

between June, 2001 and March, 2009. We judged it as SLNs, LNs which we could detect the uptake of ^{99m}Tc -Phytate colloid radioisotope (RI) or the staining with indigocarmine blue dye. Also, we decided it as para-SLNs (specific non-SLNs), LNs which were no uptake of RI and no staining with blue dye, but swelling or palpable around the SLN. We performed histological examination by frozen section and cytological one by stamp smear as intraoperative examination.

Results: The average age of all patients is 56 years old. Of 441 cases, SLN was able to be detected in 420 cases (94.8%). Nine cases (42.9%) had ALN metastases, of 21 cases whose SLNs were not detected and ALNs were additionally dissected. Of 420 cases that we were able to identify SLN, in 57 cases (13.6%) SLN metastases were diagnosed as positive at intraoperative examination and we performed ALND for those cases. Of 363 cases whose SLN metastases were diagnosed as negative at intraoperative examination, in 154 cases para-SLN was removed and, in seven (4.5%) of 154 cases, para-SLN metastases were diagnosed as positive at intraoperative examination. 15 cases were diagnosed as positive on SLN metastasis by the histopathological exam with permanent sections, and the false-negative rate was 4.8%.

[Conclusions] Mean of observation time is 44 months, no case is found with local recurrence by now. However, it is significant that 7 cases of metastasis-positive para-SLN deserved 37.5% of the false-negative cases. Also, we can not deny the possibility that reliability of SLNB may decrease when metastasis occurred in SLN, because SLN metastasis is present with 50% of the 22 case that we can not detect. Therefore, it is so important that we investigate para-SLN to avoid axillary LN recurrence as much as possible.

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Poster

A simple 'pulsing' technique of massage to improve detection rates of Blue Dye sentinel nodes in breast cancer

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Background: Detection rates vary from 70% to 96% after injection and Guilianno's technique of massage in the blue dye alone method of sentinel node in breast cancer. Poor detection rate with blue dye alone has been one of the major limiting factor in its usage over the dual technique. Injection sites for blue dye vary from intradermal, intra or peritumoral to subareolar injections. Massage is normally done, as described by Guilianno, by rotatory movements of the hand over the injection site. Passage of the dye through the lymphatics is by passive movement. Lymphatics start in the interstitium as avascular plexuses, then form valved precollecting channels. Entry into the avascular plexus at start of the lymphatic pathway depends on interstitial pressure. Subsequent flow through valved lymphatics is also passive. Rotatory massage may be limited in aiding forward flow. A simple pulsing technique of massage is described which significantly improves detection rates.

Methods: 2 ml of 2.5% Patent Blue dye is injected in the subareolar free space. Massage is done by the surgeon, prior to scrubbing, for at least 2 minutes by intermittent vertical pulsing movement of the flat of the fingers of one hand on the nipple areolar complex. The axilla is approached in the standard surgical way usually about 10 minutes from the time of injection.

Results: A total of 242 consecutive sentinel node procedures were performed between September 2007 and October 2009. Blue nodes were retrieved in all but 3 cases (239/242) giving a detection rate of 98.7%. Of the 3 cases that failed to show a blue node 1 was in a very large lady which made surgery technically difficult. One had previous lumpectomy and axillary sample and one other failed to show a blue node (it was thought not enough time was given between injection and surgery).

Conclusion: A new and simple technique is described that significantly improves detection rates in blue dye method of sentinel node retrieval. The technique of vertical pulsing massage may be increasing the interstitial pressure better than the horizontal and rotatory technique thus improving uptake of the dye through the avascular plexus into the precollecting channels. It would also seem plausible that the intermittent pulsing movement helps the forward fluid movement of the dye through the valved lymphatics thus enhancing detection rates.

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Poster

Three-dimensional multidetector-row computed tomographic lymphography for sentinel lymph node biopsy in breast cancer

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Background: Three-dimensional multidetector-row computed tomographic lymphography (3D MDCT-LG) is useful for visualizing lymph flow and

detecting a sentinel lymph node (SLN). In this study, we evaluated the usefulness of 3D MDCT-LG for SLN biopsy in patients with breast cancer.

Methods: From July 2007 to February 2008, forty patients with breast cancer (N0) underwent 3D MDCT-LG one minute after injection of iohexol under the periareolar skin on the day before surgery. The location of the SLN was marked on the skin using the laser light navigator system of the CT. During the operation, SLN biopsy was performed through a skin incision on the marked place after periareolar injection of patent blue, followed by resection of the primary tumor and backup axillary dissection. The SLN was tagged separately from other nodes. All removed nodes were pathologically examined.

Results: SLNs were clearly visualized by 3D MDCT-LG in 30 (75%) patients and faintly in 10 (25%). The patients with faintly visualized SLNs were significantly older than those with clearly visualized SLNs (72 ± 13 vs. 56 ± 11 , $P < 0.01$). SLNs were identified in 37 of 40 patients (92.5%). The accuracy was 94.4% (35/37), and the false negative rate was 15.4% (2 of 13). Metastases were histologically confirmed in SLNs of 14 (35%) patients who did not have metastases in the axillary region preoperatively.

Conclusions: Preoperative 3D MDCT-LG was as useful for SLN biopsy as the radiocolloid method. Combination of preoperative 3D MDCT-LG and blue dye technique facilitates quick and accurate identification of SLNs.

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Poster

Feasibility of primary systemic therapy to save axillary lymph node dissection in patients with initial axillary lymph node metastasis

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Background: Primary systemic therapy (PST) downstages up to 40% of initial documented axillary lymph node (ALN) metastasis. The present surgical treatment strategy after PST may neglect the fact that patients with complete tumor response in metastatic axillary lymph node (ALN) could have the chance of being spared from axillary lymph node dissection (ALND). The aim of this study was To evaluate the feasibility and accuracy of sentinel lymph node biopsy (SLNB) after PST among the group of patients with documented ALN metastasis at presentation. And, we compared the difference of SLNB accuracy according to clinical tumor response after PST.

Material and Methods: We analyzed 66 patients with documented ALN metastasis who underwent SLNB and concomitant ALND after PST. Axillary ultrasound (USG) was used to evaluate the clinical response of initial documented ALN metastasis after PST. Intraoperative lymphatic mapping was performed using blue dye with or without radioisotope.

Results: After PST, pathologic complete response rate in patients with metastatic ALN was 31.8%. The overall success rate of SLNB after PST was 87.9%, and the mean number of identified sentinel lymph node was 2.8 (1-8). There was no significant difference in success rate of SLNB according to age, clinical tumor size, type of PST, and clinical tumor response. Six patients with negative sentinel nodes had positive non-sentinel nodes after the final pathologic examination (false-negative rate: 15.4%). According to clinical tumor response in axillary metastases after PST, false-negative rate was 0% in clinical complete response group and 19.4% in residual axillary metastases group.

Conclusion: Our findings suggest that SLNB is feasible in patients with initial documented ALN metastasis that had clinically complete response for metastatic ALN after PST. Further investigation in a prospective setting should be also designed to confirm our results.

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Poster

Optimization of the intraoperative sentinel node procedure in breast cancer with one-step nucleic acid amplification (OSNA) method

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Background: Recently, a new procedure has been developed for the evaluation of sentinel node in breast cancer. It is based in amplification of mRNA of 19 Cytokeratin by a loop mediated amplification reaction (RT-LAMP) otherwise known as one-step nucleic acid amplification (OSNA).

The amplification reaction time takes only 16min, but the transportation of the node from the operating room, the dissection of the node from the