DIAGNOSIS OF SPLENIC ABSCESS BY RADIONUCLIDE SCANNING AND SELECTIVE ARTERIOGRAPHY

James R. LePage, Avery D. Pratt, Jr., August Miale, and William P. Calvert

University of Miami School of Medicine, Jackson Memorial Hospital, Miami, Florida

The diagnosis of splenic abscess is an unusual and difficult clinical problem. Surgery and intensive antibiotic therapy are indicated when the diagnosis is made. Before the advent of modern radiographic techniques, a definitive diagnosis rarely was made prior to surgery or death. There has been recently reported the diagnosis of two splenic cysts with arteriography (*3*), three cases of splenic abscess one of which was diagnosed with the aid of ^{99m}Tc-sulfur colloid scan (*6*) and the primary use of splenic scan in subcapsular hematoma of the spleen (*7*). We have been unable to find case reports describing the use of both ^{99m}Tc scan and arteriography in the diagnosis of splenic abscess.

This report deals with a case in which a splenic abscess was suspected clinically and ^{99m}Tc-sulfur colloid splenic scanning was used successfully as a screening procedure. The diagnosis was confirmed by selective splenic arteriography.

CASE REPORT

A 61-year-old diabetic, white male, was treated with tolbutamide for 5 years. His past medical history included a partial gastrectomy, bilateral cataract excisions, and an amputation above the right knee for peripheral vascular disease. Three months prior to the current admission, an amputation above the left knee was performed which subsequently developed a draining abscess. Two weeks later daily chills and fever developed. Following this he had several bouts of recurrent pulmonary and urinary tract infections treated with a wide variety of antibiotics including penicillin, keflin, ampicillin, and furadantin. The patient was admitted with fever, delirium, and a nontender left upper quadrant mass. A plain film of the abdomen showed a left upper quadrant abdominal mass containing a large radiolucent area (Fig. 1). Because splenic abscess was suspected clinically, the ^{99m}Tc-sulfur colloid scan was performed using the Nuclear-Chicago Pho/Gamma scintillation camera. (Fig. 2). This demonstrated a large area of decreased uptake in the spleen. The tentative diagnosis of splenic abscess was made.

A selective splenic arteriogram showed marginal hypervascularity with a preponderance of small arteries and spreading of the vessels circumferentially around a large intrasplenic mass containing the radiolucent areas (Fig. 3). The patient was taken to surgery and a large ruptured splenic abscess was found. It contained approximately 3,000 cc of liquid ma-

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For reprints contact: James R. LePage, Cardiac and Vascular Radiology, Dept. of Radiology, Jackson Memorial Hospital, Miami, Fla. 33136.

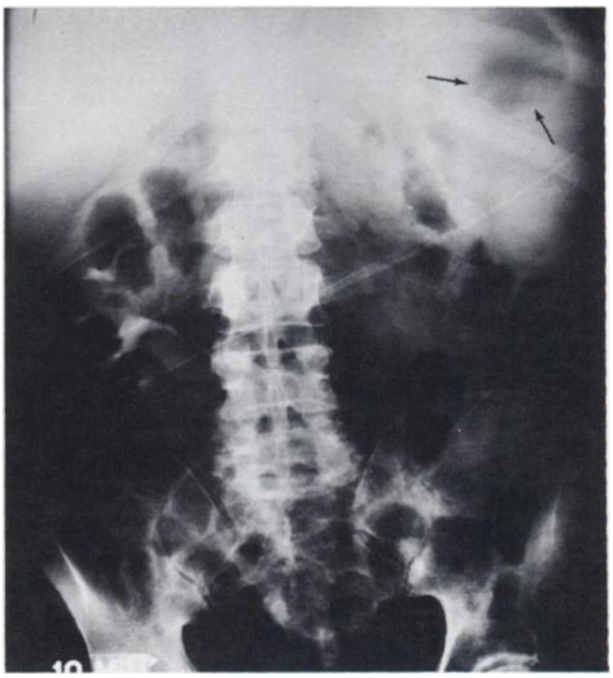

FIG. 1. IVP film of abdomen shows left upper quadrant abdominal mass with radiolucent center (arrows). Gas is also seen in stomach and large bowel. Undoubtedly because gas collection was so large, it was interpreted as stomach gas on BE and colonic gas on upper GI examinations.

FIG. 2. ^{99m}Tc-colloid scan of spleen, made with Nuclear-Chicago Pho/Gamma scintillation camera, shows area of decreased radionuclide pickup displacing normal splenic parenchyma in AP, PA, and left lateral projections, respectively.

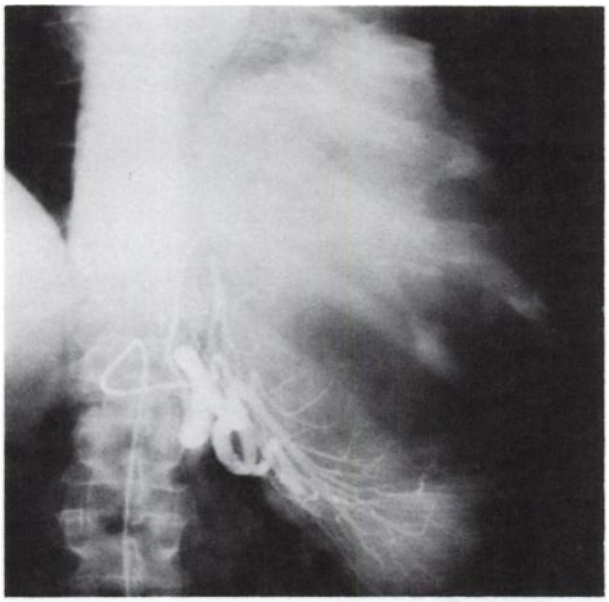

FIG. 3. Selective splenic arteriography shows displacing intrasplenic lesion. Splenic artery is displaced medially and intrasplenic arteries are circumferentially disposed around gas-containing mass. There is no tumor neovascularity.

terial and gas. Histopathological findings documented a central cavity and several smaller peripheral cavities each with a thick inflammatory wall. Gram negative cocci were also seen on the microscopic sections. The patient had a stormy postoperative course and died approximately 1 month following surgery.

DISCUSSION

Cockshott, et al (*1*) presented six cases of primary splenic abscess thought to be due to infarction of the spleen and secondary infection. In contrast, Zatkin (*8*) listed other etiological factors such as mycotic emboli and local extension of juxta-splenic, retroperitoneal infection. Most authors agree that an infected splenic abscess is a surgical emergency (*2,4,5*). The treatment is surgical excision of the spleen before rupture occurs with removal of primary foci and intensive antibiotic therapy which implies early accurate diagnosis.

The most novel approach to diagnosis was presented by Cockshott (*1*) who associated resonant percussion over a left upper quadrant mass with the diagnosis of gas abscess of the spleen. Indeed, our case showed an air shadow in the spleen on plain radiographic films. More specific yet nontraumatic methods of diagnosis would be valuable. The ^{99m}Tc-colloid scan is safe, simple, and easily performed. In this case it showed the abscess cavity as a well-defined, filling defect with a differential diagnosis of cyst, hemorrhage, and malignancy. The combination of this with the clinical picture and the arteriographic findings of an intrasplenic, gas-containing, nonmalignant mass provided the correct diagnosis.

We have been unable to find case reports describing the use of ^{99m}Tc-colloid scanning as a screening procedure followed by definitive diagnosis by selective arteriography. Our case suggests that this would be a valuable combination in the early diagnosis of splenic abscess.

ACKNOWLEDGMENT

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