

A case of diaphragm hernia containing accessory spleen and great omentum detected by Tc-99m phytate scintigraphy

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A rare case of diaphragm hernia containing an accessory spleen and great omentum is reported. Tc-99m phytate SPECT showed tracer accumulation in the accessory spleen and was useful in the evaluation of the disease.

Key words: Tc-99m phytate, SPECT, accessory spleen, diaphragm hernia

INTRODUCTION

SCINTIGRAPHY is one of the most useful examinations in the evaluation of accessory spleen.¹⁻³ We present a rare case of diaphragm hernia containing an accessory spleen and great omentum in which Tc-99m phytate SPECT was very useful in the evaluation of the disease.

CASE REPORT

A 77-year-old woman consulted her family physician because of a cold. Chest roentgenogram showed an abnormal shadow in the left costophrenic angle (Fig. 1). She has no history of trauma. She was referred to our hospital for further evaluation. Blood analysis and blood chemistry findings were not remarkable.

Chest CT revealed a fat density mass containing a soft-tissue dense nodule abutting on the left chest wall (Fig. 2 A). The intrathoracic fat density mass seemed to be connected with intraabdominal fat tissue (Fig. 2B, C). The spleen was also recognized (Fig. 2C), and the soft-tissue dense nodule was apart from the left lobe of the liver. These findings suggested diaphragm hernia containing omentum and a soft-tissue dense nodule.

Scintigraphy was performed 15 minutes after 185 MBq Tc-99m phytate injection to evaluate the soft-tissue nodule. SPECT was performed in 60 steps, through 360°, 25

seconds per step with a 128 × 128 matrix (TOSHIBA GCA-7200A). The prefilter was Butterworth (order 8, cut off 0.13) and the filter was Ramp. To produce a 3-D image, the upper threshold was 100% and the lower threshold was 35%. Transaxial and coronal images showed tracer accumulation concordant with a left costophrenic angle mass (Fig. 3 A, B ↑). The spleen was also normally visualized (Fig. 3 A, C ↑). A 3-D display also showed the accessory spleen more clearly (Fig. 4 LAO view ↑). These findings showed that the soft-tissue nodule was an accessory spleen. The patient underwent no further invasive procedures.

DISCUSSION

This report describes Tc-99m phytate imaging in a rare case of diaphragm hernia containing an accessory spleen and great omentum, and is presented for two reasons. First, diaphragm hernia containing an accessory spleen and great omentum is rare. Second, Tc-99m phytate scintigraphy was diagnostic.

To our knowledge, there is only one description of diaphragm hernia containing the accessory spleen. Tomioka and Nakajima have reported a case of Bochdalek hernia combined intrathoracic accessory spleen in a 65-year-old man. They have reported the usefulness of coronal and sagittal MR images. They also recommended splenic scintigraphy, but unfortunately it was not able to be performed.⁴

Wadham et al. have also reported the incidence and location of accessory spleen. According to the report, in

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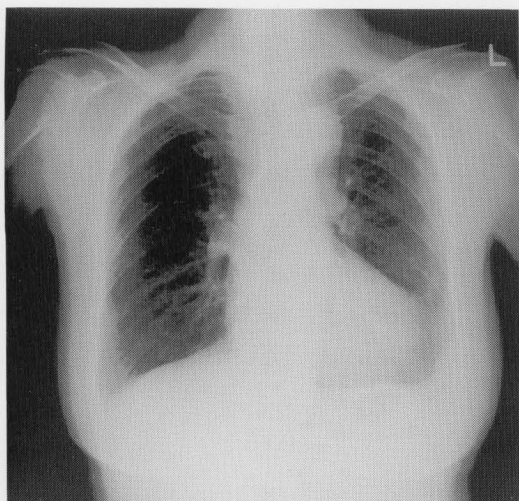
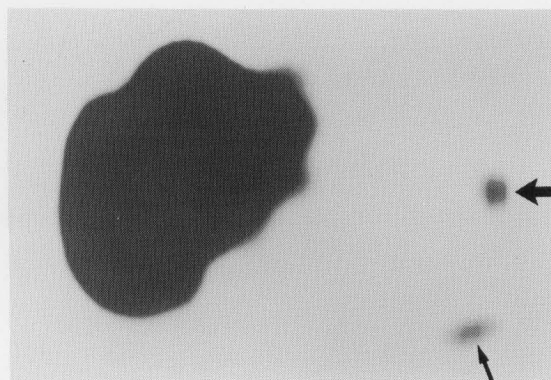
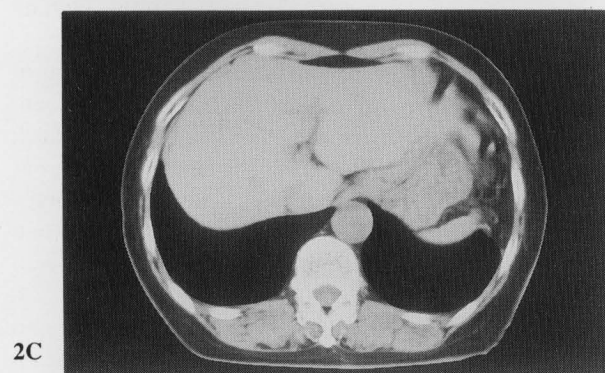
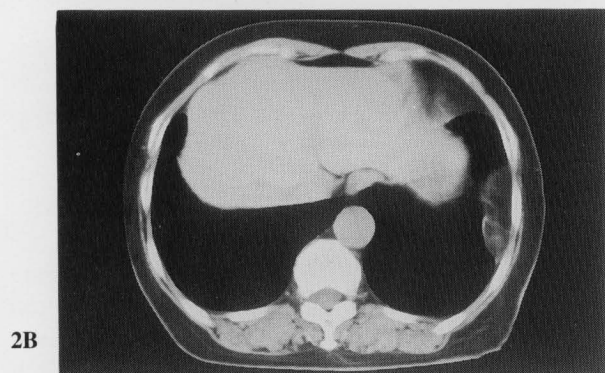
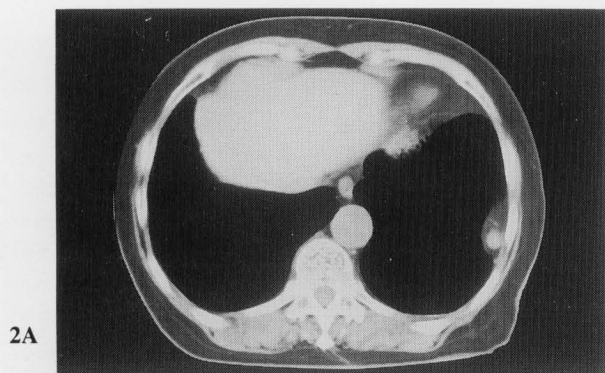
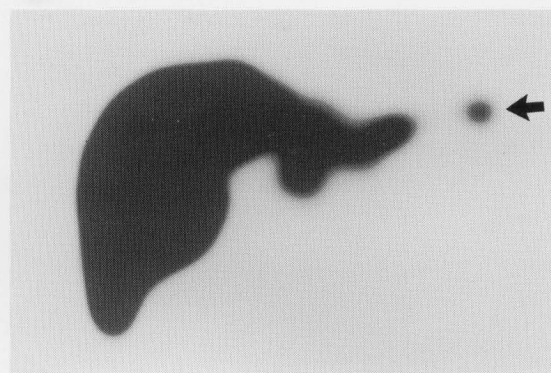


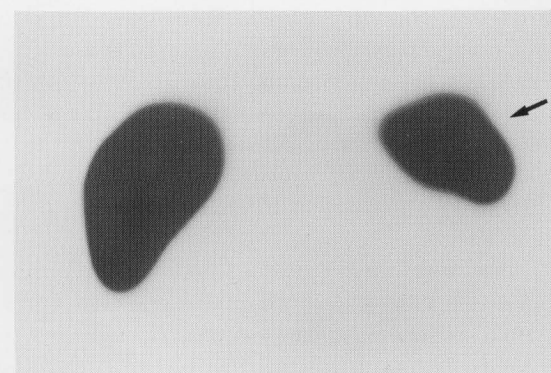
Fig. 1 Chest roentgenogram shows an abnormal shadow in the left costophrenic angle.



A



B



C

Fig. 3 Tc-99m phytate SPECT images shows tracer accumulation concordant with left costophrenic angle mass (A: transaxial, B, C: coronal ↑). Spleen is also normally visualized (A, C ↑).

Fig. 2 Chest CT reveals a fat density mass containing a soft-tissue dense nodule abutting on the left chest wall (A). The intrathoracic fat density mass is seemed to be connected with intraabdominal fat tissue (B, C).

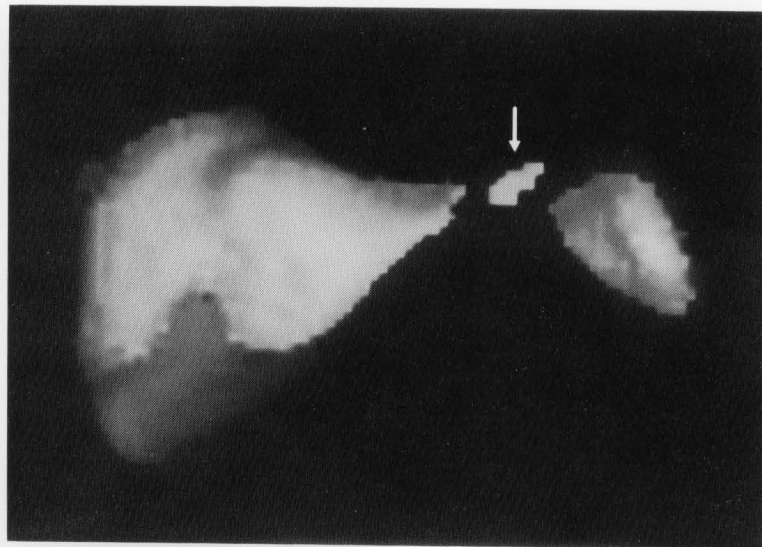


Fig. 4 3-D display also shows accessory spleen clearly (LAO view ↑).

250 consecutive autopsies, accessory spleens were found in 47 cases (19%), and found in the hilum of the main spleen (41%), the tail of the pancreas (11%), lienorenal ligament (23%), gastrosplenic ligament (13%), the great omentum (7%), and in the connective tissue under the left diaphragm (4%).⁵

In the present case, CT suggested diaphragm hernia containing great omentum and a soft-tissue dense nodule. Tc-99m phytate scintigraphy showed that the nodule was an accessory spleen and prevented invasive procedures.

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