
It is a crucial problem to analyze the mechanism of development of bone metastasis in malignant neoplasms, alone the analysis is indispensable to catch up with treatments and prevent bone metastasis. From these points of views, we investigated the role of Prostaglandin E (PGE) and its correlation between bone and bone marrow scintigraphy in normal and VX-2-bearing rabbits. PGE in plasma of normal rabbits was 486.2 ± 105.7 pg/ml (n=86) and maximum to minimum ratio (Max/Min) was 1.85 ± 0.26 within four weeks' observations. In VX-2 rabbits, transplanted in femoral muscles, PGE was within normal range unless tumor invaded bone. PGE did not increase significantly in rabbits transplanted in pelvis when tumor was located inside the narrow cavity. However, when tumor invaded bone, PGE increased to 1335 ± 584 pg/ml. Elevation of PGE did not necessary coincide with appearance-time of bone scan. PGE treated by indomethacin was not higher than that untreated group. Appearance-time of positivity of bone scans did not reveal any significant difference between the two groups.


It has been well recognized that bone scan is a sensitive indicator of bony pathology but not so specific. We had already reported the value of tumor scan with Ga-67 citrate, in the differentiation of various bone lesions.

The purpose of this study is to examine the possibility of differential diagnosis of various bone pathologies, using bone scan and tumor scans with Ga-67 citrate and TI-201 chloride.

35 patients with various bone lesions, including 13 malignant primary bone tumors, 10 metastatic bone tumors and 12 benign bone lesions, were examined by bone scintigraphy and tumor scintigraphy simultaneously.

The active accumulation on bone scans was observed in 32 (91.4%) of 35. In the same cases, to which three different scanning agents were administered, the avid accumulation on these three scans was shown in 10 (76.9%) of 13 malignant bone tumors, 5 (50%) of 10 metastatic bone tumors and 2 (16.7%) of 12 benign bone tumors and other lesions.

The results showed that the avid accumulation on the three different scans suggests high possibility of malignant bone tumors. The additional efficacy in the differential diagnosis has been shown as the avid accumulation on three different scans.


From April 1980 through April 1980, 1196 cases of bone scintigrams were studied with special respect on abnormal accumulation in the head. Out of 1196 cases, 153 cases with abnormal findings were found. Seventy two cases of which were widespread bone metastasis. Post operative accumulation after craniotomy was 16 cases, and abnormal accumulations in tooth caries were 23 cases. The remaining 42 cases of abnormal accumulation in the cranial bones were as follows; 22 cases underwent progression of malignancy, and 17 cases remained unchanged. Among malignant metastases with abnormal accumulations, lung cancer patients showed more cases of progression, while those of breast cancer showed less. In 6 cases, orbital accumulation of unknown mechanism were found.