Forearm Bone Mineral Assessment

TO THE EDITOR: The article by Larcos and Wahner (*1*) was read with interest, and we noted their conclusion that ". . . DEXA is a clinically useful alternative to SPA for forearm bone mineral assessment." They have thus confirmed the results of our 1988 study (*2*), which arrived at the same result, using a ^{153}Gd dual-photon source. The 1988 communication was based on 72 consecutive cases (58 females, 14 males). The relationship between the single- and dual-photon studies showed a correlation coefficient of 0.97 for bone mineral density and 0.99 for bone mineral content. The DEXA machine has added stability to our measurements but has not changed the conclusion.

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Effect of Differential Tracer Washout During SPECT Acquisition

TO THE EDITOR: The recent paper by Links et al. (*1*) provided a nice discussion on one source of artifact and error in quantitation in SPECT studies. However, readers of this fine article might be misled into concluding that the referenced and discussed work of Bok et al. (*2*) did not contemplate or present the effects of "differential washout," i.e., the effects of rapidly changing radiotracer concentrations, on image quality and quantification with rotating gamma camera SPECT.

In our 1987 article, we stated: "The prominence of image degradation is directly related to the rate of change of the activity in the FOV during the acquisition. Both local (i.e., the relative activity distribution) and global activity changes occur with time. The first type of change is illustrated in Figure 4A, such changes in the relative spatial distribution are related to the tracer kinetics, not to the detection scheme." We noted: "In addition to degradation of image quality, nonconstant radiotracer activity in the FOV will affect image quantification." We also stated: "The use of a rotating gamma camera to record the photons emitted by a radioactive object may result in significant SPECT image artifacts if the variation of the tracer activity is rapid compared to the acquisition time. This problem does not occur with many of the radiolabeled drugs currently used in SPECT, but it may be important with future tracers."

We were delighted to see the Cardiotec simulation example (*1*) and to learn that others are finally beginning to examine this effect for rotating gamma camera SPECT. Other examples of where the variation of tracer activity during acquisition will be important are neuroreceptor studies and brain and body tumor studies.

Finally, we were appalled to read in (*1*) that the results of our pioneering publication (*2*) "have been used by others to justify the use of radiotracers such as teboroxime with SPECT." To this end, the work of Links et al. is valuable and underscores our original message "rotating gamma camera SPECT studies are susceptible to image distortion from activity variation during the sequential data acquisition procedure." Practitioners of this imaging technology need to be very cognizant of this fact and assess whether it is relevant to their own SPECT applications.

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Decision Analysis After an Indeterminate Probability Lung Scan

TO THE EDITOR: We read with interest the article of Drs. Quinn and Butler (*1*) about a decision analysis approach to the treatment of patients with an indeterminate probability lung scan. Decision analysis can give better insight on how to optimally manage these patients. The use of data from different literature sources, however, has the pitfall of comparing different patient populations with different prevalences of disease, as might be the case in this analysis. Furthermore, we have two questions and one comment about their analysis.

1. The mortality and morbidity rates presented by the authors are the results of mathematical products and sums of sensitivities, specificities and frequencies gathered from literature data, each having there own confidence limits. To be able to judge the calculated mortality and morbidity rates and the differences between them, the reader needs to know the magnitude of the confidence limits and whether and which of the differences are statistically significant. Is it perhaps possible for the authors to calculate and present these data?

2. The authors refer to the study of Hull et al. (*2*) in which patients with an indeterminate lung scan without venous thrombosis of the legs had a good prognosis without anticoagulant therapy. They state that more work has to be done before this experience can have widespread clinical implications. Perhaps the authors can provide comments on the consequences of the