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3-FACTOR ANALYSIS OF DYNAMIC BONE STUDY.

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Dynamic image at hip joint was acquired by Tc-99m MDP and 3-factor image & curve was able to be devited each factors,as bone,blood flow,and soft tissues,by 3-factor analysis.

Only bone factor image is able to be picked up selectively by 3-factor analysis,from early phase image(5-10min).So investigation of pure bone images,both early(5-10min) and late(4 hrs.)phase,may be useful to differencial diagnosis of hip joint disease.

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CLINICAL EFFICACY OF BONE SCINTIGRAM IN PATIENTS WITH BREAST AND PROSTATIC CANCER.

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Clinical efficacy of bone scintigram was evaluated in patients with breast and prostatic cancer before treatment. This investigation was performed prospectively. Bone scintigrams of 414 breast cancer and 88 prostatic cancer were collected from several leading hospitals located in Tokyo area. Positive rate of bone scintigram was 11% in breast cancer and 54% in prostatic cancer. Analyzing receiver operating curves, we conclude that positive rate is low in stage 1 and 2 of breast cancer,but efficacy is high in stage 3 and 4 of breast cancer and prostatic cancer.(This study was supported by Japan Radioisotope Society)

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SCINTIGRAPHY OF SIMPLE BONE CYST.

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Bone scintigrams and conventional radiographs of 11 simple bone cysts were reviewed in order to evaluate the caracteristic findings in bone scintigrams of them. There were 5 cases occurred in the femur, three in the calcaneus, two in the humerus and one in the radius. The scintigraphic intensity of each tumor was graded relative to normal contralateral or adjacent bone; ±, low uptake; +, normal uptake; 2+, mild uptake; 3+, intense uptake. The intensity of uptake was graded 3+ in 5 cases, 2+ in four, and + in two. There was no case graded ±, but low uptake area was partially observed in four cases. In 5 cases graded 3+, three cases were complicated with pathological fracture. Bone scintigram of simple bone cyst showed low to mild uptake in general, and when intense uptake was observed, it seemed to suggest pathological fracture in the tumor.

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CLINICAL ASSESSMENT OF Tc-99m MDP ABNORMAL UPTAKE IN PLEURAL EFFUSION OR ASCITES.

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We reviewed the records of 5231 patients who were referred to us for bone scanning during the previous four years. The causative diseases of Tc-99m MDP diffuse uptake in the thoracic or abdominal region were diagnosed from x-ray studies and pathological findings. We also compared Tc-99m MDP uptake with Ga-67 uptake if Ga-67 scan was performed subsequently. In four patients, we measured radioactivity in components of the malignant pleural effusion, the malignant ascites and the blood.

57 cases showed Tc-99m MDP diffuse uptake in the thoracic region. The causative diseases were pleuritis ca., pleural effusion due to pulmonary infection or heart failure, metastatic calcification, postpneumonectomy. 15 cases with peritonitis ca. or ascites by cirrhosis showed Tc-99m MDP diffuse uptake in the abdominal region. The intensity of Tc-99m MDP uptake in pleural effusion was almost proportional to the effusion volume. There is relatively good correlation between Tc-99m MDP uptake and Ga-67 uptake in patients with pleural effusion or ascites. The values of Ca, P, Acid-p and Al-p in the effusion were lower than normal values. In conclusion, disruption of pleural permeability is likely to be a major mechanism for Tc-99m MDP uptake in effusion.

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