UPTAKE OF ^{67}Ga IN SPACE-OCCUPYING LESIONS IN THE LIVER

We have read with interest the recent short article by Geslien, et al (*1*), in which attention is drawn to uptake of ^{67}Ga-citrate in the periphery of defects seen in the radiocolloid liver scan. It was suggested that the ^{67}Ga-citrate is taken up in the inflammatory zone surrounding the central necrotic amebic abscess cavity.

In a series of 110 patients (*2,3*) we have also noted this finding in both the pyogenic abscess (Fig. 1) and also, unusually, in a case of primary liver cell carcinoma complicating cirrhosis (Fig. 2). It is thought that since this finding is present in pathologic conditions other than acute hepatic amebic abscess, the appearance of peripheral uptake of ^{67}Ga-citrate is a nonspecific observation.

MERVYN MAZE
JOHN WOOD
The Royal Free Hospital
London, United Kingdom

REFERENCES

1. GESLIEN GE, THRALL JH, JOHNSON MC: Gallium scanning in acute hepatic amebic abscess. *J Nucl Med* 15: 561–563, 1974

2. JAMES O, WOOD EJ, SHERLOCK S: ^{67}Gallium scanning in the diagnosis of liver disease. *Gut* 15: 404–410, 1974

3. WOOD EJ, JAMES O, WILLIAMS HS: Liver scanning using ^{67}Ga-citrate. In *Radioaktive Isotope in Klinik und Forschung II*, Urban und Schwarzenberg: in press

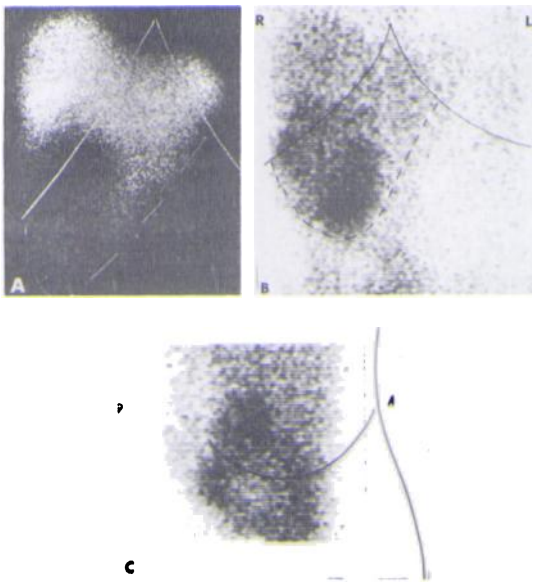

FIG. 1. Anterior-posterior scintillation camera picture (A) of liver ^{99m}Tc-colloid distribution showing filling defect in lower right lobe of an enlarged liver. Anterior-posterior (B) and (C) right lateral scintiscan projections of ^{67}Ga-citrate uptake related to defect of colloid scan. In (C) note uptake in peripheral inflammatory area surrounding pyogenic abscess from which 400 ml pus was aspirated at laparotomy.

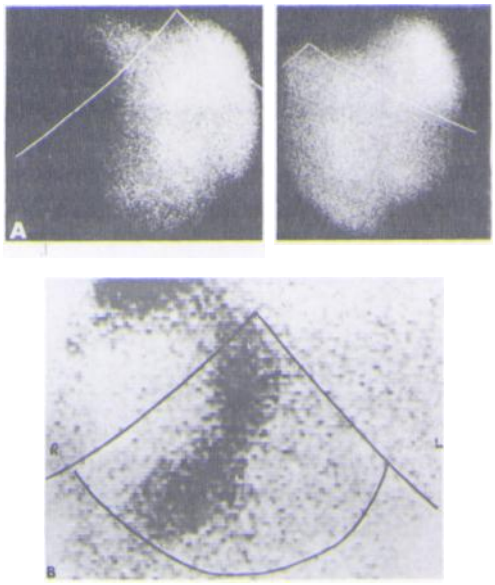

FIG. 2. Anterior-posterior scintillation camera pictures (right and left sides of abdomen) of liver ^{99m}Tc-colloid distribution showing (A) filling defect in right lobe of enlarged liver. Marked "spill-over" of colloid into spleen has occurred. Anterior-posterior ^{67}Ga-citrate scintiscan (B) shows uptake in periphery of lesion. Diagnosis of primary liver cell carcinoma complicating cirrhosis was confirmed histologically.

THE AUTHOR'S REPLY

Maze and Woods are directed to the experimental work of Blair, et al (*1*), Harvey, et al (*2*), and Burleson, et al (*3*) on the localization of ^{67}Ga-citrate in pyogenic abscesses. They found concentration of the ^{67}Ga-citrate to be greatest in the granulation tissue of the wall of the abscess and not in the central area of pus. The mechanisms whereby ^{67}Ga-citrate is localized in the abscess wall are not entirely known. However, they postulate that the abscess wall is detected because of hyperemia-increased vascularization which occurs in any inflammatory process. Gallium 67-citrate is known to bind transferrin and other plasma proteins and is carried to these areas of hyperemia and granulation tissue within the blood pool (*4*).

Blair's and Harvey's work, as mentioned in our article (*5*), is used to explain the greater concentration of ^{67}Ga-citrate in the rim of the acute hepatic amebic abscesses when scanned with ^{67}Ga-citrate.

Technetium 99m-sulfur colloid liver scans only