XVII. Bone Marrow and Spleen

Bone Marrow Distribution of $^{99m}$Tc-Sulfur Colloid in the Patients with Anemia

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The bone marrow distribution of $^{99m}$Tc-sulfur colloid in the patients with anemia was studied with Gamma III type scintillation camera.

In normal subjects the bone marrow figures with $^{99m}$Tc-sulfur colloid were distinct in the pelvis, lumbar and thoracic vertebrae, and relatively distinct in the skull, proximal ends of both humeri and femora.

In the patients with iron deficiency anemia, the bone marrow distribution of $^{99m}$Tc-sulfur colloid in the vertebrae and pelvis were not so distinct as in the normal subjects.

In one patient with congenital hemolytic anemia, the bone marrow figures were very distinct and dense in normally distributed marrow sites.

The functional marrow distributed peripherally into distal end of humeri, femora, tibiae and fibulae.

In one patient with methemoglobinemia in distinct figures were observed in the truncus of femora as well as in normally distributed marrow sites.

In one patient with folic acid deficiency anemia the functional bone marrow was present in the distal end of humeri and femora, and carpal bones including normally functional marrow.

In one patient with sideroblastic anemia the configuration of vertebrae and pelvis was obscure although figures of the tibiae and distal portion of humeri were observed.

The bone marrow configuration of the hypoplastic anemia was generally indistinct and disappeared from the femora and humeri. These configurations were able to be classified into two types.

One of them was islet type, which was distinctively observed as islet type configurations among the diffuse, and low density marrow figures, and was distributed in the pelvis, humeri, femora, vertebrae and skull.

The $^{59}$Fe-ferrokinetics of this group was relatively active in comparison with the other type of the patients with hypoplastic anemia.

The another type was diffuse type demonstrated as the diffuse and indistinct configurations mainly in the pelvis, vertebrae and humeri.

The $^{59}$Fe-ferrokinetics of this group was absolutely inactive with low uptake of $^{59}$Fe into the bone marrow.

In conclusion the distribution of $^{99m}$Tc-sulfur colloid in the bone marrow was well correlated with the existence of functional phagocytic marrow of the patients with anemia.