Splenic Scintiscanning with Congenital Heart Disease

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It would appear that severe cardiac malfomation is associated with congenital absence of the spleen. It is important to diagnose the agenesis of the spleen with congenital cardiac disease because of determine the surgical therapy.

Splenic scintigraphy using ^{203}Hg-MHP 25–100 μCi has been performed in 35 cases of congenital heart diseases since May 1968. Patients age was ranging from 12 monthes to 22 years. The splenic scanning resulted 10 cases of normal, 10 cases of inversed and 15 cases of unknown spleen position. The liver of asplenia in 15 cases was transposed in 5 cases, symmetric in 7 cases. Studies of the peripheral blood of asplenia in 15 cases revealed the presence of Howell-Jolly bodies in 12 cases.

In the case of asplenia, distribution of ^{203}Hg-MHP were distinct in the heart and the distinction of heart was obserned 13 cases in the 15 asplenia patients. In addition to the presence of Howell-Jolly bodies, distinction of heart led to a presumptive diagnosis of congenital asplenia.

Evaluation of Quantitative Representation in Bone Marrow Scintiphotography Using ^{99m}Tc Sulfur Colloids

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The bone marrow scanning using ^{99m}Tc sulfur colloid is a useful method to understanding the patients hematopoietic status. Then, active bone marrow distribution was studied quantitatively in order to obtained more pricise information.

One hour after intravenous administration of 10 mCi of ^{99m}Tc sulfur colloid, at preset time exposure, bone marrow scanning were perfomed with scintillation camera and 1600 channel analyzer connected to it. The data were stored in 1600 channel word memory with 40 X 10 Matrix, and were displayed on the oscilloscope as Map image at appropriate threshold level. On the Map image, 30 area was selected over the bone marrow that is skull, both humeri, sternum, thoracic spine, lower lumbar spine, sacrum, ilium, both femurs, in which count were printed out through "ROI". Radioactivity of 30 area in each bone marrow was added and these values were graphed as the distribution pattern of the active bone marrow. Moreover, in 10 cases whose liver function was normal, bone marrow/liver ratio was examined in the sternum, vertebrae, sacrum, ilium and knee part.

In normal case, high radioactivity were observed on the sternum, vertebrae, sacrum, ilium. In patients with chronic granulocytic leukemia, polycythemia vera, hereditary spherocytosis, remarkable extension pattern extending into distal femur, proximal and distal tibia and bones of foot, were observed In these cases, uptake of knee part were evenly matched in that of sternum or pelvic bones. In cases of iron deficiency anemia, bone marrow distribution was similar comparable to normal cases, but marrow uptake increased in generally. In patients with hypoplastic anemia, marrow uptake decreased in usual marrow site, however, remaining active bone marrow observed islet pattern were almost normal uptake.

In conclusion, our method and result presented above are useful for quantitative assessment of active bone marrow distribution.

Clinical Evaluation of Radiolymphadenography in Patient with Malignant Lymphoma Utilizing ^{67}Ga-citrate and ^{99m}Tc-Sulfur-Colloid

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^{67}Ga-citrate is the most usefull radiopharmaceutical for scanning of malignant tissues especially malignant lymphoma. The abdominal lymph nodes, however, can be hardly visualized, because of normal distribution of ^{67}Ga activity to abdominal organs, such as liver, spleen and kidneys and excretions into bowel.

Scintiphotogram of abdominal lymphnodes can be easily got utilizing ^{99m}Tc-sulfur-Colloid. The lymphnode images by this method is well corresponded to the image of lymphangiography by lipijodol.

In this study, radiolymphoadenography of both nuclides were investigated and these results were compared with each other.

Scintiphotoes with ^{99m}Tc-Sulfur-Colloid were taken 2–3 hours after 2 or 3 mCi of subcutaneous injection on the back of the both feet with local anesthesia.

Scintiphotoes with 1–2 mCi of ^{67}Ga-citrate were taken, 48–72 hours after intravenous injection following after saline enema.

Remakable uptake of ^{67}Ga-citrate to affected lymphnodes was observed in neck, axilla, mediastinum, and even in abdomen, before treatments. These uptake however decreased with any effective treatments and gave false positive images, then became false negative. It was very difficult to evaluate these images.

Normal ^{99m}Tc-Sulfur-Colloid scintiphoto showed lymphnodes chain groups from ingunal area to abdominal-para-aortic area, in the shape of inverted "Y".

In patient with malignant lymphoma scintiphotoes vary according to the degree of involvement, such as absence or interruption, marked asymmetory and enlargement.

Normalization on both scintiphotoes is thought as successful treatment. For clinical diagnosis and staging, follow-up of course and treatment, it is useful to use both nuclides for radiolymphadenography.

Studies on Iron Metabolism of Pathogenesis of Anemia Associated with Uterine Myoma

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Anemia associated with uterine myoma may be caused by indirect hormonal influences to iron metabolism that introduced by tumour formation, by dysmenorrhea and by regulation of these physiological phenomena.

The mechanism of the anemia associated with uterine myoma has been considered as iron depletion by blood loss, but the mechanism of this anemia is yet uncertain.

The purpose of this study was to clarify the mechanism of this anemia associated with uterine myoma from the view of iron metabolism.