about 3 hours after administration.

Scintigrams with ^{99m}Tc-MDP were equal or superior to those with ^{99m}Tc-Diphosphonate. We conclude ^{99m}Tc-MDP is the best radiopharmaceutical for bone scanning available at present.

Evaluation of Pre- and Postoperative Scintigraphy for Detecting Skeletal Metastases in Cases of Breast Cancer

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A preoperative bone metastatic survey using skeletal scintigraphy was carried out on 29 patients clinically diagnosed when first admitted as having early breast cancer. 82 other patients who had undergone mastectomy or radiotherapy, a majority of whom complained of pain in the spine and extremities, were studied to detect sites of metastatic bone lesions.

After the administration of Tc-99m EHDP in the dosage of 10–15 mCi IV, whole body scans were performed using a Toshiba gamma camera (type 202). At approximately the same time as the skeletal scintigraphy was carried out, each patient also had a radiological skeletal survey and biochemical tests.

Occult skeletal metastses were visible on the scintigrams of 10% of the patients who had been clinically diagnosed as having early breast cancer, and who had undergone simple mastectomy followed by chemotheraphy. Radiographs had failed to detect the metastases in two thirds of the cases, showing that bone scintigraphy with Tc-99m is superior to conventional radiography for the detection of early metastatic bone lesions.

Overall in this study, 76% of the bone scans in postoperative cases revealed abnormalities. Over 56% of the patients with skeletal abnormalities had lesion in the thorax and vertebrae while abnormaliies were detected in skull, pelvis and extremities in 39%, 25% and 26% of the cases, respectively.

Finally, it is recommended that all candidates for radical mastectomy and/or radiotherapy have a preoperative bone scan and that the procedure be repeated during and following therapy in order to assess the response to treatment or detect recurrent sites of the diseases. The procedure should preferably be performed at least once per year for three years following mastectomy even in the absence of symptoms.

Evaluation on Diagnostic Capability of ^{99m}Tc-Pyrophosphate Bone Scintigraphy on Bone Metastasis of Breast Cancer

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The diagnostic capability of bone scintigraphy using ^{99m}Tc pyrophosphate was discussed. The scintigraphy was performed 78 patients of breast cancer. The results were summerized as follows:

1) In 18 cases with bone metastasis, 13 cases (72%) ware previously diagnosed by bone scintigraphy.
2) The over-all accuracy ratio was 79.5% in 78 cases and 75.7% in 118 scintigraphies.
3) The incidence of false positive was 45.5% in 118 scintigraphies, and common causes were high accumurations of radioisotope in the breast bone, lumber vertebrae and hip-joint.
4) The incidence of false negative was 5%, and the focuses of all these cases were metastatic focuses in the ribs.