

stration however the excretion of Pyrop was seemed to be relatively rapid rather than that of Polyp.

The accumulation rates of these agents in processor time in various normal portions of the skeleton, measured externally by means of the AOI of VTR, were highest on 3–4 hours for Pyrop and on 4–5 hours for Polyp. And, the accumulation rates in the various lesions were highest on approximately 4 hours for either agent, and on 24 hours still higher than in normal portions. Consequently, lesion/normal accumulation ratios were gradually increased at least till 24 hours, and showed no tendency between benign

and malignant lesions.

On the other hand, bone images on scintigram for either agent were clearly observed as early as one hour after the administration, and were most clear on about 4 hours.

Metastatic lesions were occasionally detectable by scintigram before the roentgenologic abnormality could be found. But, diffuse and systemic lesions as multiple myeloma were frequently misread to be less than actual number of lesions detectable on X-ray photogram, and osteolytic bone lesions were liable to err to be detected unlike osteoblastic lesions for either agents.

### **Bone Imaging and Tumor Imaging in Neoplastic Bone Disease**

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Clinical experience with  $^{67}\text{Ga}$  scanning in osteogenic sarcoma, bone metastasis of breast cancer, giant-cell tumor, histiocytosis X, multiple enchondromatosis, and bone cyst, led us to recognition of tumor imaging against skeletal imaging in bone neoplasms (Radiology 107: 123, 1973). Binuclidal studies on experimental VX-2 bone tumor were undertaken in the rabbit in order to demonstrate (1) bone imaging was  $^{85}\text{Sr}$ ,

$^{87\text{m}}\text{Sr}$ ,  $^{99\text{m}}\text{Tc}$  pyrophosphate,  $^{67}\text{Ga}$  and  $^{99\text{m}}\text{Tc}$  bleomycin; (2) tumor imaging with  $^{67}\text{Ga}$  and  $^{99\text{m}}\text{Tc}$  bleomycin; and (3) absence of tumor imaging of  $^{85}\text{Sr}$ ,  $^{87\text{m}}\text{Sr}$ , and  $^{99\text{m}}\text{Tc}$  pyrophosphate.

Apparently, scanning of bone neoplasms with  $^{67}\text{Ga}$ , and  $^{99\text{m}}\text{Tc}$  bleomycin, both tumor scanning agents, would be of great help in delimiting fields of surgery and teletherapy.

### **Radiation Damage of Rabbit Bone Following Partial Irradiation**

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If a bone was included in a irradiation field and the dose received was over the tolerable

limit of the tissue, the late bone damage would become manifest in several months or years after