

DISPLACEMENT OF THE SPLEEN IN INFECTED PANCREATIC PSEUDOCYST: CASE REPORT

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In two patients with infected pancreatic pseudocyst ^{99m}Tc -sulfur colloid scans showed similar medial and inferior displacement of the spleen.

A number of techniques have been described for splenic imaging (1,2). For practical purposes an acceptable image of the spleen is obtained during reticuloendothelial liver scanning with ^{99m}Tc -sulfur colloid. The major clinical value of spleen imaging is to show enlargement, particularly when this cannot be determined clinically; occasionally defects due to infiltration or infarction can be seen. It is unusual for the spleen to appear displaced on the image. Here we describe two cases in which medial and downward displacement was marked; in one case the findings gave useful preoperative information.

CASE REPORTS

Case 1. In 1970 a 47-year-old woman presented with an epigastric mass. Laparotomy revealed a pancreatic pseudocyst which was marsupialized to the jejunum; other viscera were reported as normal. After 1 year melena developed and laparotomy was repeated; a possible duodenal ulcer with no obvious bleeding point was found. Repetition of melena 1 year later led to vagotomy and pyloroplasty, from which she made a poor recovery complicated by pyrexia and splenic pain.

A splenoportogram showed a raised portal pressure of 14 cm H_2O , occlusion of the splenic vein, and enormous fundal varices terminating in a portal vein of normal dimensions. Biopsy of the enlarged tender spleen showed only mild chronic inflammation; a ^{99m}Tc -sulfur colloid rectilinear scan at this time (Fig. 1A) showed an enlarged liver extending 4 cm below the costal margin and a spleen 16 cm long in the posterior view.

The patient's condition deteriorated over the next

2 weeks and a repeat scan showed the spleen to be medially displaced and flattened on its lateral aspect. No focal defects were seen in the liver (Fig. 1B). A further laparotomy shortly afterwards revealed a large infected and necrotic pancreatic pseudocyst, which was removed in the course of splenectomy. Fundal veins were grossly dilated and a biopsy of the liver indicated nonspecific reactive hepatitis. Five months later, however, she was readmitted with the liver replaced largely by metastases from a carcinoma in the tail of the pancreas, and died. The carcinoma was probably the underlying cause of the portal hypertension and pseudocyst.

Case 2. A 55-year-old diabetic man presented with severe left costophrenic pain radiating to the left shoulder and testicle. He had a history of alcoholism. An initial diagnosis of splenic infarction was made. On the ^{99m}Tc -sulfur colloid scan the liver was extended 7 cm below the costal margin, showing generally patchy uptake, and the slightly enlarged spleen was displaced medially with lateral flattening (Fig. 2). In view of the similarity to the previous case, infected pancreatic pseudocyst was given as one of the possible interpretations; this was confirmed at laparotomy next day. The infected and necrotic contents had displaced the hilar region of the spleen. The spleen and an 8-cm portion of the tail of the pancreas were removed with the cyst. Histology confirmed the extension of the pseudocyst into the spleen.

DISCUSSION

Cysts develop in approximately 3% of patients with acute pancreatitis; cysts are also associated

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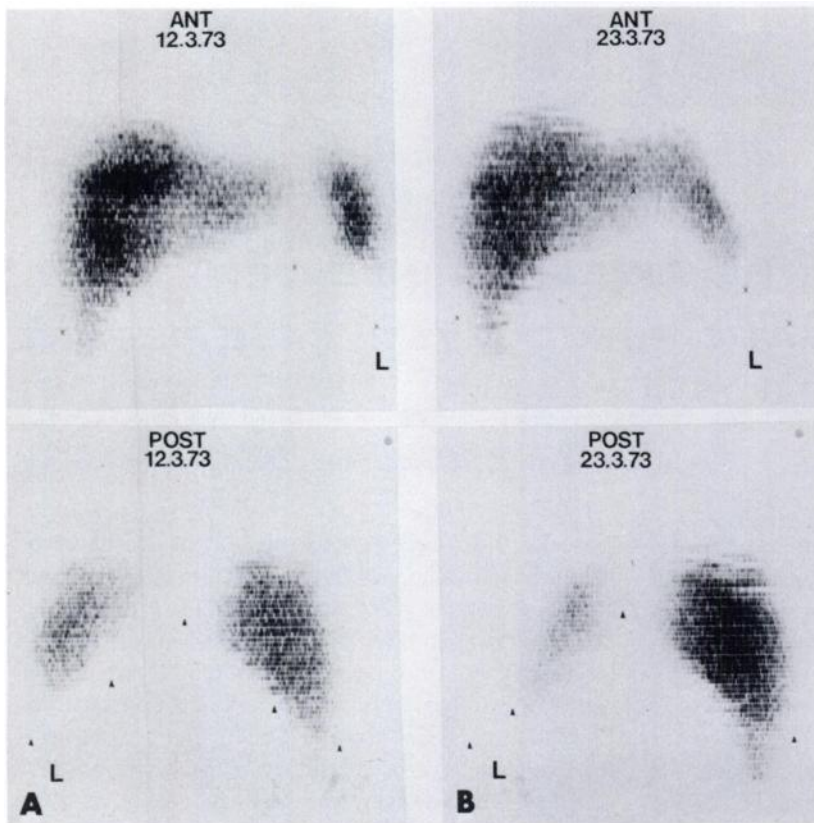


FIG. 1. Anterior and posterior liver and spleen scans of Case 1. (A) Liver appears normal and spleen slightly enlarged. (B) Liver is unchanged, but spleen shows medial displacement and flattening of lateral surface. Markers indicate anterior costal margin.

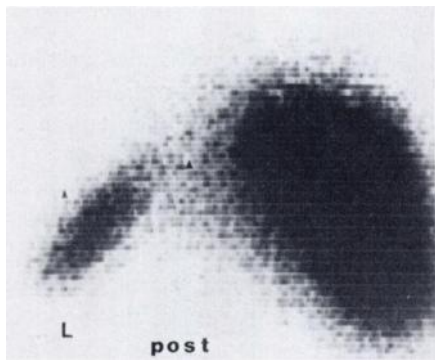


FIG. 2. Posterior liver and spleen scan of Case 2 centered over maximum activity in spleen. Spleen shows medial and downward displacement. Markers indicate anterior costal margin.

with neoplasms and trauma to the pancreas. Cysts which extend into the lesser sac are often palpable, and upper gastrointestinal barium studies may show displacement of the stomach or duodenum (3). Abscess formation within a cyst is an important additional complication and carries a high mortality. Urgent surgical intervention is necessary to drain the abscess cavity. Although an infected cyst is difficult to diagnose, persistent pyrexia and leucocytosis may indicate its presence (4). Rosenquist obtained pyelographic evidence of retroperitoneal extension in one case which showed indentation of the lower pole

of the left kidney; he suggested that autolytic enzymes released from the pancreas may assist in the extension of the abscess (5).

Colloid scintigraphy may be normal in the presence of a pancreatic pseudocyst (1), or show separation of the liver and spleen (6), but such changes in the position of the splenic image may be due to other causes as well (7,8). Spencer has reported two cases in which the spleen has been displaced. In the first patient, an adult, the spleen changed in position over a period of 6 days: the cause for this was not discovered. The second patient, a 22-month-old child, showed downward displacement of the spleen which was reversed by gastric decompression (9,10). These reports show that repeated scintigraphy may be necessary to show that the spleen position has altered. Selenium-75-selenomethionine imaging of the pancreas may show a defect due to a pseudocyst (11), but other causes for a focal defect cannot be excluded (12).

Curiously, both patients described in this paper were referred for routine colloid scanning within the same week, although such displacement had not been previously observed in our experience of well over 3,000 splenic images. The surgical history of the first patient makes it difficult to be certain that the splenic displacement was due only to the pseudocyst, although the marked change in splenic position over

11 days makes this probable. The causal evidence is stronger in the second case since there had been no previous abdominal surgery.

In conclusion, pancreatic pseudocyst should be included as a possible cause for such splenic displacement in radionuclide image interpretation.

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ERRATUM

Through an unfortunate mechanical error, Figs. 1 and 2 were switched in Dr. T. K. Chaudhuri's letter to the editor entitled "Some Differences between ^{87m}Sr and ^{99m}Tc -Polyphosphate in Their Secretion in the Serous Fluids" (*J Nucl Med* 16: 1208-1209, 1975). The correct figures and their captions are presented below:

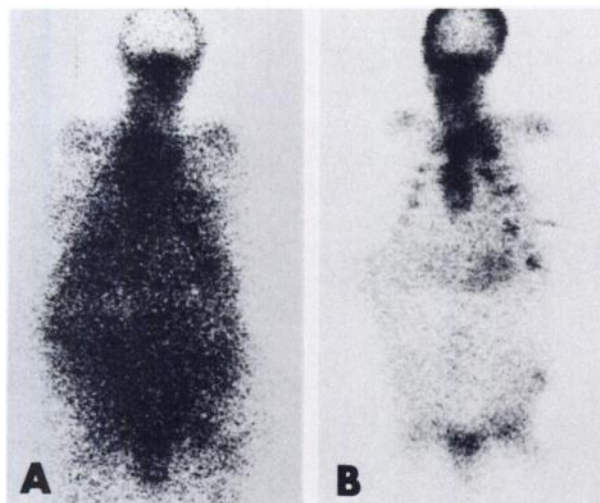


FIG. 1. (A) Strontium-87m anterior whole-body scan (3 hr after injection) of patient with massive ascites. Note diffuse abdominal activity. (B) Technetium-99m-polyphosphate scan (3 hr after injection) of same patient showing clear abdomen.

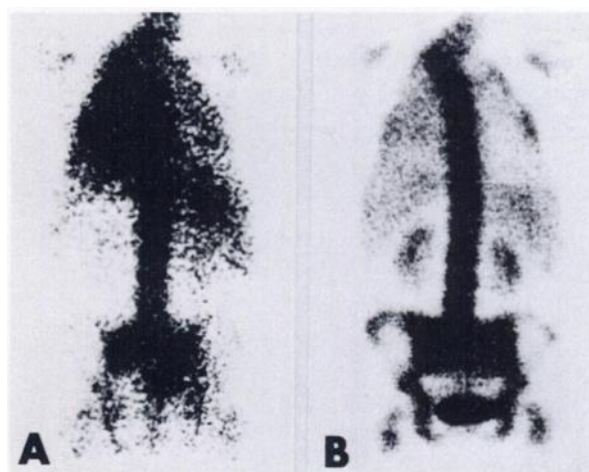


FIG. 2. (A) Strontium-87m posterior whole-body scan (3 hr after injection) of patient with massive pleural effusion. Note excessive activity in left hemithorax. (B) Same patient's ^{99m}Tc -polyphosphate bone scan shows almost no activity in hemithorax.