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SCHINTIGRAPHY OF PRIMARY BONE TUMOR WITH Tc-99m PHOSPHATES AND Ga-67 CITRATE. Y. YAMAGISHI, S. SHIBA, K. HONDA, E. NAKAZAWA, F. HIKITA, S. HOSOI, A. OKUYAMA, S. SAWANO, S. MITANIHARA, H. OMIGAWA. Dep. of Radiology, Nippon Medical School. (Director; Prof. T. SAITOH)

40 cases of primary bone tumor, pathologically diagnosed were examined by scintigraphy with Tc-99m phosphates and Ga-67 citrate simultaneously. In some cases, X-ray angiography were performed. X-ray picture, bone scintigram, tumor scintigraphy and X-ray angiogram were studied and evaluated as an usefulness of differential diagnosis of primary bone tumors.

Result: Bone Tumor 40 Cases

Malignant 10

	Scintigram		Angiogram	
	Tc positive	Ga positive	n.v.	t.s.
Osteosarcoma	2/3	2/3	3/3	3/3
Multiple myeloma	3/3	3/3		
Fibrosarcoma	1/1	1/1	1/1	1/1
Adamantinoma	2/2	2/2		
Chondrosarcoma	1/1	1/1	1/1	1/1

denominator: No. of cases  
numerator: No. of positive  
n.v.: neo-vascularity  
t.s.: tumor stain

Benign 30

Osteochondroma	7/8	3/8		
Solitary bone cyst	3/6	3/6	0/2	0/2
Giant cell tumor	5/5	4/5	5/5	5/5
Enchondroma	2/2	2/2		
Miscellaneous	3/4	1/4		

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THE VALUE OF BONE SCANNING IN THE DIAGNOSIS OF PRIMARY BONE TUMOR USING TUMOR SCAN TOGETHER. Y. Kuniyasu, H. Kakehi, Y. Kawada, Y. Nii, M. Yamamoto, J. Nagai, S. Mimoto, K. Oyama and M. Yasuda. Dept. of Radiology, Teikyo University School of Medicine. Tokyo.

Although radionuclide imaging of the skeletal system has long been recognized as a sensitive indicator of bony pathology, the reputation of poor specificity has impeded the widespread use of bone scanning. The purpose of this study is to evaluate the additional efficacy in the diagnosis of primary bone tumor and metastatic one, due to using the three different scanning agents. Bone scintigraphic studies with Tc-99m phosphates were performed in 216 subjects, including various bone tumors. The active accumulation on the bone scans was observed in 50 (89.3%) of 56 primary malignant bone tumors, 33 (82.5%) of 40 benign ones and 112 (93.3%) of 120 metastatic ones. Sensitivity was over 80 to 90 % more in all of bone tumors. But the significant difference of the true positive ratio was not observed in these three groups of bone tumors. In the same cases, tumor scans with Ga-67 Citrate were studied in 99 subjects. The avid accumulation on the both scans was shown in 36 (72%) of 50 primary bone tumors and 25 (51%) of 49 metastatic ones. Also, in the cases of bone tumors to which three different scanning agents (Tc-99m phosphates, Ga-67 Citrate and Tl-201 Chloride) were used, the additional efficacy in the diagnosis of various bone tumors was cleared to be more increasing.

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CHANGES OF BONE SCINTIGRAPHY AND CT SCAN IN METASTATIC BONE TUMORS AFTER RADIOTHERAPY WITH CO-60. T. Sakata, K. Yamasaki, T. Kawai, H. Maeda, S. Okahashi, Y. Suezawa, M. Arai and H. Akaqi. Department of Radiology, Osaka Medical School, Takatsukishi, Osaka

Changes of bone scintigraphy and CT scan after irradiation were discussed with 28 lesions in 22 cases of metastatic bone tumor.

Methods :

1) Co-60 irradiation: 200 rad/day x 5 times in a week and 5000-6000 rad in total dose were prearranged for radiotherapy. 2) Bone scintigraphy was taken by PHO/GAMMA LFOV after 3 hours injection of Tc-99m-MDP with 10 mCi. 3) CT scan was by EMI-scanner CT 5005/12 and Ca concentration was calculated from EMI units.

Results :

1) In bone scintigraphy, even if abnormal accumulation was decreased after irradiation, the lesion had a tendency to increase activity within 1 year.

2) Changes of bone scintigraphy and CT scan were not shown a clear correlation but there was a tendency as follows :

In cases of decreased abnormal accumulation in post-irradiative bone scintigraphy, Ca concentration of the lesion by CT scan was increased, and in cases with increased accumulation, Ca concentration was decreased.