E. Blood, Bone Marrow, Spleen and Reticuloendotherial System

2601

LYMPHOSCINTIGRAPHY IN THE EVALUATION OF THE PATIENTS WITH SECONDARY LOWER EXTREMITY LYMPHEDEMA. K. Asakura, Y. Ono, K. Watai, K. Yuzuta, H. Kawashima, S. Maeda, T.Ikegami, M. Ujiie and K. Matsui Department of Radiology, Yokohama City University School of Medicine. Yokohama

The results of Tc-99m sulfur or rhenium colloid lymphoscintigraphy in 41 patients with secondary lower extremity lymphedema were reviewed. These patients include 23 uterine cervix cancers, 12 other pelvic tumors, 4 malignant lymphomas and others.

The patterns of scintigrams were classified as follows, (A) normal radiocolloid distributions in the ilioinguinal chain of nodes; (B) decreased uptake by the ipsilateral iliac and/or inguinal nodes; (C) diffuse activity throughout involved lower extremity; (D) persistence of radioactivity in the lymph vessels of the involved lower extremity; and (E) markedly decreased uptake by the ilioinguinal nodes without dermal back flow. The scintigraphic patterns were well correlated with clinical grades of lymphedemas.

The scintigraphic methods at present appears to have value in the study of the patients with lymphedema.

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PROSTATIC LYMPHOSCINTIGRAPHY WITH Tc-99m RHENIUM COLLOID. E. Ohtake, Y. Ohishi, A. Kido, M. Noguchi, H. Tabuchi, H. Murata, K. Chiba, H. Yamada and K. Matsui. Tokyo Metropolitan Geriatric Hospital and Yokohama City University School of Medicine. Tokyo and Yokohama.

This study was undertaken to visualize lymphatic drainage of the human prostate using the radionuclide method.

Thirteen male patients (6 with prostatic cancer, 3 with bladder tumors and 4 with no malignancy in the pelvis) were examined by prostatic lymphoscintigraphy. Their ages ranged from 62 to 83 years (average: 74 yrs). The lymphoscintigram was obtained 3 – 5 hours after intraprostatic injection of Tc-99m rhenium colloid, using both a parallel hole collimator and a pinhole collimator.

Out of 13 patients, the presacral lymph nodes were visualized in 4, the external iliac nodes in 7 and the internal iliac nodes in 7. The pinhole collimator was useful in resolving the details of these lymph nodes.

In conclusion, the findings of our study suggested that the prostate drained through 3 sets of lymphatics: 1) draining into the presacral nodes, 2) draining into the external iliac nodes and 3) draining into the internal iliac nodes.

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STUDIES ON LYMPH NODES SCINTISCANNING AGENTS – MEASUREMENT OF PARTICLE SIZE OF RHENIUM COLLOID – Y. HASEGAWA, T. HASHIZUME, K. IBUKA, K. SHIHOMURA, S. NAKANO Department of Nuclear medicine The Center for Adult Diseases OSAKA

It has been reported that there is a optimal range of the particle size of radio-colloid, with which favorable image in lymph scintigraphy can be obtained. Our recent clinical study on lymph nodes scinti scanning agents revealed that rhenium colloid was the most favorable one of those examined. In this report, we studied the size and shape of rhenium colloid using nucle pore and gel filtration, and electromicroscopy. The N.P.filters with the pore sizes of 200, 100, 80, 50, 30 and 15nm retained 2.1, 2.4, 4.8, 77.1, 78.7 and 80.6 % of the initial radioactivity. Accordingly, about 70% of the activity distributed to the particles with the sizes from 50 to 80 nm. On the fractionation by Sepharose 4B, the peak activity appeared at the void volume with a wide tailing. Electromicroscopic examination showed that rhenium colloid presented irregular shape with uneven density. The short diameter of the particles distributed in the range between 6 and 40nm. Rhenium colloid has a broad range in particle size and irregular shape.

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CORRELATION BETWEEN BONE MARROW SCINTIGRAPHY WITH In-111-CHLORIDE AND THE DATA OF STERNAL PUNCTURE. N.Saijo, I.Yamaguchi, M.Tanaka, K.Uranami, U.Ebina, N.Sakai, U.Hamabayashi, M.Fukuda and T.Takahashi. Rumoi City General Hospital, 4th Dept. of Medicine, Sapporo Medical College. Dept. of Radiology, Sapporo Medical College.

Although bone marrow scintigraphy with In-111-chloride has been used for the detection of erythropoietic activity, the correlation between the distribution of the radioactivity and the data of sternal puncture were still unknown. In this report, we studied the correlation between the distribution of radioactivity in bone marrow scintigraphy with In-111-chloride and the count of nucleated cells, M/E ratio and the count of erythroblast. Imaging was performed at 48 hours after the injection of 2 mCi of In-111-chloride in the cases of 25 patients. Each count ratio of sternal parts and lumbar parts, liver and lumbar parts, spleen and lumbar parts and shoulder parts and lumbar parts were compared with the results of the sternal puncture.

It was found that the count of nucleated cells increased with increasing radioactivity of the shoulder parts ($r=0.52$). M/E ratio decreased with increasing radioactivity of the sternal parts ($r=-0.34$), liver($r=-0.30$), spleen($r=-0.29$) and shoulder parts($r=-0.32$). The count of erythroblast did not correlated significantly with those count ratios.