

TSH values greater than 50–100  $\mu\text{U}/\text{ml}$ . They frequently have to miss work for varying periods of time, both during and after the scan; in contrast, thallium scans can be accomplished while a patient is euthyroid and, also, can be performed within a short time period from the current clinic visit, if there is a clinical suspicion of recurrence of disease. This advantage may be useful when patients have come from a long distance. A negative thallium scan should not dissuade the physician from further evaluation to determine if thyroid cancer is present, but a positive scan, in these circumstances, would help point further evaluation in a concise, directed manner. Lastly, it must be remembered that being hypothyroid, with the resultant TSH stimulation that occurs, may allow regrowth of tumor; TSH is believed to be a growth promoting factor (2). This fact underlies the tenet that sufficient thyroxine must be administered to a patient with thyroid cancer to suppress the serum TSH level into the undetectable range.

Thus, in summary, we continue to believe, as noted in our article, that radioiodine scans, periodic neck examination, and serum thyroglobulin levels are the cornerstones of evaluation in a patient with thyroid cancer. In selected patients, thallium scans are helpful because the patient can remain euthyroid while the test is performed; in some cases, thallium may be even better than radioiodine scans in detecting the presence or extent of thyroid cancer, especially in less differentiated tumors. Adjunctive thallium scanning may help identify lesions that can then be visualized and analyzed by MRI techniques. Further studies comparing the utility of radioiodine and thallium, as well as attempts to find newer and more effective scanning agents, need to be performed.

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#### REFERENCES

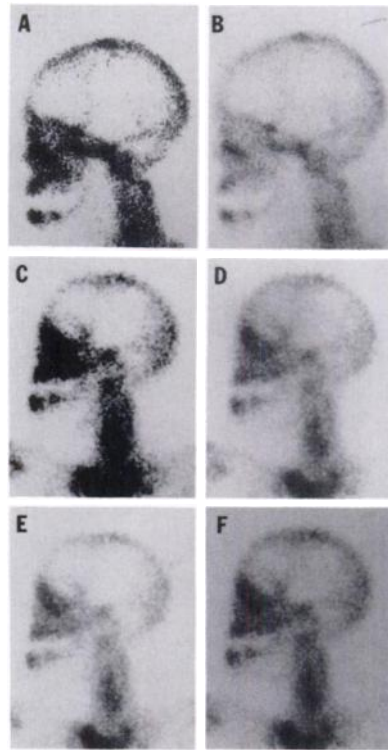
1. Burman KD, Anderson JH, Wartofsky L, et al. Management of patients with thyroid carcinoma: application of thallium-201 scintigraphy and magnetic resonance imaging. *J Nucl Med* 1990;31:1958–1964.
2. Clark, OH. TSH suppression in the management of thyroid nodules and thyroid cancer. *World J Surg* 1981;5:39–47.

Kenneth D. Burman  
Jay H. Anderson  
Leonard Wartofsky  
Dennis P. Mong  
James J. Jelinek

Walter Reed Army Medical Center  
Washington, DC

#### Pseudodata

**TO THE EDITOR:** One of the most disconcerting problems with which a reviewer of nuclear medicine manuscripts must contend is the frequent poor quality of images submitted. Quite often an otherwise excellent paper must be rejected because the data that the author wished to depict was ruined by improper photographic presentation. Whereas numerical data when care-



**FIGURE 1.** Varying computer enhancement; identical photographic technique. (A) Scaled from 15% to 70% maximum pixel count, the hotter areas are enhanced and background is subtracted. (B) Scaled from 0% to 100% maximum pixel count, an unenhanced image is depicted. Four images printed from the same negative; varying photographic technique. (C) A high-contrast filter is used, 4-sec exposure. (D) A low-contrast filter is used, 4-sec exposure. (E) A low-contrast filter is used, 2-sec exposure. (F) A low-contrast filter is used, 8-sec exposure. Images A and C could have occurred prior to a renal transplant and B and D 3 mo later and the difference could be attributed to healing of renal osteodystrophy. In fact, all six images are from the same patient taken at the same time. Images A and B are a computer acquisition and C-F are an analog image.

fully obtained can be evaluated and compared using well-defined statistical methods, data resulting from image interpretation are not so easily handled.

Numerous pitfalls can befall the author and must be avoided to ensure the high quality of our nuclear medicine literature. Acquisition parameters (information density, scintillation camera photographic factors, etc.) must be standardized so that images acquired at different times are comparable. Computer images must all be presented with no or the same degree of image enhancement and/or background subtraction (Fig. 1A–B) and the parameters of manipulation described. Photographic methods should be consistent using the same type of film, the same exposure times, the same print paper, and the same darkroom techniques for all images within the same study (Fig. 1C–F). Every attempt must be made to eliminate technical differences in the photographs submitted or pseudodata will result.

It is the absolute responsibility of any author who submits images for publication to monitor the photographic work and to direct the photo lab to produce images that truly represent real data. This requires a basic knowledge of photographic techniques so that even if the photo lab is not knowledgeable in nuclear medicine imaging, their output will be highly sophisticated. Unclear medicine must be avoided.

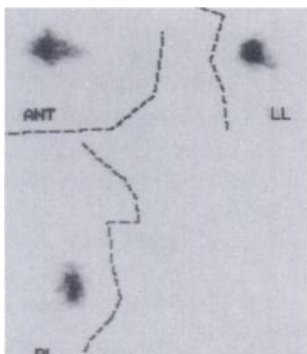
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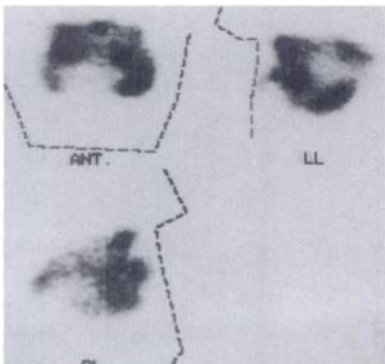
**Peter W. Blue**  
*Fitzsimons Army Medical Center*  
*Aurora, Colorado*

**Scintigraphic Demonstration of the Adherence of Technetium-99m-Sucralfate to Oral Microlesions**

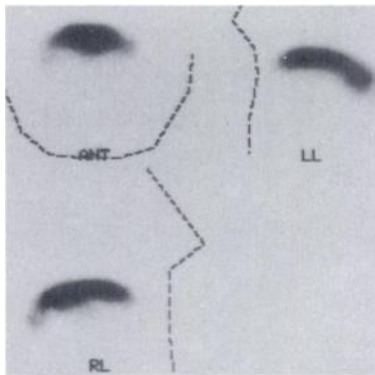
**TO THE EDITOR:** Technetium-99m-Sucralfate has been used in the detection of gastric and duodenal ulcers because it adheres to the site of mucosal ulceration. It forms insoluble complexes with exposed proteins in an acid milieu (1). Unlabeled sucralfate is effective in preventing chemo- and radiotherapy-induced oral mucositis (2). We tried to demonstrate the adherence of sucralfate to oral lesions in a small nonselected group of patients. Thirteen patients were studied: four patients with chemo-radio-induced mucositis, four with non-neoplastic oral lesions, and five controls without gross mucosal abnormalities. Patients were invited to simply swish in the mouth a 2-ml suspension of <sup>99m</sup>Tc-sucralfate obtained from a carefully mixed commercial preparation. Activity was about 50 MBq for each patient. After swishing, patients spat out the sucralfate and rinsed their mouths with water several times. No radioactive sucralfate was swallowed. Static images at 15 min were acquired with a large field of view gamma camera with an electronic 3.5 zoom in the anterior and R-L lateral views. In the control patients, there was a slight, diffuse, persistence of activity in the mouth, without focal uptake (Fig. 1). In all cases with macroscopic lesions, a relatively larger uptake of labeled



**FIGURE 1.** Normal distribution of <sup>99m</sup>Tc-sucralfate.



**FIGURE 2.** Adherence of <sup>99m</sup>Tc-sucralfate to non-neoplastic ulcers.



**FIGURE 3.** Adherence of <sup>99m</sup>Tc-sucralfate to palatal microlesions caused by a totally removable dental prosthesis.

sucralfate was detected (Fig. 2). In two out of five control patients, diffuse activity of the hard palate associated with diffuse microlesions caused by dental prosthesis (Fig. 3) was found.

In conclusion, we think that sucralfate is a valuable agent against therapeutically induced oral mucositis. The scintigraphic demonstration of a more active sucralfate adherence to minimal lesions in control patients suggests that: (a) sucralfate adheres even to microscopic lesions and (b) a prophylactic effect could result from a prevention of the worsening of such lesions induced by therapy.

**REFERENCES**

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2. Solomon MA. Oral sucralfate suspension for mucositis. *N Eng J Med* 1986;315:459-460.

**Adriano Bonazza**  
**Guglielmo Fila**  
**Salvatore Gravili**  
*Regional General Hospital*  
*Venezia, Italy*

**Tracer Resorption and Apposition in a Rat Tibial Fracture Model**

**TO THE EDITOR:** Recently, Shani et al. published their excellent results in the *Journal* on "Correlations Between Uptake of Technetium, Calcium, Phosphate, and Mineralization in Rat Tibial Repair" (1). One conclusion of this investigation states "The observation that the increased uptake of <sup>99m</sup>Tc occurs at a time when bone formation is predominant, and before any bone

**TABLE 1**  
**Iodine-125-Phenylphosphonic Acid Resorption From Fracture Site as a Function of Time\***

Component	Fraction	T <sub>1/2</sub> bio in days
I	0.31	2.0
II	0.69	55.4

\* Fraction resorbed = 1 - (0.31e<sup>-0.347t</sup> + 0.69e<sup>-0.0125t</sup>).