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USEFULNESS OF RADIONUCLIDE ANGIOGRAPHY FOR BONE TUMORS. H.Yamamoto,T.Umeda,N.Arimizu,S.Inoue,N.Takada,N.Yui and M.Sohara. Chiba University, Chiba Cancer Center and Narita Red Cross Hospital. Chiba and Narita.

Radionuclide angiography was performed in 25 bone tumors and the diagnostic usefulness was evaluated with respect to abnormal patterns of blood flow represented in the tumor. After the bolus administration of 10 to 20 mCi Tc-99m human serum albumin, serial images were taken with the scintillation camera, revealing the radionuclide accumulation within the lesions. The increases in radionuclide accumulation were seen within the lesion after the initial phases in all cases of malignant bone tumors and in 7 of 13 cases of benign bone tumors. In 11 cases the imaging data was stored by TOSHIBA GMS-80A data analyzer. Resions of interest were selected on the tumors and neighbors and the time-activity curves were analysed in each resion. In benign tumors the time-activity curves showed delayed increases of the radionuclide accumulation. In malignant tumors, however, the time activity curves were represented by exponential function with two parameters. The numerous values of two parameters obtained by osteosarcoma were different from those of metastatic cancers. These suggested that differential diagnosis of tumors is possibly attainable by using analysis of two parameters.

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APPLICATION OF THALLIUM-201 SCINTIGRAPHY FOR BONE DISEASES. T.Umeda,N.Arimizu,G.Uchiyama,M.Kawana,H.Yamamoto,S.Inoue and N.Takada. Chiba University School of Medicine and Chiba Cancer Center. Chiba.

Bone scintigraphy has efficiently been used to detect bone lesions and to estimate the extent of lesions though, it frequently reveals the accumulation of radiopharmaceuticals in benign bone diseases as well as in malignant. The present study purposed to investigate the diagnostic application of thallium-201 (Tl-201) scintigraphy for a variety of bone diseases. The correlation of Tl-201 scintigraphy with that of Tc-99m MDP was also examined by clinical standpoints. (Results) There were 32 patients studied with both Tc-99m MDP and Tl-201. Analysis of findings in Tl-201 scintigraphy revealed high sensitivity and high specificity. They were 85% and 79% respectively. Overall accuracy was 81%.

(Summary)

1. Tl-201 scintigraphy provides useful information about whether the lesion is malignant or benign.
2. When Tl-201 scintigram was positive the lesion was malignant with 73% certainty.
3. When Tl-201 scintigram was negative the lesion was benign with 88% certainty.

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TWENTY-ONE CASES WITH UNILATERAL LUNG IMAGES IN PEDIATRIC LUNG SCINTIGRAPHIES. H.Ishida,A.Jujo,N.Ihara,M.nakano,Y.Nirasa-wa,M.Inoue,T.Asaishi,A.tsuji and K.Ishii. Tokyo Metropolitan Kiyose Childrens Hospital, School of Medicine Keio University, and School of medicine Kitasato University. Tokyo and Sagamihara.

Since 1973, 514 lung scintigraphies were performed in infants and children, ranged from 2 days old to 15 years old. 21 of 514 cases showed unilateral lung images (affected lung counts were under 20% of the total counts) on the Xe-133 ventilation and Tc-99m MAA perfusion scintigraphies, were divided into three groups by the findings of chest X-ray films. Group 1: 4 of 21 cases(19%) showed opacity of unilateral lung on roentgen films were 2 malignant tumors and 1 leukemia. All cases showed unilateral images on ventilation and perfusionscans. Group 2: 7 cases (33%) showed partial opacity were 2 lung agenesis, 3 Bochdalek hernia and PA atresia. All cases showed unilateral lung on both scintigraphies. Group 3; 10 cases(48%) showed normal or hyperlucent lung on chest X-ray. 5 of 10 cases(2 PA anomaly and 3 postoperative cases of lung and heart) showed unilateral images on perfusion scan only. But, the other 5 cases(1 bronchial adenoma, 2 Swyer-James Syndrome, 2 postoperative cases of lung and esophagus) showed unilateral lung images on both ventilation and perfusion scintigraphies.