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EVALUATION OF ABNORMAL FINDINGS O BONE SCINTIGRAMS (I). N. Tonami, K. Hisada and H. Seto. The Department of Nuclear Medicine, School of Medicine, Kanazawa University. Kanazawa.

2077 bone scintigrams with Tc-99m phosphate compounds were evaluated to select specific abnormal findings and Gamut approach was performed.
This time 5 specific findings were evaluated
1) Extended activity of the bone of the extremity
2) Extended activity of the entire extremity
3) "Cold lesion" appearance
4) Bilateral increased activity at(around)the joints of the extremities
5) Unilateral increased activity at (around) the joints of the extremities
Diseases and conditions in each finding were reported and clinical usefullness of the Gamut approach was discussed.

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COMBINED BLOOD POOL AND STATIC BONE IMAGIC IN AN EVALUATION OF RHEUMATOID ARTHRITIS. F.Nakanishi,T.Kasuga,K.Moriya,Y.Kondo,T. Kobayashi,M.Miyazawa. Department of Radiology,Faculty of Medicine and Technologicl Service of Radiology,Shinshu University Hospital.

The efficacy of blood pool imaging and static bone imaging with Tc-99m-MDP was studied to assess the degree of inflammatory reaction in rheumatoid arthritis. In the 10 patients with rheumatoid arthritis, 20 knee joints were examined and a comarison was made between radionuclide image, clinical evaluation and radiography. An excellent agreement between clinical examination and radionuclide imaging. Increased radioactivity both in the blood pool image and static bone image indicates clinicaly active rheumatoid arthritic joint. These procedures may be useful as a clinical parameter for evaluation of rheumatoid arthritic activity following therapy.

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ENERGY DISPERSIVE X-RAY FLUORESCENCE SPECTROMETRIC DETERMINATION OF CALCIUM, PHOSPHORUS, IRON, ZINC, AND STRONTIUM IN HUMAN BONE. A. Ohta*† T. Matsubayashi† M. Itoman†** and S. Masumi†** Dept. of Radiology† Dept. of Orthopedic Surgery†**Kitasato University school of medicine, Sagamihara.

Ten cases with various forms of bone disease were analyzed for phosphorus, calcium, iron, zinc, and strontium by energy dispersive X-ray fluorescence spectrometry. Apparatus used in these studies were Kevex 801 type energy dispersive X-ray fluorescence analysis equipments with Si(Li) detecter and second target exciting method, and Kevex 5000 series X-ray energy spectrometer. Bone specimens were dissolved in minimum volume of analytical grade nitric acid, and diluted with redistilled water. The resulted solution was applied to X-ray fluorescence method. The intensity of K_{α} line emitted was measured and the element content was determined from calibration curve. Molybdenum and molybdenum-alminum were chosen as the second target and filter, respectively.

Total calcium concentration for specimens varied between 55.5 and 167.2 mg per gram flesh bone, and phosphorus concentration ranged between 22.0 and 173.5 mg per gram of flesh bone. The ratio of phosphrus to calcium for 10 specimens ranged from 0.39 to 0.92.

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THE EFFECT OF RADIATION THERAPY ON THE SPINAL UPTAKE OF BONE SCAN AGENTS. B.Kado,T. Nakajima,Y.Watanabe,M.Sakura,Y.Sasaki and T.Nagai. Saitama Cancer Center, St.Marianna University School of Medicine and Gunma University. Ina,Kawasaki and Maebashi.

Ninety eight bone scans and 43 Ga-67 citrate tumor scans performed to 66 patients, including 42 with lung cancer, 5 with esophageal cancer and 19 with other malignancy, were evaluated during or after radiation therapy with the irradiation field involving thoracic and lumber spines. The correlation among the spinal uptake of radioactivity in the radiation field, the irradiation dose and the interval after radiotherapy was investigated. It was the result that 33 of 98 bone scans(34%) showed "decreased" and 25 of 41 bone scans(61%) performed more than 3 months after radiotherapy showed "decreased" spinal uptake. In this group of 41 bone scans, 16 of 21 bone scans(76%) with more than 5000 rads showed "decreased" spinal uptake. None of cases were observed returned to the usual spinal uptake from "decreased" in any periods after radiotherapy, although 8 cases got into "decreased" from "equilibrated" during follow up. Twenty five of 42 cases(58%) with Ga tumor scans, which were performed in the earlier periods and with less dose as compared with bone scans, showed "decreased" spinal uptake. Three cases with "decreased" spinal uptake on bone scans and 2 cases showing descrepancy of the spinal uptake between bone scan and Ga tumor scan were demonstrated.