Clinical Experiences of Bone Scanning with ^{99m}Tc-Diphosphonate

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Whole body bone scintigrams were taken on 204 patients with ^{99m}Tc-polyphosphate (35 cases), ^{99m}Tc-pyrophosphate (54 cases), ^{99m}Tc-pyrophosphate by electrolysis method (28 cases), and ^{99m}Tc-diphosphonate (87 cases), and the scintigram qualities were compared with each other on the basis of general appearance and liver image which should not be visualized with well prepared agent. The qualit was divided into three grades, such as "good", "acceptable", and "not good". Polyphosphate group was judged as "good" in 87.5% whereas pyrophosphate in 79.6%, pyrophosphate of electrolysis method in 75.0% and diphosphonate in 85.1%. The ratio of "not good" was 11.4% with polyphosphate, 5.6% with pyrophosphate, 0.0% with pyrophosphate of electrolysis method, and 1.1% with diphosphonate. Strong accumulation in the liver was seen in 11.4% with polyphosphate, 3.7% with pyrophsphate, and 0.0% with both pyrophsphate of electrolysis method and diphosphonate. Therefore, it can be said that the accumulation in the liver interferes with general image quality in a great deal. Although the ratio of good image quality was the best with polyphosphate, we found that diphosphonate provides us more constantly good images than others do.

As well mentioned by others already, there are confusing accumulations in some areas in the body, such as asymmetrical accumulation in joints, spotty accumulation in sternum, and sometimes marked accumulation in the area of thyroidal and cricoid cartilages. In this respect, interrelation between the age and the grade of accumulation in the area of thyroidal and cricoid cartilates was checked. From this study, it was found that the incidence of accumulation in this area and its grade become higher as the age goes up in general. Therefore, ossification of the cartilage will be the cause of such accumulation to some extent.

Bone Scanning with ^{99m}Tc-Pyrophosphate

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The purpose of this study is to evaluate the usefulness of ^{99m}Tc-pyrophosphate as a bone tumor scanning agent. Bone scannings have been carried out in ninety-eight regions in seventy-one patients, including six cases of primary bone tumor, fifty-two cases of malignant diseases in various organs.

Five to seven millicuries of ^{99m}Tc-pyropho-