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SCINTIGRAPHIC IMAGING OF SPLENIC AUTO-TRANSPLANTATION

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Splenectomy is known to increase the risk of bacterial infection. Recently splenic autotransplantation has been suggested as a method of preserving splenic function. In order to demonstrate the viability of transplanted tissue, spleen scintigraphy using Tc-99m labeled heat damaged red blood cell were carried out. So far 17 studies have done in 8 patients. In all patients, spleen scans were positive 1 month after surgery, though images showed poor contrast against considerable background of bone marrow and blood pool. The quality of the image much improved five to twelve month after surgery.

Labeling yields were 77.3% on the average, and did not affect the quality of images. Important techniques in the splenic autotransplantation imaging include a thorough elimination of free Tc-99m before injection and to use comparatively small volume of damaged red cells.

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EFFECT OF WARMING ON LYMPH FLOW IN THE LOWER EXTREMITY.

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The relationship between hyperthermia and lymph flow in the lower extremity was examined with the Tc-99m-HSA lymphoscintigraphy, which has been produced and developed for dynamic study of lymph flow by us.

Subjects were performed in 27 males and females; 8 were normal volunteers and 19 were patients with various diseases. Patient was set on his back, and four mCi of Tc-99m-HSA was injected subcutaneously in the pre-tibial region. Immediately after the injection, the radioactivity was counted over the thigh for 40 minutes and the time activity curve in the ROI showing lymph flow was generated. Hyperthermia was on the pre-tibial region was started at the time of 10 minutes after the beginning of the scintigram.

An activation of lymph flow was found at surface temperature (ST) $37.46 \pm 1.37^\circ\text{C}$ and deep temperature (DT) $36.60 \pm 1.53^\circ\text{C}$ in normal volunteers, although at ST $36.27 \pm 2.46^\circ\text{C}$ and DT $34.99 \pm 2.33^\circ\text{C}$ in patients with various diseases.

It was concluded that lymph flow can be activated by the temperature of about ST $34-39^\circ\text{C}$ and DT $33-38^\circ\text{C}$ in the lower extremity and tends to be activated more easily in a certain kinds of diseases than in normal volunteers.

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LYMPHODYNAMICS IN LOCAL AREA OF BREAST CANCER.

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The lymphodynamics in local area of breast cancer were studied with a lymphoscintigram using Tc-99m-HSA. In the breast cancer group Tc-99m-HSA 3mCi was injected into the mammary tissue at the border of the tumor, and in the control group at the upper border of the opposite areola. After the injection data were collected for 15 seconds/1 frame and 28 minutes using digital gamma camera GCA-90A. Type of the lymphatic pathway on the lymphoscintigram were divided into 4 types, axillary, parasternal, axilloparasternal and diffuse type (slow or fast flow). In the control group, all twelve cases were of the diffuse type (slow), while in the breast cancer group 19 out of 47 cases were of the diffuse type (fast), 12 cases of the parasternal type, 9 cases of the axillary type and 7 cases of the axilloparasternal type. The clearance (T 1/2) of Tc-99m-HSA at the injection site was 83.7 minutes on the average in the control group, while 40.0 minutes about half in the breast cancer group. Concerning with the type of lymphatic pathway and clearance, the breast bearing tumor differed from normal breast.

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COMPARATIVE STUDY OF Tc-99m RHENIUM COLLOID ESOPHAGEAL SUBMUCOSAL LYMPHOSCINTIGRAPHY AND COMPUTED TOMOGRAPHY IN LYMPH NODE METASTASIS OF ESOPHAGEAL CARCINOMA. Y.Katoh, K. Yamada, M.Mutsukura, T.Sugawara, A.Nakashima, H.Maeda, A.Kuwahara, T.Saitoh, and M.Kobayashi. Oita Medical College, Oita.

For the study of lymph node metastasis in esophageal carcinoma, we had performed lymphoscintigraphy at 2 hrs and 4 hrs after injection of Tc-99m rhenium colloid at esophageal mucosa. The resected lymph nodes had been studied histologically, and their lymphoscintigraphy had been performed. We had studied whether they could be noted by the scintigraphy and CT, or not. By scintigraphy, lymph node metastasis could be easily noted, but the rate of false positive was high. In the use of scintigraphy with CT, the rate of correct diagnosis could be high. In lymphoscintigraphy almost all noted lymph nodes were found sinus histiocytosis histologically, and lymph nodes filled with tumor cells at high grade tended to be not noted.