VISUALIZATION OF THE SPLENIC BLOOD POOL WITH ^{131}I-ROSE BENGAL

The basis for the use of ^{131}I-rose bengal in the differential diagnosis of jaundice is the demonstration of its passage into the small bowel by serial scintigraphy. Normally, this is obvious by the end of 1 hr. The obstruction of the extrahepatic biliary tract or impaired hepatocellular function leads to delay or absence of imaging of the bowel or the gallbladder or both.

Freeman (*1*) has warned of the possibility of confusion caused by the visualization of the renal images in cases of delayed excretion of ^{131}I-rose bengal which may simulate the material in the gut.

In patients with chronic hepatic disease in whom ^{131}I-rose bengal has been employed for the purpose of ruling out concomitant biliary tract obstruction, we have observed concentration of the label in the left upper abdomen which could possibly be misinterpreted as indicating excretion into the small bowel (Fig. 1). The fact that this image disappears coincident with that of the heart blood pool differentiates it from the left kidney with which it may also be confused. Review of ten cases in which this finding was recorded has revealed that in all these subjects, marked splenomegaly was present and demonstrable by colloid scan (Fig. 2). In all of them blood clearance of the label was markedly delayed (20 min clearance ratio = >90%).

FIG. 1. Scintiphoto of upper abdomen 30 min after injection of ^{131}I-rose bengal shows visualization of splenic and cardiac blood pools.

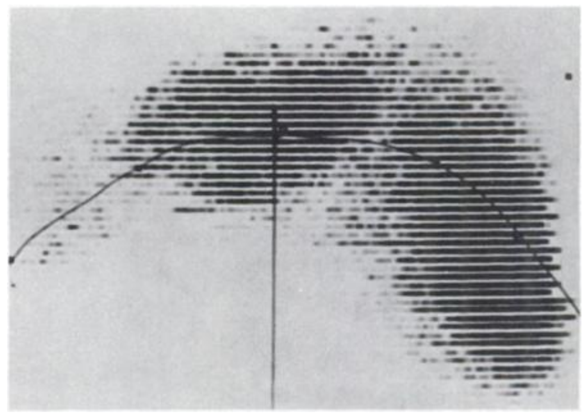

FIG. 2. Colloid scan (^{99m}Tc-sulfur colloid) of same patient.

It thus appears that persistently high concentration of ^{131}I-rose bengal in the splenic blood pool may result in visualization of this organ when it is enlarged. Awareness of this circumstance will avoid misinterpretation of excretion studies.

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THE AUTHOR'S REPLY

Dr. Rivera's comments on rose bengal visualization of the splenic blood pool are well taken. We have made the same observation in many patients with advanced cirrhosis. I do not recall any instances of such spleen visualization in patients with normal liver function. Its simultaneous disappearance with cardiac activity is good evidence for its localization in the vascular pool of the spleen. Its lateral location makes confusion with intestinal activity more likely than confusion with renal activity. As pointed out by Rivera, its constant position and decreasing activity with time should help avoid any erroneous interpretation of the study.

I am delighted to hear of this observation with the use of a long-available radiopharmaceutical that I believe is underutilized. I am optimistic that the future availability of ^{123}I-rose bengal will rekindle interest in this stimulating and useful diagnostic study in jaundiced patients.

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CANCER OF THE COLON VISUALIZED BY STRONTIUM SCINTIGRAPHY

With regard to a paper by Chaudhuri, et al (*1*) concerning a case in which there was scintigraphic (^{87m}Sr) demonstration of liver metastases secondary to a primary carcinoma of the colon, allow me to make the following comments.

The scintigraphic demonstration of reactivated colorectal cancer and especially the demonstration of local recurrences is of considerable importance for the radiotherapeutic management of these patients. As in most of the cases, an abdominoperineal resection has been performed, barium enema and digital or bimanual examinations are not feasible, and consequently the identification and localization of a recurrence is difficult until it acquires a large size. Excretory urography is not always contributory whereas other more sophisticated procedures such as arteriography and venography are time-consuming and cause considerable discomfort to the patients. Scintigraphy is a simple and easy-to-perform method but unfortunately tumors do not always concentrate radionuclides. Chaudhuri, et al (*1*) postulate a special affinity of strontium to cancer cells, but if this were the case one would expect more frequent visualization of colonic cancers, either primary or metastatic. We routinely investigate colorectal cancer patients with scintigraphy using various radionuclides. We have employed ^{67}Ga and bleomycin labeled with ^{67}Co, but better results have been obtained with ^{87m}Sr. Radioactive strontium has been useful mainly in demonstrating: (A) bone metastases and (B) recurrences in the minor pelvis, either intraosseous or extraosseous. A few cases of extraosseous recurrences in the pelvis demonstrated by ^{87m}Sr have already been reported (*2,3*). Although it may be true that strontium concentrates in extraosseous tumors according to any one of the mechanisms reported by Samuels (*4*) and Chaudhuri (*1*), it also may be true that these mechanisms differ from case to case. I am inclined to believe, however, that in the majority of cases, strontium localizes in colonic cancer because it mimics calcium. This assumption is based on the following facts: (A) it is known that primary mucinous colonic adenocarcinoma occasionally undergoes calcification often detected radiologically; (B) recurrences in the minor pelvis may become necrotic due to inadequate vascular supply. In these necrotic regions, calcium may be deposited. Then too, previous radiation therapy facilitates calcification. (C) It has been repeatedly reported that liver metastases from primary cancer of the colon may present hazy or stippled calcifications, often detectable—but not always—on the radiographs. As a matter of fact if such a calcification is recognized, the possibility of colonic cancer should be considered (*5*). (D) In the case of a recurrence in the minor pelvis, Denonvillier's fascia and the bladder wall constitute a barrier to the forward spread of the tumor. The tumor, therefore, extends posteriorly to the presacral space and the sacrum. Periosteal reaction of this bone may result in increased radioactivity although there is no actual bone involvement.

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