient showed good response with near regression of the liver lesions on CT 12 months later.

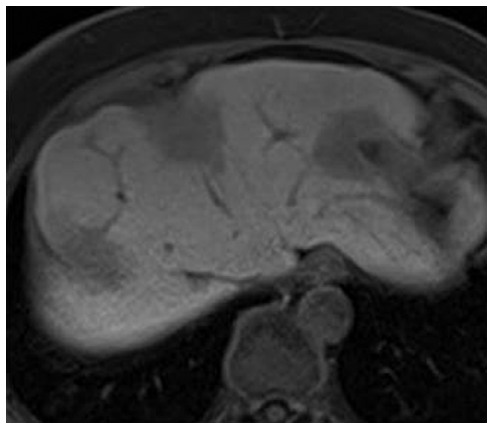

Fig. 3 – Hepatobiliary-phase of contrast MR images revealed a hypointensity.

Discussion

Sarcoidosis is a multisystemic idiopathic disease characterized by formation of noncaseating granulomas due to the accumulation of inflammatory cells. Such granulomas can involve any organ typically affecting the lungs and mediastinal lymph nodes in about 90% of the patients [4]. Gezer et