

activity, that room air contamination is higher in patients with a tracheostomy. While such levels of activity are not considered a health hazard, it may be prudent for hospital staff entering the room to wear disposable masks, in keeping with ALARA (as low as reasonably achievable) principles.

This case suggests an association between thyroid cancer treatment with radioiodine and a dramatic increase in room surface contamination due to a tracheostomy. Such contamination should be anticipated in advance and steps should be taken both to protect the floor and other objects in the room and to limit the release of radioactive droplets of sputum into the air.

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Ronald S. Kappes
Salil D. Sarkar
Gady Har-El
Arnold M. Strashun
Eddy K. Dunn
George C. Schussler
Kings County Hospital Center
SUNY Health Science Center
Brooklyn, New York

Strontium-89 for the Palliation of Bone Pain due to Metastatic Disease

TO THE EDITOR: There is a lack of data regarding the utility of strontium-89 (^{89}Sr) in relieving bone pain due to bony metastases from tumors other than prostate, breast and lung. Similarly, there are no data regarding the benefit of administering a second dose of ^{89}Sr to patients who failed to receive any significant pain relief from their initial therapy. To address these issues, a survey was mailed to all 136 members of the Therapy Council. There were 49 responses. Of the 49 physicians completing the questionnaire, 22 had treated patients with tumors other than prostate, breast and bone. They listed the tumor type and classified the response to therapy as none, partial and dramatic. The results are presented in Table 1. Seven of the 49 respondents had also administered a second dose of ^{89}Sr to patients who had failed to respond to the first dose. The tumor types and responses are presented in Table 2.

TABLE 1
Pain Palliation Following Strontium-89 Therapy in Patients with Tumors Other Than Breast, Lung and Prostate

Tumor type	Response		
	None	Partial	Dramatic
Bladder	—	1	—
Cholangiocarcinoma (Klatskin's tumor)	—	—	1
Colon	1	2	3
Eosinophilic granuloma	—	1	—
Esophageal	—	1	1
Liver	1	—	—
Lung	1	3	1
Lymphoma	2	—	—
Melanoma	1	—	—
Multiple myeloma	—	4	—
Neuroblastoma	1	1	—
Paget's disease of vagina	—	1	—
Renal Cell	2	3	—
Salivary	—	2	—
Sarcoma	2	1	—
Thyroid	—	2	2
Unknown primary	—	2	2

TABLE 2
Pain Palliation Following a Second Dose of Strontium-89 in Patients Who Failed to Respond to the Initial Treatment

Tumor type	Response		
	None	Partial	Dramatic
Breast	1	4	1
Lung	—	1	1
Prostate	2	11	—

Although the survey consists of retrospective and uncontrolled data, the results seem to indicate that bone pain from tumors other than breast, prostate and lung can be alleviated by ^{89}Sr and that patients who fail to respond to an initial dose may benefit from a second treatment.

Andrew J. Taylor, Jr.
Emory University School of Medicine
Atlanta, Georgia

Formulas to Estimate Renal Depth in Adults

TO THE EDITOR: I recently received a call pointing out that the coefficient for weight/height in the equation for the right renal depth as reported in the abstract of my recently published manuscript (1) was slightly different from the coefficient as reported in the results. When I reviewed the original data to determine the correct coefficient, I also discovered that the constant had an incorrect sign. The correct equation is the following: right renal depth (mm) = 151.3 weight/height + 0.22 age - 0.77 with weight in kg and height in cm. I apologize for the error. Fortunately, both formulas fit the data equally well, and there is no statistically significant difference between them.

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Andrew Taylor, Jr.
Emory University School of Medicine
Atlanta, Georgia

Combined Intravenous Dipyridamole and Symptom-Related Stress Testing

TO THE EDITOR: We were very interested in the recent publication by Ignaszewski et al. concerning the use of combined intravenous dipyridamole and symptom-related stress testing with thallium imaging in patients with coronary disease (1).

In 1988, in our nuclear cardiology laboratory, we felt that there was a large part of the population that was not well served by the lab. Those that could stress to at least 90% of the target heart rate could get a standard Bruce protocol stress test with thallium. Those who we knew could exercise only to a very limited degree or not at all received intravenous Persantine with ^{201}Tl imaging. Unfortunately, a very large part of our patient population fits in between these two categories. They can certainly exercise to some degree but not to 90% of their target heart rate as we expected.

It was our belief at that time that combining both intravenous Persantine and whatever exercise the patient could manage would likely be better from our point of view in that we would get both a pharmacologic and physiologic stress on the patient's heart at the same time. It has been our protocol since October of 1988 to give patients a bolus of Persantine based on size, approximately a minute or two before they could not exercise further. This would be followed by a thallium injection and a further minute of exercise. While we have not done a controlled study comparing these images with patients who exercise to a submaximal rate or get Persantine alone with thallium, we feel that the images are of an excellent quality and there is certainly no problem with liver and gut uptake as is often experienced with a resting Persantine infusion.

We would like to congratulate the authors on bringing forth this information as we think that it is very important.

Our laboratory at the Credit Valley Hospital and the attached outpatient facility have now done a total of 3,595 combined intravenous dipyridamole/symptom-limited exercise stress tests with thallium imaging since October of 1988. The side effects as expected from the Persantine are minimal and our complication rate is extremely low. In fact, only two patients (0.08%) had to receive intravenous aminophylline to help reverse significant angina.

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Maurice N. Druck
Anne Taylor
Gayle Bouchard
Judith Katz
The Credit Valley Hospital
Mississauga, Ontario, Canada

Technetium-99m-Sestamibi Imaging in Breast Cancer: An Alternative to Thallium-201 Imaging

TO THE EDITOR: Radionuclide imaging has mainly focused on detecting distant metastases in patients with breast cancer. Bone scans now have a definite role in the follow-up of these patients. Experience in demonstrating the primary tumor with radionuclides in breast cancer is rather limited. There has been little effort to find a radionuclide allowing us to determine the nature (i.e., benign or malignant?) of the breast lesion detected by palpation and/or mammography. Lee et al. made a significant contribution to this effort with their recent study (1) in which they investigated the diagnostic specificity of ^{201}Tl imaging for breast cancer and its efficacy as a complement to mammography. Their results confirm the previously published reports and support a well known idea that ^{201}Tl imaging could be used in the management of breast cancer (2,3). They also reviewed the previous clinical trials with some other radiotracers (1), including $^{99\text{m}}\text{Tc}$ -pertechnetate, ^{67}Ga and $^{99\text{m}}\text{Tc}$ labeled phosphates. I would like to complete their discussion by bringing the recent efforts with $^{99\text{m}}\text{Tc}$ -sestamibi to your attention. Following our initial report in a limited number of patients with breast cancer in whom we compared $^{99\text{m}}\text{Tc}$ -sestamibi with ^{201}Tl and obtained higher detectability with the former (4), excellent results have been reported confirming the value of $^{99\text{m}}\text{Tc}$ -sestamibi imaging in the management of breast cancer (5-10). Considering the poor physical characteristics of ^{201}Tl (i.e., long half-life which restricts the use of larger doses for better count statistics and low photon energy which unavoidably results in some attenuation in tissues such as breast, particularly in large and dense breasts), $^{99\text{m}}\text{Tc}$ -sestamibi appears to be an alternative to ^{201}Tl in the imaging of breast cancer and its axillary metastasis. In addition, $^{99\text{m}}\text{Tc}$ -sestamibi has the practical advantages of availability in kit form, which is important in the management of breast cancer since both the surgeon and the patient are usually difficult to persuade for waiting even a few days for a noninvasive method to predict the nature of a mass in the breast before the surgeon proceeds to a biopsy. Although Lee et al. did not suggest that ^{201}Tl imaging could replace biopsy in the initial diagnosis, waiting a few days (sometimes a week to 10 days for some departments) to supply ^{201}Tl may not be tolerated by the patient even in a scenario (as suggested by Lee et al.) in which the mammogram result is abnormal yet considered indeterminate or benign and ^{201}Tl is proposed as a third alternative to short-term periodic mammography and biopsy (1). Technetium-99m-sestamibi imaging could replace ^{201}Tl in such a scenario in which a same-day immediate imaging could be possible only 10-15 min after the injection of this agent (4).

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