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BONE SCAN PATTERNS OF PATIENTS WITH COLD TYPE, RING-LIKE AND DIFFUSE METASTATIC CARCINOMA. T. TAKEMURA, Y. NISHIMOTO, M. OMURA, H. IKEDA, K. HAMADA, T. FUKUDA, H. OCHI, Y. ONOYAMA, S. MATSUMOTO, T. HIDAKA, S. MURAKAMI, T. NAKAI. Department of the 2nd internal medicine, and of Radiology, Osaka city medical school, Momoyama city hospital, Nihonseimei hospital.

We have encountered unusual patterns on the bone scintigram in some cases of bone metastases. We presented these cases as pitfalls on the interpretation of the bone scintigrams. These unusual patterns were divided into three types; 1) cold type, 2) ring-like type, 3) diffuse high activity type.

In spite of growing of the tumors, the metastatic lesions which were seen as hot spots in the early stage gradually changed into "warm" and/or "cold" on the bone scintigram. On the other hand, Ga-67-citrate uptake in such areas were increased on the follow up studies. Therefore, it is useful to perform Ga scintigraphy when the cold lesion is seen on the bone scintigram because of avoiding misinterpretation as improvement of the lesion.

In the diffuse high activity type, it is important to recognize the imaging technique. The bone scintigram taken by a preset count, in other words, optimum density might be misinterpreted as normal in the diffuse high activity type. Then, exposure time, faint visualization of the kidney and inappropriately clear image of ribs and vertebra even in the aged patient should be recognized on the interpretation of the bone scan.

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AN ANALYSIS OF PATIENTS WITH BONE METASTASES BY MEANS OF BONE SCINTIGRAPHY. K. Yuzuta, Y. Ono, H. Kawashima, S. Takebayashi, Y. Nakajima, K. Asakura, K. Matsui, J. Noda and T. Tanaka. Yokohama City University School of Medicine and Kanagawaken Seijinbyo Center. Yokohama.

Bone scintigraphy with Tc-99m phosphorous compounds were performed on fifty seven cancer patients with bone metastases. The location of the primary tumors were as follow: breast 28; lung 11; prostate 8; uterine cervix 3; kidney 2; stomach 2 and others 3. Two or more scintigrams were done on the same patient between 1976-1979. The changes of bone metastases were evaluated by the number and the size of the radionuclide accumulation. They were divided into three groups: "exacerbation", "no change" and "improvement". "Exacerbation", "no change" and "improvement" were observed in 63% (36/57), 19% (11/57) and 18% (10/57) respectively. "Improvement" were observed most commonly in prostatic cancer patients in this study.

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The plan of prospective study in evaluating the clinical efficacy of bone scans in breast and prostatic cancer. K. Machida, J. Nishikawa (Univ. of Tokyo), T. Iinuma, T. Matsumoto, Y. Tateno (Hoiken), G. Uchiyama, T. Ishikawa (Univ. of Chiba), H. Oyamada (N.C.C.) K. Kawakami, M. Miki (Jikei Univ.), A. Kubo, Y. Takagi (Keio Univ.), T. Nakajima (S.C.C.) K. Murata, M. Iio (Yoikuin), T. Yamazaki (Tokyo Women's Med. Coll.), N. Yui (C.C.C.)

The propose of this study is to present our plan of prospective study in evaluating the clinical efficacy of bone scans in breast and prostatic cancer. For this purpose we made three kinds of data sheets. The first sheet is for the documentation of the stage of cancer, the result of biochemical examinations and X-rays. And the probability of existence of metastasis was classified into 14 grades. In the second sheet the findings of bone scan and the probability of metastasis are recorded. The third sheet is for the documentation of the final diagnosis. The confirmation are performed by autopsy, operation, and biopsy. However, clinical course over one year is also used for the final diagnosis when the pathological data are not available. (The study is supported by Japan Radiolotope Association.)

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EVALUATION OF METASTATIC BONE LESIONS BY DYNAMIC SCINTIGRAPHY. M. Kumano, F. Tsuchiya, K. Tamura, T. Hamada, O. Ishida, T. Sakashita, I. Funakoshi, N. Kawai and A. Kaita. Kinki University, School of Medicine and Center for Adult Diseases, Osaka.

Dynamic scintigraphy with Tc99m-EHDP was used to evaluate 40 patients with metastatic bone tumors of various origins and 10 patients with other bone diseases. Local short-term deposition of the tracer in all cases of metastatic lesions was observed in the blood pool phase (1-3 min after injection). On the other hand, tracer accumulation in cases of old traumatic fractures and osteoarthritis appeared in the early phase (after 10 min). Although both radiography and static scintigraphy did not show abnormal accumulation in the initial stage of metastasis, lesions were shown in both the vascular (10 sec) and blood pool phase of dynamic scintigraphy.

Scintigraphic differentiation of early metastatic bone tumors from other lesions was facilitated by dynamic scintigraphy with Tc99m-EHDP. The effects of radiography and/or chemotherapy on metastatic bone tumors were also accurately evaluated using this technique.