

FALSE-POSITIVE LIVER SCAN IN A PATIENT WITH HEPATIC AMYLOIDOSIS: CASE REPORT

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A case of secondary hepatic amyloidosis exhibiting a large liver and multiple defects on the radiocolloid scintigraph is presented. Biopsy and angiographic studies indicated that the areas of reduced colloid uptake represented heavy amyloid deposition, and the area of the left lobe with contrasting high activity most probably represented compensatory hypertrophy.

The false-positive scan that shows abnormalities similar to those of mass lesions has been described in a number of intra- and extrahepatic conditions (1,2). The following case of hepatic amyloidosis illustrates another diffuse liver disease that poses a similar problem in the scan diagnosis.

CASE REPORT

One year prior to admission a 51-year-old man developed epigastric discomfort, increasing anorexia, weight loss, and subsequently an abdominal mass, presumably an enlarged liver. He had had pulmonary tuberculosis for 10 years and was still under

treatment. An emaciated man presented at physical examination. The liver extended 4 cm below the right costal margin but the spleen was not palpable. Laboratory examinations revealed moderate proteinuria, markedly elevated alkaline phosphatase (25.1 Bessey-Lowry units), increased ESR of 26 mm/hr, and BSP retention of 9% at 30 min. Chest radiograph revealed old tuberculous lesions in both apices.

The liver scan (200 μ Ci of ^{198}Au -colloid) showed a marked hepatomegaly, little concentration of activity in the right lobe, and an enlarged left lobe with a mass defect in the superior region (Fig. 1). Laparoscopy disclosed a uniformly brownish smooth liver. Biopsy of the right lobe revealed amorphous Congo-red-stainable material in Disse's space and vessels of the portal area, with compression atrophy and disappearance of liver cell cords (Fig. 2). In the left lobe only a few occasional lobules showed amyloidosis. Hepatic vein catheterization disclosed

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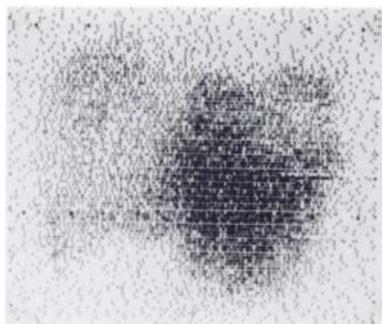


FIG. 1. Gold-198-colloid liver scintiscan showing hepatomegaly (particularly of left lobe), reduction of activity of right lobe, cold area in superolateral left lobe, and normal activity in remaining left lobe.

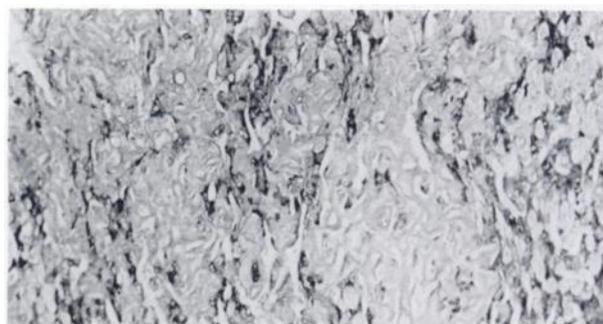


FIG. 2. Liver histology of right lobe. Note marked deposition of amorphous material throughout lobule obliterating normal structure. Liver cell cords are compressed and atrophied, or have disappeared, being replaced by deposits.

a free pressure of 140 mm H₂O and wedged pressures of 190 mm H₂O for the right lobe and 200 mm H₂O for the left. Hepatic venography and celiac angiography showed hepatomegaly, especially of the left lobe, an abnormal sinusoidal filling pattern in the right, and a normal pattern in the lower edge of the left lobe (Fig. 3).

DISCUSSION

The liver is involved in about one-half of all cases of amyloidosis (3). In the present case, amyloid de-

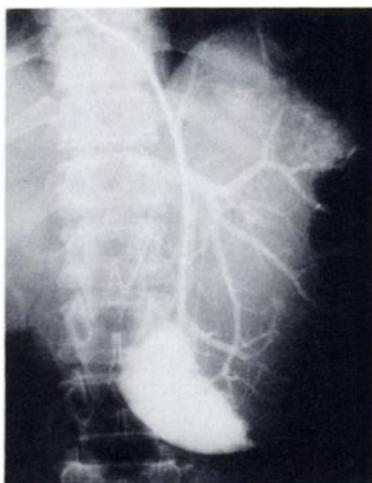


FIG. 3. Hepatic venography producing retrograde portogram delineating enlarged left lobe. Catheter tip is wedged in left-lobe caudal segment, showing normal sinusoidal filling pattern and liver edge.

posits in the liver were probably due to chronic tuberculosis of the lung, one of the commonest causes of secondary amyloidosis. Since the scan suggested multiple mass lesions, metastatic liver carcinoma was the most probable diagnosis until laparoscopy and biopsy proved otherwise. Reduced colloid uptake in the affected areas was due to impaired reticuloendothelial function and reduced sinusoidal blood flow and the left lobe presumably represented compensatory hypertrophy. The so-called false-positive liver scans or pseudotumors have been described in a number of liver diseases and perihepatic structural changes (1,2). Radiation hepatitis produces more clearly defined cold areas (4). Besides scintigraphic followup by means of various radionuclides, such additional diagnostic measures as angiography, laparoscopy, and biopsy are required to determine the nature of the defect in cases with a false-positive scan.

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SNM TECHNOLOGIST SECTION

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FOURTH CALL FOR PAPERS: NUCLEAR MEDICINE TECHNOLOGISTS PROGRAM

The Technologist Section has set aside time for a nuclear medicine technologists program at the 23rd Annual Meeting in Dallas, June 8-11, 1976.

The Scientific Program Committee welcomes the submission of abstracts for 12-minute papers from technologists for the meeting. Abstracts must be submitted on an abstract form similar to the form for general scientific papers. The length must not exceed 400 words and the format of the abstracts must follow the requirements set down for all abstracts for the scientific program. This year's form is available from the Technologist Section, Society of Nuclear Medicine, 475 Park Ave. South, New York, N. Y. 10016.

In addition, the Program Committee invites abstracts for papers from students presently enrolled in schools of nuclear medicine technology. Special time will be set aside for a student session.

Accepted abstracts will be published in the June issue of the *Journal of Nuclear Medicine Technology*. Awards will be given for outstanding papers.

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