The colloids of the larger particles are more rapidly incorporated into both liver and spleen. And the S/L ratio at 30 minutes after i.v. injection showed the largest value in ^{99m}Tc-Sn-colloid and the smallest value in ^{198}Au-colloid.

And in the other experiment, liver scintigram was routinely taken by injection of radioactive colloid in the rabbit who was previously injected large quantity of non-radioactive colloid particles (about 100 times of clinical use). The scintigrams revealed slightly faint image, but S/L ratio was found no significant changes.

The Effect of RI-Diagnosis on Bone Disorders Difficult to Recognize by Simple Roentogenograms Part 1 Stress Fractures

K. MATSUYA, S. SANO, G. NAKAMICHI
Sendai District Hospital GSDF
J. NARISAWA
Sendai National Hospital

Fracture lines of the "stress fractures" are so delicate that we can hardly find it in early stage on simple bone roentogenograms.

This is a reason why the most common fractures are caused directly or indirectly by some violent forces, but stress fractures, as a rule, are resulting from minimal continuous forces, making early diagnosis more difficult.

Using radiopharmaceuticals; i.e. ^{99m}Tc pyrophosphonate or diphosphonate, we first confirmed to recognize the stressfractures before callus formation had appered on common roentogenograms, although callus formation is an indidrect sign of fractures.

We reported here some cases of stress fractures suffered from femur, tibia, fibula and metatarsus, comparing roentogenograms with scintigrams.

Effectiveness of Testosterone Potentiated ^{32}P Therapy and Availability of Bone Scan in Patients with Severe Bone Pain in Multiple Metastase of Bone

K. ITOH, A. TADA, S. KOBAYASHI, N. TONAMI, and K. HISADA
Department of Nuclear Medicine, Kanazawa University Hospital

Testosterone potentiated ^{32}P therapy has been used for palliative treatment of severe bone pain in multiple metastatic lesions. We have done this treatments in two patients with the prostatic cancer, one with the breast cancer and one without the definitely diagnosed origin which is histologically shown as adenocarcinoma by the bone biopsy, since June, 1974. This report may be first in Japan.

The standard administration of testosterone

and ^{32}P was followed to Edland's method. Testosterone propyonate 100 mg was administered intramuscularly for fifteen days and since the sixth day of the injection of testosterone was administered ^{32}P 1.5 mCi intravenously for seven days. Whole bone image with ^{32m}Td-diphosphonate (10 mCi- 15 mCi) was scanned at 3 to 4 hours of the post-injection by the r-Camera and was re-examined 2 week, 4 to 6 week and 3 month after the iniciation of ^{32}P administration.

The relief of pain was very good in all of patients. The appearance of the improvement of pain began at 3rd to 4th day at most promptly and became definitively and continuously on 4th to 6th week since the iniciation of ^{32}P-administration.

The bone marrow suppresion and other uncomfortable effect due to ^{32}P were not experienced in all patients.

The change of the bone image compared with the pretreatment and the post-treatment was very interesting. The abnormal accumulation of the radiopharmaceutical in metastatic bone lesions was documented in all of patients. This finding tended to be more marked in the image of the post-treatment about on the second week and then it tended to be dicreased or adminished in the localized lesions on 4th to 6th week, when it is that the difinitive and continuous relief of pain was set up.

We are thinking the following indication of this therapy.

1) patients have long had severe and intolerable bone pain in the diffuse metastatic involvements.
2) The pretreatmental whole bone image with ^{99m}Tc-tagged radioagents reveals the marked increased accumulation in the multiple metastatic lesion.
3) The prostatic cancer and the breast cancer may be theoretically more preferable, but other cancer can possibly is treated, if they have the condition that is clinically shown without the soft tissues metastase and with the above categories.

Bone Scintigraphic Finding Following Radiotherapy in Massive Doses of Osteosarcoma

K. Matsuura, Y. Itami, N. Akamatsu, S. Omori, H. Aoki and A. Miyajima
Department of Orthopaedics, Jikei University School of Medicine
T. Okada
Kanagawa Rehabilitation Center

Since 1969, we, in our department, have treated osteosarcoma mainly with long-term radiation therapy in massive doses and have found it significantly effective in prolonging patient's life as compared with conventional therapeutic methods. In a study undertaken as a follow-up to the healing process of the primary lesion of osteosarcoma so treated, bone scanning and angiography were performed before and after radiotherapy and scintigrams and angiograms thus obtained were reviewed by way of comparison.

Since 1969, long-term radiation therapy in massive doses has so far been given to 19 cases of osteosarcoma. The total dose in this series ranged from 7920 rad to 24200 rad, averaging 13687 rad. Bone scans were made invariably with Tc-