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BONE SCANNING IN PATIENTS WITH BREAST CARCINOMA; FOLLOW-UP STUDY OF 329 PATIENTS IN WHOM BONE SCAN WAS PREOPERATIVELY PERFORMED. Y.INOUE,N. HONDA. MITSUI MEMORIAL HOSPITAL, TOKYO

We reviewed our experience with bone scanning in 329 patients out of 406 histologically proven breast cancer patients to determine if any or all patients should have this procedure done routinely prior to breast surgery. The follow-up period ranged from one to eight years, mean 30 months. Bone metastasis was finally diagnosed in 47 patients ( 14.3% )using bone scan. T1 group had bone metastasis in 5 of 82 patients (6% ), T2 group in 21 of 189 ( 11.i% ),T3 group in 15 of 38 ( 39.4% ) and T4 grpuup in 6 of 20 ( 30% ).
The incidence of bone metastasis was 14.3 % ( 47/329). Of 140 patients with nodal metastasis,26.4% ( 37/140 ) had bone metastasis on bone scan, while only 5.3% ( 10/189 ) of patients without nodal metastasis had positive scan.
The incidence of bone metastasis in T1NO, T1N1, and T2NO was less than 5%. In this group, preoperative bone scan will be not necessary.

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PROBLEMS IN PERFORMING BONE SCANS FOR THE TREATMENT OF PATIENTS WITH BREAST CANCER
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In cases diagnosed as bone metastasis (17/205), the changes presented by bone scintigraphy and resulting from various therapies were useful for the assessment of therapeutic response. In 3/17 cases, however, no changes were visible on the bone scintigram after therapy. Following chemotherapy, some bone scan abnormalities showed a decreased amount of radioactivity (9/17) and in some cases new areas appeared (5/17). These could have been misconstrued as progression of the disease, when in fact in some cases healing with increased osteoblastic changes with decreased activity was the explanation (3/17). In this situation, differentiation of the disease's progression or regression is aided by knowledge of the patient's clinical status and the CEA value.

We recommend that in moderately advanced cases of breast cancer, such as those with axillary lymph node involvement, bone scans should be repeated at 6-month intervals for at least the first 5 years after mastectomy. In patients with histologically negative axillary nodes, a yearly review scan is advisable.

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BONE METASTASIS OF BREAST CANCER AND BONE SCINTIGRAPHY. T.Nakajima,B.Kado,M.Takeuchi,K.Mishio,K.Uehara,Y.Watanabe,M.Sakura, Y.Higashi,K.Suematsu and C.Nomoto. Saitama Cancer Center, Saitama.

For the purpose of evaluation of high risk factors of bone metastasis in patient with breast cancer, 24 cases with bone metastases in follow-up bone scintigraphy and 29 cases without abnormal deposits for more than 5 years after mastectomy were studied using multivariate analysis of "Suryoka 2 rui". The selected factors and those categories were stage (I,II ,III ), histology (II a1,II a2,II a3,others),histological lymphnode metastasis (n-factor, n0,n1α,n1β,n2< ),lymphatic invasion (Ly-factor, -, + ,++ ,+++ )and venous invasion (V-factor, -,+,++ ,+++).
The means of discriminant score were 1.00 in meta(-) group and -1.21 in meta(+)group. On the view point of discriminant coefficients, V-factor was thought to be most significant risk factor and Ly-factor, histology, n-factor and stage follow.

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BONE SCINTIGRAMS IN CASES OF MAMMARY CARCINOMA (THE RELATIONSHIP BETWEEN INITIAL CONDITION AND BONE METASTASIS).
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Y.Koizumi, M.Tanaka, T.Okamura, S. Taniguchi, T.Fukuda, H.Ochi, Y. Onoyama, Y. Shimonishi, M. Omura, H. Ikeda and K. Hamada. Osaka City University Medical school. Osaka.

The relationship between initial conditions and bone metastases was examined in 170 patients with mammary carcinoma. The duration of follow up bone scans was from 35 to 95 months after surgery. The bone metastases were found in 21 patients by bone scan. The risk factors of the bone metastases were analyzed as follows: 1) The diameter of the tumor more than 2 cm, 2) No history of pregnancy, 3) Scirrhous carcinoma histologically, 4) No chemotherapy after surgery. Most of these bone metastases were found in patients between 2 to 4 years after surgery. In one case, it was found 6 years after surgery. Therefore it is necessary to perform bone scan as a follow up study for long term, especially for the patients with risk factors.