THYROID
Volume 13, Number 5, 2003

Images in Thyroidology*

Section Editor: Yaron Tomer

Radioiodine Uptake in Normal Female Breasts and Liver of a Patient with Differentiated Thyroid Cancer Imaged by Whole Body Scanning

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A YOUNG WOMAN with papillary thyroid cancer treated with total thyroidectomy, received an ablative dose (3000 MBq) of ^{131}I. Thyroxine had been withdrawn for 4 weeks. A whole-body scan was performed 8 days after the ablative dose of ^{131}I. The scan (Fig. 1) shows uptake in the thyroid bed caused by thyroid remnant, diffuse uptake in the liver, and uptake in both breasts. Post-^{131}I therapy scans are routinely performed in our center, because the diagnostic accuracy is greater than after a conventional tracing dose (70–150 MBq) of ^{131}I (1). Uptake in the breasts of female patients undergoing ^{131}I whole-body scanning is occasionally seen in post-therapy scans, and may be misinterpreted as being pathological. Diffuse hepatic uptake is also common in the presence of functioning thyroid remnant, and represents hepatic metabolism of iodoproteins, which may be mistaken for metastases. The normal human female breast epithelium expresses the sodium iodide symporter (2,3) and can also organify iodide. The uptake of iodide by breast tissue is currently being explored as a potential therapy for breast cancer (4).

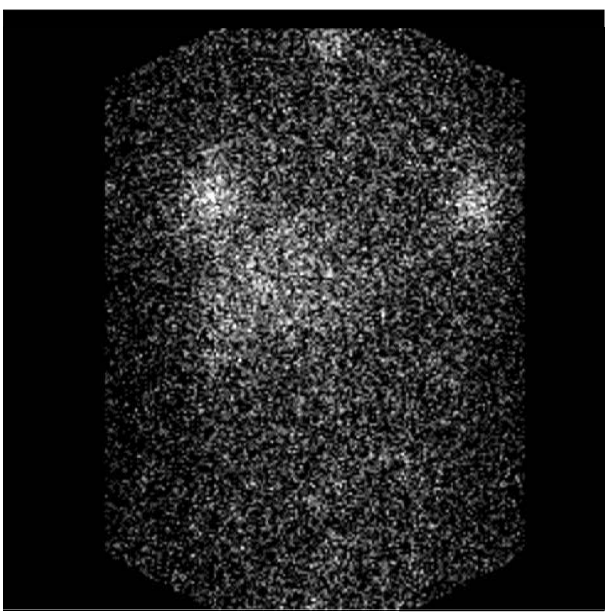

FIG. 1. A whole body scan was performed 8 days after ^{131}I ablation. The scan shows uptake in the thyroid bed, diffuse uptake in the liver and uptake in both breasts.

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