

## Accessory spleen in the pelvis diagnosed by Tc-99m phytate scintigraphy

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We report a 58-year-old woman with an accessory spleen in the left side of the pelvis. She visited our outpatient clinic complaining of lower abdominal discomfort. Abdominal ultrasonography revealed a tumor 4 cm in diameter in the left side of the pelvis. Color Doppler ultrasonography demonstrated plentiful pulsating blood flow. Magnetic resonance angiography revealed that the blood supply for the tumor was from a branch of the splenic artery. Scintigraphy with Tc-99m phytate revealed accumulation of radioactivity concordant with a mass in the left side of the pelvis, and the spleen was normally visualized. These findings suggested that this tumor was an accessory spleen, and the patient underwent no further invasive procedures.

**Key words:** accessory spleen, Tc-99m phytate, liver scintigraphy

### INTRODUCTION

AN ACCESSORY SPLEEN is present in 10–20% of individuals,<sup>1</sup> commonly in the splenic hilum or in the ligaments of the spleen.<sup>1,2</sup> Accessory spleen in the pelvis is very rare.<sup>3–5</sup> Scintigraphy is one of the most useful examinations for evaluation of accessory spleen.<sup>6,7</sup> We report a case of accessory spleen in the pelvis in which scintigraphy with Tc-99m phytate was useful for diagnosis.

### CASE REPORT

A 58-year-old woman visited our outpatient clinic complaining of lower abdominal discomfort. The abdomen was soft and flat, and no mass lesion was palpable. Laboratory tests revealed no abnormality. No abnormality was found in tumor marker levels. Abdominal ultrasonography (US) revealed a tumor 4 cm in diameter in the left side of the pelvis. The tumor was hypo-echoic and almost homogeneous inside. Color Doppler US demon-

strated plentiful pulsating blood flow (Fig. 1). Contrast enhanced computed tomography (CT) revealed a tumor 4 cm in diameter that was enhanced homogeneously (Fig. 2). On barium enema, no abnormalities were found in the mucous of the colon, and no clear compressive lesion was detected. To identify the origin of the vascular pedicle of the mass, magnetic resonance (MR) angiography was performed as a relatively non-invasive method. MR imaging revealed a tumor in the left side of the pelvis which had almost the same character as the spleen and derived its blood supply from a branch of the splenic artery (Fig. 3). These findings suggested that the tumor was an accessory spleen. Liver-spleen scintigraphy 30 minutes after intravenous injection of 111 MBq of Tc-99m phytate revealed accumulation of radioactivity concordant with a mass in the left-side of the pelvis, and the spleen was normally visualized (Fig. 4). This tumor was diagnosed as an accessory spleen, and the patient underwent no further invasive procedures.

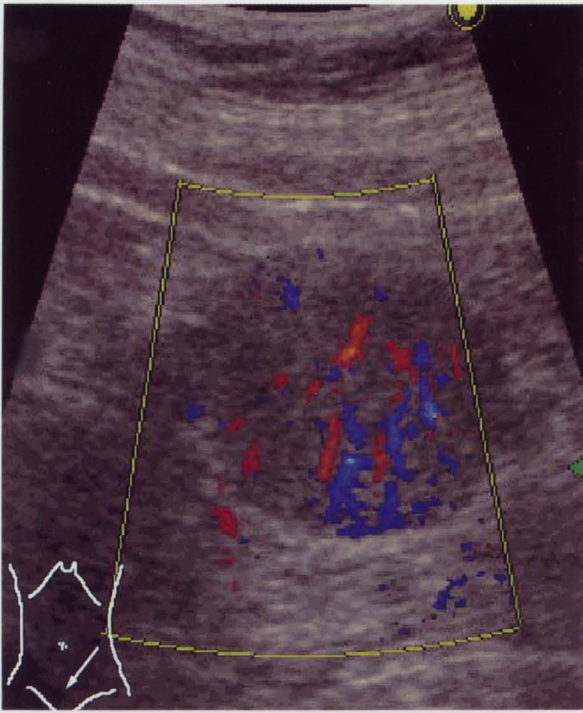
### DISCUSSION

Accessory spleen occurs when the primordial clusters of mesenchymal cells fail to fuse or abnormally depart from the original spleen. An accessory spleen generally derives its blood supply from a branch of the splenic artery. It is

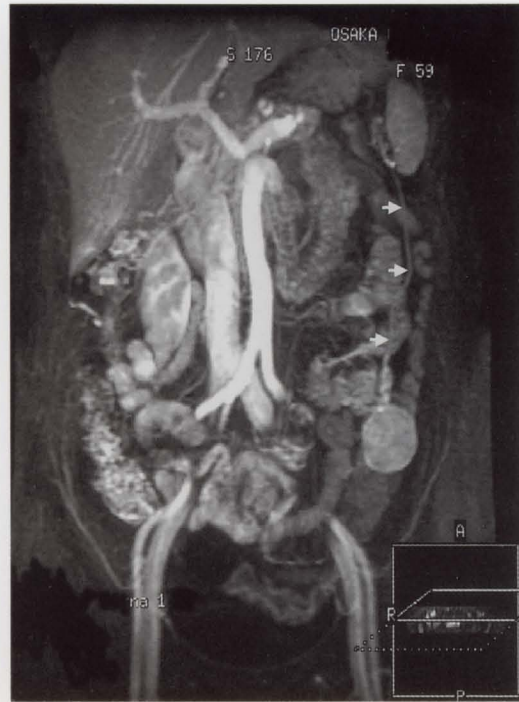
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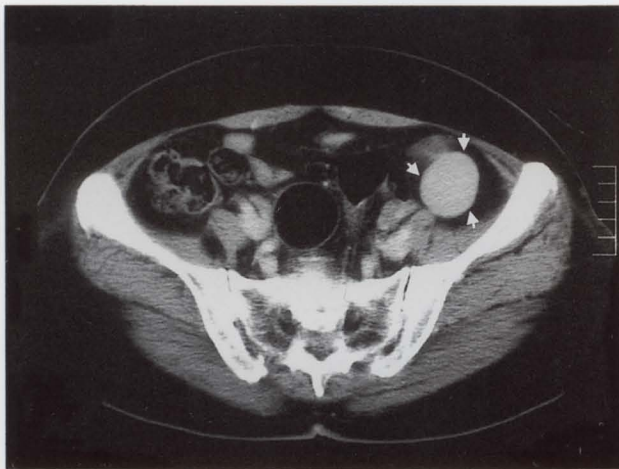
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**Fig. 1** Abdominal ultrasonography (US) revealed a tumor 4 cm in diameter in the left side of the pelvis. The tumor was hypoechoic and almost homogeneous inside. Color Doppler US demonstrated plentiful pulsating blood flow.



**Fig. 3** MR imaging revealed a tumor in the left side of the pelvis almost the same in character as the spleen, which derived its blood supply from a branch of the splenic artery (arrow).



**Fig. 2** Contrast enhanced computed tomography (CT) revealed that the tumor had shrunk to 4 cm in diameter and that it was enhanced homogeneously (arrow).

commonly located in the splenic hilum or in the ligaments of the spleen,<sup>1,2</sup> and an accessory spleen in the pelvis is very rare.<sup>3-5</sup> Wadham et al.<sup>2</sup> reported the incidence and location of accessory spleen. According to their report, in 250 consecutive autopsies, accessory spleen was present in 47 cases (19%), and could be found in the hilum of the main spleen (41%), the tail of the pancreas (11%), lienorenal ligament (23%), gastrosplenic ligament (13%), the



**Fig. 4** Scintigraphy with Tc-99m phytate revealed an accumulation of radioisotope concordant with a mass in the left side of the pelvis, and the spleen was normally visualized.

great omentum (7%), or in the connective tissue under the left diaphragm (4%). Accessory spleen is usually asymptomatic, but is sometimes discovered in patients with acute abdominal pain because torsion of the pedicle can result in rupture or infarction.<sup>8,9</sup> An accessory spleen located far from the original spleen is often suspected to be a malignant tumor with plentiful pulsating blood flow and is often diagnosed histopathologically after surgery because it exhibits no specific findings with imaging methods such as US, CT and MRI.<sup>10,11</sup> Scintigraphy with Tc-99m phytate is the most useful method of examination for evaluation of a functional accessory spleen.<sup>12,13</sup> The mass is diagnosed as an accessory spleen if it exhibits tracer accumulation concordant with a mass the same as the normal spleen. In this case we suspected malignant tumor of the small intestine and planned surgical treatment, but MR angiography revealed that the blood supply of the tumor was from a branch of the splenic artery, and accessory spleen was diagnosed by scintigraphy with Tc-99m phytate, and unnecessary surgery was avoided.

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