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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 ^{99m}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

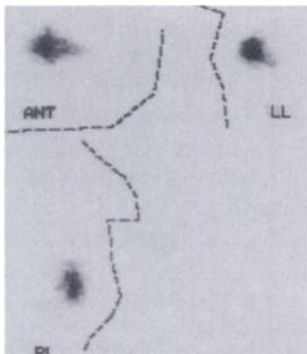


FIGURE 1. Normal distribution of ^{99m}Tc-sucralfate.

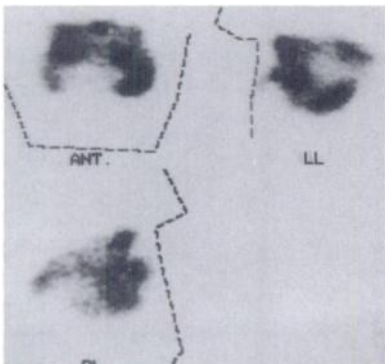


FIGURE 2. Adherence of ^{99m}Tc-sucralfate to non-neoplastic ulcers.

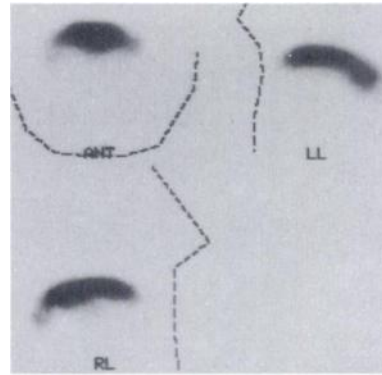


FIGURE 3. Adherence of ^{99m}Tc-sucralfate to palatal microlesions caused by a totally removable dental prosthesis.

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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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 ^{99m}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 _{1/2} bio in days
I	0.31	2.0
II	0.69	55.4

* Fraction resorbed = 1 - (0.31e^{-0.347t} + 0.69e^{-0.0125t}).