

UDALRICH BUELL
CARL-MARTIN KIRSCH
EDUARD KLEINHANS
BRIGITTE JÄGER
University of Munich
Federal Republic of Germany

FOOTNOTE

* Proctor & Gamble by courtesy of Byk-Mallinckrodt, one vial contained 3.0 mg of HMDP and 0.24 mg of SnCl₂, five patients per vial, 10.8 mCi (400 MBQ) per patient.

REFERENCES

1. LITTLEFIELD JL, RUDD TG: Tc-99m hydroxymethylene diphosphonate and Tc-99m methylene diphosphonate: Biological and clinical comparison: Concise communication. *J Nucl Med* 24: 463-466, 1983
2. DOMSTAD PA, COUPAL JJ, KIM EE, et al: ^{99m}Tc-hydroxymethane diphosphonate: a new bone imaging agent with a low tin content. *Radiology* 136:209-211, 1980
3. ROSENTHALL L, ARZUMANIAN A, DAMTEW B, et al: A crossover study comparing Tc-99m-labeled HMDP and MDP in patients. *Clin Nucl Med* 6:353-355, 1981
4. BUELL U, KLEINHANS E, ZORN-BOPP E, et al: A comparison of bone imaging with Tc-99m DPD and Tc-99m MDP: Concise communication. *J Nucl Med* 24:214-217, 1982
5. MELE M, CONTE E, FRATELLO A, et al: Computer analysis of Tc-99m DPD and Tc-99m MDP kinetics in human: Concise communication. *J Nucl Med* 24:334-338, 1983
6. PAUWELS EKJ, BLOM J, CAMPS JAJ, et al: A comparison between the diagnostic efficacy of ^{99m}Tc-MDP, ^{99m}Tc-DPD and ^{99m}Tc-HDP for detection of bone metastases. *Eur J Nucl Med* 8:118-122, 1983

Reply

We can indeed welcome the additional data provided by Drs. Buell, Kirsch, Kleinhans, and Jager comparing Tc-99m hydroxymethylene diphosphonate (HMDP) and Tc-99m methylene diphosphonate (MDP). Since their comparative imaging data were obtained 2 hr following injection, and ours were obtained at 4 hr bone-to-soft tissue ratios are not strictly comparable. Also, we used the entire contents of a single reaction vial for each study rather than "loading" the reaction vial with a large amount of Tc-99m and dispensing several doses from one vial. Whether and how this may influence labeling efficiency or biodistribution is unknown.

Regarding our study, care was taken to prepare all radiopharmaceuticals in a similar manner and the order of administration was randomized.

The effect of incubation time on the biodistribution of MDP, demonstrated by Henkin and associates as well as Buell and associates (1,2), is of interest and deserves additional study.

We agree with the statement "more work is needed to explain the differences in biokinetics (of the various diphosphonates) at the target rather than solely describe them."

THOMAS G. RUDD
JAMES L. LITTLEFIELD
Harborview Medical Center
Seattle, Washington

REFERENCES

1. HENKIN RE, WOODRUFF A, CHANG W, et al: The effect

of radiopharmaceutical incubation time on bone scan quality. *Radiology* 135:463-466, 1980

2. BUELL U, KLEINHANS E, ZORN-BOPP E, et al: A comparison of bone imaging with Tc-99m DPD and Tc-99m MDP: Concise communication. *J Nucl Med* 23:214-217, 1982

Tc-99m MDP and Ga-67 Citrate Accumulation in Cutaneous Metastases from Colon Carcinoma

A 58-yr-old male who had undergone resection of an adenocarcinoma of the colon the previous spring, presented at our institution in the fall of 1982 with abdominal discomfort and multiple subcutaneous nodules on the thorax, abdomen, and lower extremities. Biopsy of these nodules revealed adenocarcinoma consistent with the patient's known colonic primary.

Whole-body bone scintigraphy was performed following intravenous injection of 20 mCi of Tc-99m MDP; gallium scintigraphy was performed 48 hr after intravenous injection of 5 mCi of Ga-67 citrate.

Bone imaging demonstrated abnormalities of the thoracolumbar spine and sternum without definite evidence of abnormal soft-tissue accumulation of the tracer in the thorax or abdomen (Figs. 1 and 2). Focal soft-tissue accumulation of the Tc-99m MDP was noted in both lower extremities, and these foci corresponded to the subcutaneous nodules (Fig 3).

On gallium scintigraphy, abnormal soft-tissue accumulation was seen in the left anterior hemithorax (Fig 1). The osseous abnormalities were less clearly appreciated on this study. Initially, no corresponding abnormality was seen on bone scintigraphy, but in retrospect such a focus could have been obscured by underlying rib activity. A solitary focus of abnormal gallium accumulation in the left flank (Fig 2) did not accumulate the bone agent; it was

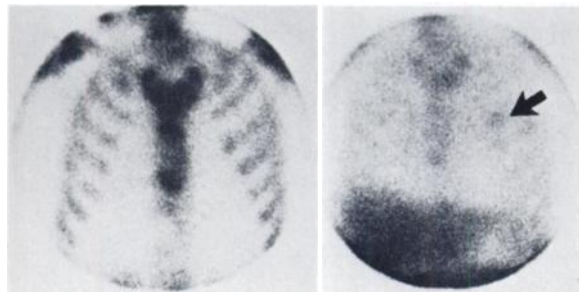


FIG. 1. Anterior thorax: Bone image (left): Irregular uptake of Tc-99m MDP in sternum—no definite abnormal soft-tissue activity. Gallium image (right): Abnormal accumulation of imaging agent in subcutaneous nodule (arrow); irregular uptake in sternum.

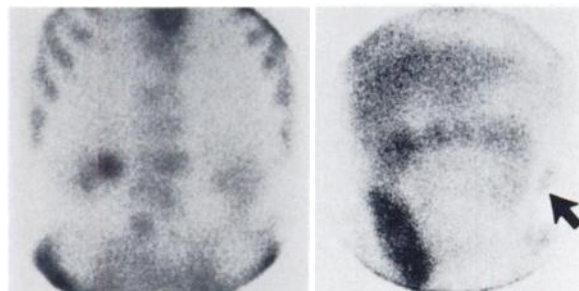


FIG. 2. Anterior abdomen: Bone image (left): No focal soft-tissue abnormality. Gallium image (right): Abnormal activity in left flank nodule (arrow).