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DIAGNOSIS OF REGIONAL LYMPH NODES OF BREAST CANCER USING LYMPHOSCINTIGRAM SUPERIMPOSED ON CHEST ROENTGENOGRAM. S.Terui, H.Oyamada. Division of Nuclear Medicine, National Cancer Center Hospital, Tokyo.

In order to achieve a possibly exact location of the lymph nodes of the breast cancer, we applied a new technique by way of an injection of Tc-99m rhenium colloid(Tc-99m Re) superimposing the image of lymphoscintigram on the patient's roentgenogram. We performed on 37 preoperative patients with breast cancer. To obtain a lymphoscintigram, 5mCi of Tc-99m Re was injected into the periosteum between the 3rd and the 4th rib just on the inner side of the tumor of the affected breast and also on the midclavicular line of the other side of the breast. An anterior view of the life-sized lymphoscintigram was taken 4 hours after the injection. For the accurate diagnosis of the lymph nodes, the life-sized lymphoscintigram was superimposed upon the postero-antero roentgenogram of the chest. Then the regions and the number of the visualized nodes were assessed. The visualized nodes were seen spreading from the internal mammary to the axillary regions. All patients showed visibility of the internal mammary region from the 1st to the 5th intercostal spaces. The life-sized superimposed lymphoscintigram is very easy to make and one can easily grasp the spread and the exact location of those visualized lymph nodes.

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AN INVESTIGATION OF Tc-99m RHENIUM COLLOID LYMPHOSCINTIGRAPHY OF BREAST CANCER. T.Nakasato, K.Yoshioka, Y.Kojima, T.Takahashi, T.Yanagisawa, M.Ishida\* and S.Mori\*. Dept. of Radiol. and 1st Dept. of Surg\*. Iwate Medical Univ., Morioka.

Rather than pathologically investigating the tumor of a verified breast cancer, Tc-99m Rhenium Colloid(Tc-99m ReC) lymphoscintigraphy was applied to observe the lymphatic flow to the regional lymph nodes. Furthermore, the lymphatic flow from these regional lymph nodes, located among healthy mammaries were also observed. The subjects consisted of 12 women(average age of 50.8 yrs) in the stage I-III phase. Tc-99m ReC 4mCi(0.4ml) was injected into two areas in the surrounding tumor tissue, and their lymphatic flow as well as the lymphatic pathway were scanned and observed at 1,3, and 6hr intervals with the HITACHI-GAMMA-RCT and HARP(RP-100). ROI was measured in each of the lymph node regions (axillary, subclavicular, and parasternal), and their lymphatic flow was analyzed by the accompanying data every 7 minutes with revision of Tc-99m radioactivity. Results showed the lymphatic flow pattern in breast cancer to be mainly the axilla type, and compared with the n(-)cases, the n(+)cases showed a more diversified pattern. On the otherhand, the lymphatic flow of normal mammaries depended upon the area of the original injection.

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ENDOSCOPIC LYMPHOSCINTIGRAPHY WITH SPECT. \*Y.Kohno, \*K.Orita, \*\*Y.Hiraki and \*\*K.Aono. \*1st Dept. of Surgery and \*\*Dept. of Radiology, Okayama University Medical School, Okayama.

Endoscopic Lymphoscintigraphy was performed, using Tc-99m Rhenium colloid on 26 patients with carcinoma of the stomach and on 6 controls without gastro-esophageal pathology, to examine the lymphatic drainage from the cardia or the esophagus to the regional lymph nodes. SPECT was performed on 22 out of 32 patients. In 12 cases, injected the colloid into the submucosal layer of the cardia and examined the intraperitoneal lymph flow from there, the rate of detection of paraaortic lymph nodes by SPECT was 66%, and in particular the paraaortic lymph nodes in the upper portion of the left renal vein were detected at a rate of 58%. Intramediastinal lymph flow was examined and detected in 3 patients. In 4 cases, injected the colloid into the middle or the lower portion of the esophagus, both the ascending and the descending flow could be depicted by SPECT. Endoscopic lymphoscintigraphy, when combined with SPECT, is considered to be very useful for imaging the lymph flow from the cardia to the regional lymph nodes. On the other hand, the conventional planar images have no demonstrable value in the detection of the lymph flow of the stomach.

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Topographical study of the lymphatic system, using intradermal injection of both Tc-99m labelled MDP and Tc-99m labelled HSA. S. Watanabe, R. Nakamura, N.Takeyasu, K.Taira, H.Hase, I.Arai, A.Hirota, T.Sakai, S.Yabuki, K.Machii, T.Takahashi, K. Sakai, and M. Hoshino. The 3rd Dep. of Int. Med., Sch. of Med., Toho Univ., Tokyo.

The purpose of this study was to evaluate the clinical usefulness of lymphoscintigraphy using intradermal injection of both Tc-99m labelled MDP (MDP) and Tc-99m labelled HSA (HSA) just above the ankle for the diagnosis of lymphedema. The subjects consisted of 16 patients with lymphedema. Topographical images were obtained by a gamma camera for about 20 minutes after the injection. Diffuse activity and obstruction of lymph vessels were shown in the all cases, including clear lymphatic collaterales in the five cases, in the secondary lymphedema, while lymphatic vessels and lymph nodes were not shown in the primary lymphedema. It was suspected that intradermal injection of HSA and MDP just above the ankle can make clearer image of the lymphatic system, comparing with subcutaneous injection of Tc-99m labelled Rhenium Colloid (Re) at the foot. The lymphoscintigraphy using HSA and MDP was indicated to be more useful for the diagnosis of lymphedema than that using Re.