lymph node. The purpose of this study was to indentify factors predictive of non-sentinel lymph node involvement after a positive sentinel lymph node.

Methods: The medical records of 181 breast cancer patients who underwent sentinel lymph node biopsy examination and ALND were selected from a prospectively collected database and were reviewed for multiple clinicopathologic variables.

Results: Univariate analysis showed a significant association between non-sentinel node involvement and primary tumour size (p = 0.000), size of sentinel node metastasis (p = 0.000), extracapsular node extension (p = 0.000) and the number of negative sentinel nodes (p = 0.002). In a multivariate analysis, only extracapsular extension remained significantly associated with a positive non-SN status.

Conclusions: Extracapsular extension is an independent predictor of non sentinel node positivity when a positive sentinel node is found. However, more additional factors need to be identified before in selected cases axillary dissection as a surgical staging procedure can be omitted.

Variable	Univariate	Multivariate	
	P	*P*	Odds ratio (CI)
Tumour size	0.000*	0.23	1.044
SN metastasis size	0.000*	0.107	1.080
Extracapsular extension	0.000	0.003	0.291
Number of positive SNs	0.096*	0.347	1.347
Number of negative SNs	0.000*	0.076	0.606
Age	0.455		
Tumour type	0.065		
Multifocal	0.796		
Lymphovascular invasion	0.616		
ER positive	0.554		
PR positive	0.568		
Mode of detection	0.133		
Parenchymal invasion	0.081		

Categorical p-values were calculated in univariate analysis with Fisher's exact test.
Continues variables (*) were calculated with Mann-Whitney U-test.

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The value of intraoperative frozen section examination of sentinel lymph nodes in breast cancer

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Background: Sentinel node biopsy is a standard diagnostic component for the treatment of patients with a primary mammacarcinoma. In an investigation of the prognostic survival of this cohort, a sentinel lymph node biopsy is indicated when a positive sentinel node is discovered. By concomitantly performing intraoperative lymph node biopsy and primary tumor resection, patients with a positive sentinel node are not subjected to the inconvenience and risks of second surgical intervention. The aim of this retrospective study was to determine the sensitivity, accuracy and long-term consequences of the frozen section examination of the sentinel node in breast cancer patients.

Methods: Sentinel lymph node biopsy was performed in 616 patients with an invasive tumor of the breast. Frozen sections of the sentinel node were taken from the optimal cross-sectional surface. In the event of a negative node, frozen sections were taken from the remaining sentinel node and stained using hematoxylin-eosin and immunohistochemistry.

Results: Sentinel node frozen biopsy accurately predicted the state of the axilla in 560 (90.9%) patients. There were 50 false-negative findings in patients with sentinel node metastases. The sensitivity and specificity of the intraoperative frozen section examination were 71.6% and 100%, respectively. Follow-up (mean 36.3 months) of all false-negative cases showed no development of local axillary recurrence. The results demonstrated no significant relation between tumor size and frozen section sensitivity. Frozen section investigation was less sensitive in ascertaining micrometastases (sensitivity 61.1%) than macrometastases (sensitivity 84.0%, p < 0.001). The majority of the false-negative results were due to the fact that micrometastases were not localized during intraoperative frozen section examination. However, the presence of micrometastases within the sentinel lymph node is of limited value since a positive sentinel lymph node biopsy was attained in only 30% of micrometastatic patients versus 61% of macrometastatic patients.

Conclusion: Intraoperative frozen section examination of the sentinel node is a useful predictor of axillary lymph node status in breast cancer patients. Seventy-two percent of the patients with metastatic disease were correctly diagnosed and spared a second surgical procedure.

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Concordance of Her 2 neu and hormone receptor status between primary tumors and sentinel lymph node metastases

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Background: Earlier a 90−98% concordance has been observed between the primary and metastasis in both HER-2 neu and the hormone receptor status, though partly studied only on behalf of the oestrogen receptor (ER) and normally not all these factors simultaneously on the same nodes. Mostly they have included only distant metastases and macrometastasis, or the analysis was only made using immunohistochemistry (IHC).

For these reasons, our aim was to study the concordance in HER-2 neu amplification, as well as ER and progesterone receptor (PR) status between the primary tumours and SN (sentinel node) metastases, including also micrometastases and ITC.

Methods: The HER-2 neu amplification status and the status of hormone receptors ER and PR was evaluated in 99 sentinel node metastases from 38 primary tumours that were HER-2 neu positive in chromogenic in-situ hybridisation (CISH) and from 61 primary tumours that were CISH−. They consisted of 23 + 23 = 46 macrometastases, 6 + 28 = 34 micrometastases and 9 + 10 = 19 isolated tumour cells (ITC).

Results: No metastatic tissue for the CISH-analysis was found in 4 macro + 18 micro + 12 ITC = 34 cases. In the CISH+ primary tumours, 26 of 29 metastases were CISH+, including 23 macrometastases, 3 micrometastases and 3 ITC. Three were discordant turning negative in the metastasis. In the CISH− primary tumours, 35 of the 36 examined metastases were CISH−, while one micrometastasis showed a low level amplification of HER 2 neu gene.

The ER/PR status was concordant between the primary tumour and the SN-metastasis in 53/77 (68.8%), consisting of 29 macrometastases, 19 micrometastases and 5 ITC. No metastatic tissue for the analysis was found in 22/99 cases, consisting of 3 macro-metastases, 11 micrometastases and 8 ITC were cut. Altogether 24/77 cases were discordant.

Both the HER-2 neu amplification status and the ER and PR status could be assessed in 62/99 metastases. Full concordance in both HER-2 neu amplification status, that is positive or negative, as well as in the ER and PR status between the primary tumour and metastasis was observed in 38/62 (61.3%), that is 15/26 (57.7%) of the CISH+ cases and 23/36 (63.8%) of the CISH− cases. Of the 38 fully concordant cases were 24 macrometastatic, 13 micrometastatic and 1 ITC.

Conclusions: High concordance in HER-2 neu amplification, ER and PR status was observed between the primary tumours and their metastases, even with micrometastases and ITC, when evaluated separately. However, the full concordance between the primary tumour and the metastasis was observed less frequently.

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The distribution of axillary lymph nodes metastases and sentinel node biopsy after neoadjuvant chemotherapy in patients with locally advanced breast cancer

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Background: The use of neoadjuvant chemotherapy (NCT) becomes more ubiquitous in the treatment of locally advanced breast cancer (LABC), and axillary lymph nodes (ALN) downstage could be obtained in 20−30% pts. To perform SLNB substituting axillary lymph node dissection (ALND) in this pts population, the distribution of ALN metastases, SLNB successful rate (SR) and false negative rate (FNR) should be proved to be similar to that in early breast cancer.

Methods: First, we collected data of 370 LABC pts who underwent ALND after 2−3 cycles of NCT from 1996 to 2006. The ALN status at each level was analyzed. Then we performed SLNB followed by ALND in 88 pts after NCT from 2003 to 2007. We used Methylene blue alone in 81 pts and combined with 99mTc-SC in another 7 pts. The SR, FNR and accuracy of SLNB after NCT were evaluated.

Results: The distribution of ALN metastases in LABC after NCT was quite the same as that in early breast cancer, with very low incidence of skip metastases. After NCT, 30.3% pts had negative axilla, and ALN were positive only at L1 in 39.5% pts (Table 1).

The SR, FNR, and accuracy of SLNB with Methylene blue alone were 82.7% (67/81), 18.2% (10/55) and 85.1% (57/67), respectively; the rates with Methylene blue combined with 99mTc-SC were 100% (7/7), 16.7%