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^{99m}Tc-DTPA-HSA uptake in a case of splenic hamartoma

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Primary splenic tumors are very rare. The authors present a case of splenic hamartoma in which positive ^{99m}Tc-DTPA-HSA uptake was recognized with ultrasound, CT, MR and angiographic images. This case showed the need to consider hamartoma as well as hemangioma in the differential diagnosis of ^{99m}Tc-DTPA-HSA uptake in splenic tumors.

Key words: spleen, hamartoma, blood-pool imaging, ^{99m}Tc-DTPA-HSA

INTRODUCTION

PRIMARY SPLENIC TUMORS are very rare, and preoperative diagnosis is not easy.[1]

We report a case of splenic hamartoma in which positive ^{99m}Tc-DTPA-HSA uptake was recognized.

CASE REPORT

A 56-year-old woman with no symptom was found to have a splenic mass (4 × 4 cm) on abdominal ultrasonography (US). The mass was slightly hypoechoic (Fig. 1). Hematological examination and blood chemistry findings were within normal limits. The mass was shown as a round slightly hypodense area on CT enhanced scan (Contrast medium was administered by intravenous drip infusion (total 100 m*l*) and the CT image was obtained about 4 minutes after 50 m*l* administration.) (Fig. 2). The mass was isointense on a T1-weighted spin echo image (TR/TE: 600/13) and hyperintense on a T2-weighted image (TR/TE: 2500/100) (Fig. 3). Blood pool scintigraphy was performed 30 minutes after injection of 740 MBq ^{99m}Tc-DTPA-HSA. The planar image showed ^{99m}Tc-DTPA-HSA uptake in the spleen (Fig. 4). SPECT was performed in 60 steps, 360°, 25 seconds per step, with a 64 × 64 matrix (TOSHIBA GCA-7200A). ^{99m}Tc-DTPA-HSA uptake in the splenic lesion was recognized (Fig. 5 A, B). This finding suggested splenic hemangioma. Angiography showed hypervascular tumor in the parenchymal phase (Fig. 6). Splenectomy was performed. Pathological examination revealed splenic hamartoma (Fig. 7).

DISCUSSION

Splenic hamartoma is a rare benign lesion and is composed of arrabnormal mixture of normal splenic elements. Most cases have been discovered incidentally at autopsy or splenectomy. The incidence at autopsy is 0.13%.[1] On US, splenic hamartoma appears as a demarcated solid homogeneous mass.[2] On plain CT, splenic hamartoma appears as an area of low density and postcontrast CT shows various enhancement.[3] On MRI, splenic hamartoma appears as an isointense area on the T1-weighted image and a hyperintense area on the T2-weighted image.[3] On angiography, splenic hamartoma is richly vascular tumor. In benign splenic tumors except hamartoma, a relative lack of vascularity in the parenchymal phase is generally apparent.[4,5] On scintigraphy, splenic hamartoma is frequently demonstrated as an area of photodeficiency, although uptake of heat-treated ^{51}Cr-labeled red blood cells or radiocolloid in the tumor has been reported.[2,5,6] The present case was consistent with these reported US, CT, MRI and angiographic features.

In the present case, since the tumor was not very hyperintense on the T2-weighted image, blood-pool

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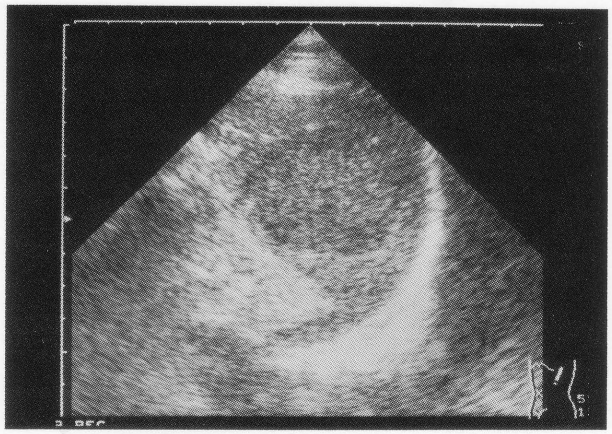


Fig. 1 US showed a demarkated and slightly hypoechoic mass in the spleen.

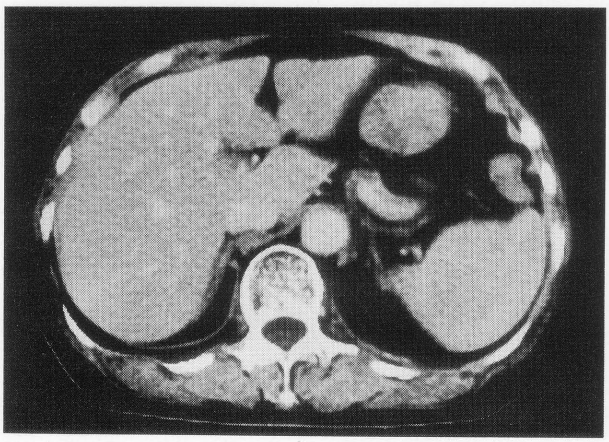


Fig. 2 The splenic mass was shown as a round slightly hypodense area on enhanced CT.

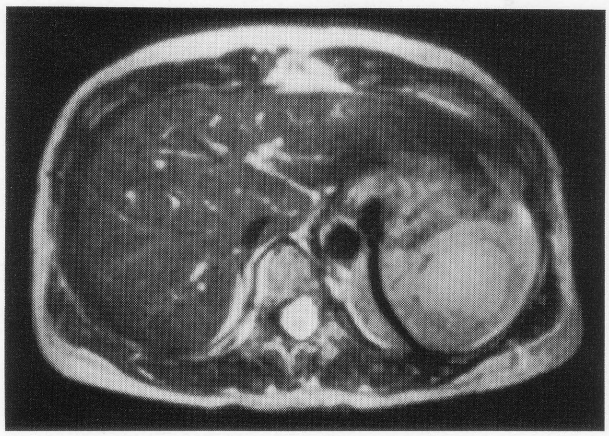


Fig. 3 The splenic mass was hyperintense on a T2-weighted image.

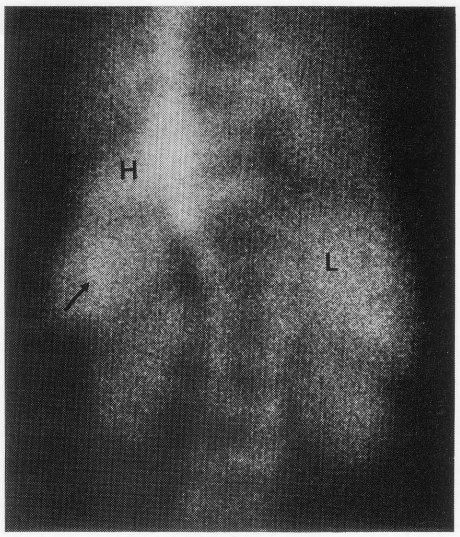
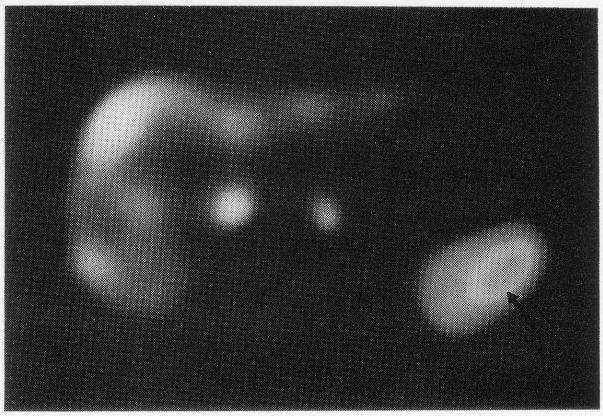
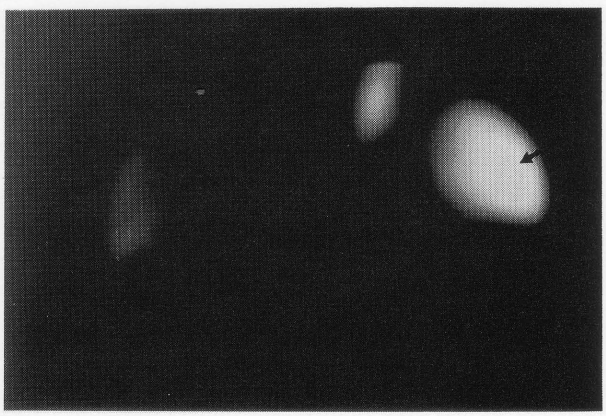


Fig. 4 Planar ^{99m}Tc-DTPA-HSA scintigraphy showed tracer uptake in the spleen (arrow) (Posterior view, H: heart, L: liver).



A



B

Fig. 5 SPECT showed intense tracer uptake in the splenic lesion (arrow) (A: transaxial image, B: coronal image).

scintigraphy with ^{99m}Tc-DTPA-HSA was employed to rule out hemangioma,[7] but ^{99m}Tc-DTPA-HSA uptake was recognized, and the pathologic diagnosis was splenic hamartoma. In our knowledge, there is nothing in the literature on blood-pool scintigraphy with ^{99m}Tc-DTPA-HSA of splenic hamartoma. Concerning the mechanism of ^{99m}Tc-DTPA-HSA uptake, it is reported that prolonged enhancement on postcontrast CT and MR images is char-

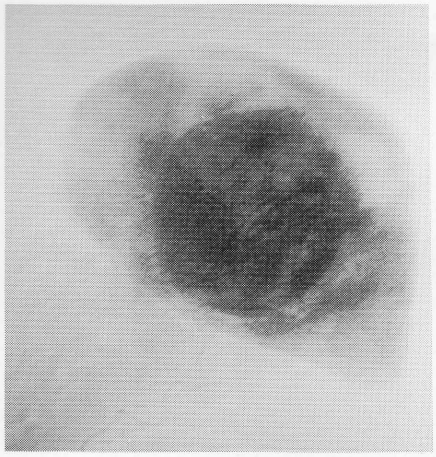


Fig. 6 Angiography showed tumor stain in the parenchymal phase.

acteristically recognized in splenic hamartoma. And prolonged enhancement is probably due to stagnant contrast material within the sinusoids of the red pulp component of the tumor.[3] This prolonged enhancement may contribute to ^{99m}Tc-DTPA-HSA uptake in splenic hamartoma.

In conclusion, a rare case of splenic hamartoma was presented. This case suggested the possibility of splenic hamartoma when tumor was not very high intensity on the T2-weighted MR image and ^{99m}Tc-DTPA-HSA uptake was recognized on blood-pool scintigraphy.

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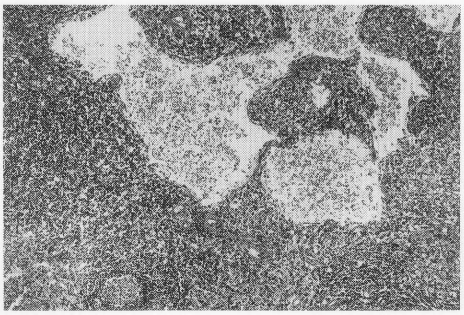

Fig. 7 Pathological examination revealed splenic hamartoma (H-E stain).

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