

23

Use of Mammary Lymphoscintigraphy and Intraoperative Radioguided Gamma Probe in Detection of Sentinel Lymph Node in Breast Cancer

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Purpose: The sentinel lymph node(SLN) is defined as the first node draining primary tumor site and reflect the histologic features of the remainder of the lymphatic basin in breast cancer. This study was designed to evaluate the usefulness of lymphoscintigraphy(LSG) and intraoperative gamma probe(IGP) in SLN biopsy and axillary lymph node(ALN) metastasis in breast cancer. **Methods:** LSG using 30-37MBq Tc-99m antimony sulfide(0.4ml) was performed preoperatively in 15 patients of biopsy proven primary breast cancer. Four intraderm injections of 0.1ml radiotracer were done at 2-3mm of the tumor margin. Scanning were obtained by early dynamic image(10sec/frame) for 10min, static image(5min/frame) of 30-60 min and delayed image(5min/frame) at two hours. The SLN was identified on LSG and removed with the aid of the IGP during operation. **Results:** In 14 of 15 patients, the 31 SLNs were noted by LSG and IGP(detection rate:93.3%). Dynamic image of LSG revealed lymphatic drainage pattern and SLN in six of 14 patients. 2.47 ± 2.00 and 2.36 ± 1.96 nodes were noted by LSG and IGP, respectively. In seven of 14 patients, 8/31 SLNs were the only nodes that contained metastatic tumor(50%). In five patients, concomitant 26/86 ALN metastasis were detected(sensitivity:72%). In seven patients, 21/31 SLNs were negative for cancer cell on frozen section, and concomitant 120/247 ALNs were not involved by tumor(specificity:100%). In two of seven patients with SLN metastasis, ALN were not contained metastatic tumor(negative predictive value:78%). **Conclusion :** SLN biopsy with LSG and IGP is a reliable method to predict axillary lymph node metastasis in breast cancer.

24

Anti-CEA Monoclonal Antibody in The Diagnosis of Colorectal, Lung and Ovarian Carcinoma

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Objectives: This study evaluated the diagnostic value of radioimmunoimaging (RII) with ⁹⁹Tc labeled monoclonal antibody C50, raised originally against carcinoembryonic antigen (anti-CEA) in various tumors. **Method:** 152 pathologically confirmed patients with a tumor were imaged prior to surgery with an anti-CEA monoclonal antibody labeled with ⁹⁹Tc. There were 115 patients with ovarian carcinoma, 26 patients with colorectal carcinoma and 11 patients with lung carcinoma. Images were acquired at 3-6 h post injection and were analyzed by the double blind method. Images of patients with ovarian cancer were compared with B-ultrasound images. Immunohistochemical staining was performed on all cases of colorectal cancer. **Results:** All RII images demonstrated excellent contrast, clear lesions, and no serious toxic or other side reactions occurred. Transient chills and fever were observed in 3 cases. This study showed a sensitivity=88.2%, specificity = 83.2%, and an accuracy = 4.0%. The smallest lesion size detected was 2 x 2 cm. The total combined lesion detection rate for primary, metastatic, and recurrence lesions was 84.4%. **Conclusion:** We conclude that ⁹⁹Tc labeled anti-CEA MoAb C50 can be used in the diagnosis of colorectal carcinoma, ovarian carcinoma, and lung carcinoma.