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BONE-TO-SOFT TISSUE(B-S) RATIO BY AGE.
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In the previous study, we measured the B-S ratio using computor to define the regions of interest around vertebra, cranium, and femur. And B-S ratio (vertebra/soft tissue) has a wide distribution. So we thought it is more useful index to define metabolic bone diseases. At the present study, for the purpose of defining the distribution of B-S ratio by age, we measured the B-S ratios of 136 cotrols who showed normal bone scintigram, and classified according to decades. These results were compared with the results of Fogelman. Our results showed higher ratio than Fogelman's. We suspect that it is because of the difference of radionuclides. (Fogelman used Tc-HEDP, on the other hand, we used Tc-MDP) But our distribution was not different from Fogelman's. At both results, significant difference was not observed with each decades. Futhermore, we compared B-S ratios of controls with 53 hemodialysis patients's. B-S ratios of 47 HD patients were almost same as that of controls. We supposed that it is due to the α-D3 therapy. For example, one HD patient reduced B-S ratio considerably after α-D3 therapy. Finally, we measured B-S ratio, and it is thought to be useful in the diagnosis and follow up study of the renal osteodystrophy.

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A STUDY ABOUT INCREASED UPTAKE OF Tc-99m-LABELED BONE IMAGING AGENTS IN THE KIDNEYS.
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A diffuse renal parenchymal concentration of Tc-99m-labeled bone imaging agents is usually called 'hot kidney'. We reviewed 873 bone scintigrams by Tc-99m-MDP and picked up 16 patients showing 'hot kidneys' (1.8 %). 6 patients were received chemotherapy (vincristine, doxorubicin and amphotericin-B). 2 patients were administered analgesic and they were performed total hip joint replacement. 2 patients with urinary tract obstruction were shown unilateral 'hot kidneys'. Last 6 patients were idiopathic. Lavelle,K.J.et al reported renal hyperconcentration of Tc-99m-HEDP in experimental acute tubular necrosis. Because anti-tumor agents, antibiotics and analgesics induce acute tubular necrosis, one of the causes of 'hot kidneys' on patients who were received them is probably acute tubular necrosis. We must investigate the period and contents of chemotherapy and analgesic abuse on patients showing 'hot kidneys'.

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COMPARISON OF SEVERAL METHODS IN EVALUATION OF BONE CHANGES ON CHRONIC DIALYSIS PATIENTS WITH RENAL OSTEODYSTROPHY BEFORE AND AFTER SUBTOTAL PARATHYROIDECTOMY.
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Six patients on the chronic hemodialysis with renal osteodystrophy were studied before and after subtotal parathyroidectomy using six different procedures.

Those six procedures are coventional radiography(pharanges,calvarium,vertebra), microdensitometry(metacalpal bone),bone mineral analysis(radius),measurement of EMI number with X-CT(frontal bone),bone scintigraphy(whole body),and radionuclide activity ratio(frontal bone/brain)with SPECT.

On one patient with ectopic calcification, the bone scan showed marked increased radioactivity on the site of the ectopic calcification before surgery. One month after surgery ectopic calcification on plain film showed no remarkable change but radioactivity on the same site markedly decreased on the bone scan.

On 5 patients bone scans showed diffuse increased activity in the calvarium, maxilla and mandible. Three out of the five patients studied before surgery and 3 months after surgery showed improvement on each examination. Radioactivity ratio with SPECT decreased markedly after surgery and it could be the most useful method to detect the dynamic bone changes sensitively and quantitatively.

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CLINICAL EVALUATION OF JOINT SCINTIGRAPHY IN RHEUMATOID ARTHRITIS.
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Joint scintigraphy with Tc-99m was performed in 25 cases of rheumatoid arthritis. The age of patient ranged between 14 years and 65 years. There were 5 males and 20 females. Most commonly, R.I. accumulation was seen in location with pain. However, occasionally, R.I. accumulation was observed in painless joints.
These joints were considered to have either slight stage I disease which had responded to treatment or stage IV disease with ankylosis and some residual activity. There was no R.I. accumulation in painless joints with severe ankylosis.
In conclusion, joint scintigraphy is considered to be useful in management of rheumatoid arthritis.