

## 2508

BONE SCINTIGRAPHY IN PATIENTS WITH FRACTURE OF THE FEMORAL NECK. S.Omori\*, F. Hattori\*\*, A.Miyajima\*\*\*, and H. Sawai\*\*\*  
Dept. of Orthopedics\* and Radiology, Kanagawa Prefectural Atsugi Hospital, Jikei Univ. School of Medicine\*\*\*

Gone scintigraphy was performed on patients with a fracture of the femoral neck in a study undertaken to evaluate the usefulness of the procedure in determining the time of bone union. The purpose of this paper is to present the results obtained.

The subjects used in this study were 86 patients who were treated for a fracture of the femoral neck at our clinic from 1978. Their average age was 76.7 years. Scintigrams of femurs of these patients were displayed as maps on a TV color monitor, two areas of interest were defined in scintiscan images so represented, i.e. one at the affected site and another in the corresponding region of the contralateral femur, and total specific activity was counted for either area to determine the left/right ratio of radioisotope accumulation. In all cases studied there was noted increased accumulation of radioisotope on the injured side, which suggests that remodelling of bony tissue was going on at the site of fracture over a prolonged time. In those cases with nonunion or with suspected delayed healing a high value of the ratio of radioisotope accumulation was obtained even 3 months after injury.

The results indicate that follow-up bone scintigraphy not only is useful in estimating the degree of bone union and in early detection of complication but also provides a means of evaluating the result of operation.

## 2509

EVALUATION OF ACTIVITY OF RHEUMATOID ARTHRITIS BY JOINT SCINTIGRAPHY. S.Omori\*, F.Hattori\*\*, S.Hayashi\*\*, A.Miyajima\*\*\*, and H.Sawai\*\*\* Dept. of Orthopedics\* and Radiology\*\*, Kanagawa Prefectural Atsugi Hospital and Dept. of Orthopedics, Jikei Univ. School of Medicine\*\*\*.

This paper deals with the results of a study representing our attempt at evaluating the activity by scintigraphy. Thirty-six patients with classical or definite rheumatoid arthritis who were receiving treatment at our clinic were involved in the study. Scintigrams of joints of these patients were displayed as maps on a TV color monitor, 10 areas of interest ( i.e. MP joints and central parts of proximal phalanges ) were defined in so represented images for each hand and then the ratio of radioactivity count between bone and joint was determined for each finger and was arbitrarily taken as index of inflamed joint.

The mean Tc-index value of both hands was found to correlate with either of ESR and CRP values. Further, a study was made of changes in Tc-index occurring under steroid therapy in an effort to determine if this index can be a valid criterion for evaluation of drug effectiveness. All 16 hands, excepting 3, showed a definite reduction of Tc-index value, hence quiescence of disease, following steroid therapy. From these results it is concluded that the Tc-index which is based on joint scintigraphy provides an objective criterion for evaluating the inflammatory activity, therapeutic course and drug effectiveness in rheumatoid arthritis.

## 2510

CLINICAL EVALUATION OF JOINT SCINTIGRAPHY IN RHEUMATOID ARTHRITIS. K. Shimabukuro, K. Shirono, H. Sakata, M. Nakajo and S. Shinohara Department of Radiology, School of Medicine, Kagoshima University. Kagoshima

Pertechnetate joint scintigraphy was performed 45 patients with rheumatoid arthritis, 3 with nonspecific arthritis and 6 normal subjects.

1) The sites of radioisotopic accumulation were generally in agreement with those of clinical involvement in rheumatoid arthritis.

2) Analysis of build-up curves shows that the rate of accumulation of radioisotope in the wrist joints was faster in rheumatoid arthritis ( $T_{1/2}=0.67\text{min.}$ ) than in nonspecific arthritis ( $T_{1/2}=2.66\text{min.}$ ).

3) In rheumatoid arthritis, pertechnetate joint scintigraphy proved more sensitive than bone roentgenography.

4) The degree of radioisotopic accumulation correlated to the value of CRP and blood sedimentation rate.

It should be suggested that pertechnetate scintigraphy is useful for clinical evaluation of rheumatoid arthritis.

## 2511

SCINTIGRAPHIC APPROACH TO THE DIAGNOSIS OF ANEURYSMAL BONE CYST OF MANDIBLE. T. Okuyama, H. Suzuki, Y. Kuwabara, H. Mine and S. Suzuki Department of Radiology, Tokyo Medical and Dental University Hospital. Tokyo

Aneurysmal bone cyst is extremely rare condition in the mandible. The roentgenographic findings of aneurysmal bone cyst affecting tubular bones are usually characteristic, though being rather complexed when the lesion is in the mandible. Among a consecutive series of 76 cases carried out bone scintigraphy for various maxillofacial disorders, we have 2 cases of aneurysmal bone cyst of the mandible. In this study, diagnostic value of bone scintigraphy and radionuclide angiography on the lesion is discussed.

Bone scintigram demonstrates ring-like or doughnut-pattern accumulation of the radioactivity which is well corresponding to the expansive character of the bony lesion. The accumulation of the radioactivity is markedly intensive in spite of the lesion is benign, and the central rarefaction reveals that the lesion is cystic in nature. Radioactive concentration can not be detected by radionuclide angiography including pool scan. Some authors, however, reported that contrast angiography of aneurysmal bone cyst might demonstrate hypervascularization with patchy contrast filling of the cystic area. Scintigraphic approach may be useful in differential diagnosis of aneurysmal bone cyst from hemangioma or other cystic lesions of the mandible.