FALSE-POSITIVE LIVER SCAN DUE TO BREAST PROSTHESIS

Focal defects on radiocolloid liver scans may be the result of a variety of extrahepatic causes. Such false-positive scans have been reported by a number of investigators (*1–4*). Defects may be associated with diffuse hepatocellular disease, adjacent intra-abdominal or retroperitoneal tumors, and artifacts external to the abdomen. The latter group includes interference from breasts, arms, and metallic objects.

We have recently seen an unusual cause of a false-positive liver scan. A 47-year-old woman was referred for a liver scan because of slightly abnormal liver function tests. She had undergone right radical mastectomy 20 months previously for carcinoma of the breast and was being treated with chemotherapy for bone metastases. The scintiphoto (Fig. 1A) showed a distinct filling defect in the right lobe. The technician noticed that the patient was wearing a prosthetic breast. After this was removed, the scan appeared normal (Fig. 1B).

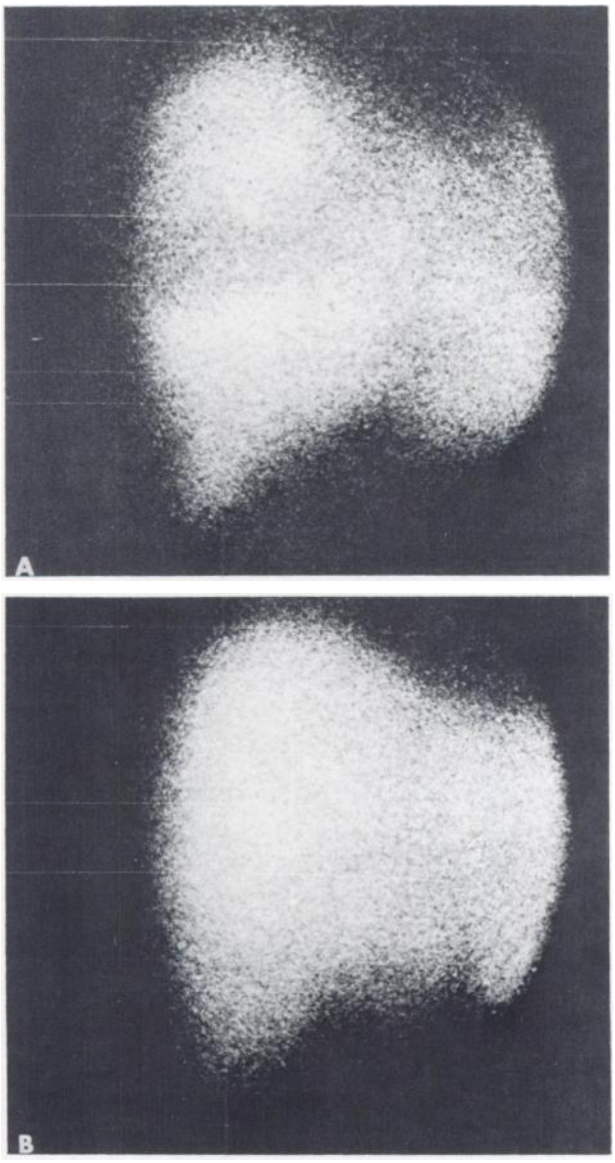

FIG. 1. Anterior liver scans of Patient (A) with breast prosthesis in place and (B) after removal of breast prothesis.

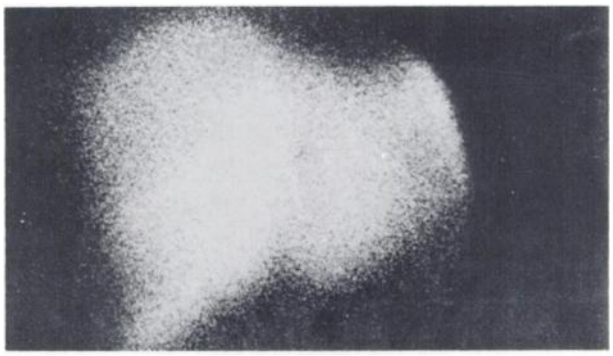

FIG. 2. Anterior liver scan showing defect in dome due to pendulous breast.

In our experience, the usual artifact attributable to a pendulous breast is a decrease in radioactivity over the dome of the liver (Fig. 2). The band-like defect seen in Fig. 1A, with relatively normal uptake in the dome, was a result of distortion of the fluid-filled prosthesis in the upright position.

This case shows the importance of awareness of extrinsic objects as causes of liver scan artifacts. The combination of adequate clinical information from the referring physician and an alert technician allowed rapid explanation of this abnormality. A breast prosthesis, causing interference with the low-energy photons of ^{99m}Tc, should be added to the list of potential causes of false-positive liver scan.

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