entgenologic study had been performed for suspition of primary or metastatic bone tumors. The patient was given 80±100 μCi of ^{85}Sr or 1-2 mCi of ^{87m}Sr intravenously for the examination.

The cases consisted of 3 primary bone tumor, 17 mammary cancer, 5 eosophageal cancer, 4 thyroidal cancer, 3 pulmonary cancer and so on.

The scintigraphy was done for 141 areas.

51% areas of 72 areas in which a roentgenologic survey was positive showed positive in scintigraphy. Positive scintigraphy was found most frequently in the spinal column, pelvic bones, humerus and thigh bone, but bone scintigraphy was often negative in ribs or scalp bone inspite of their positive roentgenogram. Most of the pathologic fracture of ribs showed negative scintigram.

Positive scintigraphy was found more frequently in osteoplastic change than in osteolytic change.

Scintigraphy was positive in 9 areas of 69 areas in which roentgenologic examination showed negative, and scintigram was positive more frequently when there was pain or swelling.

Clinical Application and Its Study on Knee Joint Cavity Scintigram by Sequential Scanning Method for Diagnosis of Osteoarthrosis of the Knee

T. Tsuchida and T. Oka

Laboratory of Radioisotope, Osaka City Shirokita Hospital, Osaka

A. Masumoto, T. Kadobayashi, Y. Fujiwara and Morishita

Orthopedics, Osaka City Shirokita Hospital, Osaka

Purpose: To investigate the shape of knee joint cavity and its absorption state as one of the methods for diagnosis of the condition of osteoarthrosis of the knee by using radioisotape.

Method: ^{131}I-HSA, ^{198}Au Colloid and ^{131}I-Na solution were use das radioisotope reagents and 25-70 μCi (0.5-1.0 ml) per knee was injected into knee joint cavity. Scanning was performed in course of time after injection. Absorption half time (t 1/2) determined by the external knee disappearance curve and, the shape of joint cavity was drawn by area scanning on both the frontal and the laleral view of joint of the knee.

Results: t 1/2 in normal or non-symptomatic knee estimated 1.4±0.2 hours (n=8) by ^{131}I-Na solution, 1.5±0.2 days (n=12) by ^{131}I-HSA and nearly 7.0 days (N=15) by ^{198}Au-Colloid, and its half time was prolonged further in the cases of symptomatic or pathologic stages, and had apparently reduced by the injection of steroids into joint cavity. Normal joint cavity scintiphoto by ^{131}I-HSA shows a triangular shape on the frontal view and a fishhook-shape on the lateral view.

This pattern consists of the suprapatellar bursa and articular capsule joining to articular cavity and absorption shadow distributing upward.

Various kinds of change can be observed on the diseased knee. For example, externally, expansion, contraction and deformity of contour, internally, areas of decreased density, and with the lapse of time a delay or a lack of appearance of absorption shadow or the existence of remained figure, etc.

Conclusion: After this method had been applied to the osteoarthrosis of the knee principally consisting of osteoarthrosis deformans, there were discovered the changes of the shape of joint cavity and the disturbance of absorption or distribution mechanism. The above information can never be obtained by X-rays examination and this, therefore, may become one of the useful methods for diagnosis of osteoarthrosis.