

**Conclusion:** When using periareolar injection of radioactive tracer combined with peritumoral injection of blue dye, significantly less patients have tumour positive axillary lymph nodes when comparing them with patients in whom both tracers are injected peritumoral. This can partly be explained by the fact that for the last two years we perform standard ultrasound examination of the axilla before SLNB, diagnosing metastatic disease in 6–7% of metastatic patients without the use of SLNB.

We conclude that the use of periareolar injection technique is a good and easy alternative to deep techniques, however close follow up is needed to ensure that local recurrence rates are comparable for both groups.

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### Are lymphogenic micrometastasis in breast cancer a prelude to macrometastases?

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**Background:** Since the introduction of the sentinel lymph node biopsy (SNB) in patients with breast cancer, micrometastases are detected in 15–20% of patients. The clinical relevance of these small lymphogenic metastases is unclear. There is a well established correlation between lymph node (macro-) metastasis and tumour size. If micrometastases are merely a prelude to larger lymph node metastases, one would expect a similar relation for micrometastasis. We evaluated the relation between lymphogenic micrometastasis and various primary tumour characteristics. **Patients and methods:** Between June 1999 and December 2004, 514 patients cT1/2N0 breast cancer underwent surgery that included SNB as a staging procedure. The presence of lymph node metastasis was evaluated after serial sectioning of the sentinel node(s) with 250 micrometer intervals and staining with H&E and immunohistochemistry staining. Based on the presence of tumour in the sentinel node, patients were categorised in three groups: N0: no metastasis (n = 295) N1micro: micrometastasis <2 mm (n = 83) and N1: metastasis ≥2 mm (n = 136).

**Results:** In contrast to the increasing frequency of macrometastasis in relation to tumour size (primary tumour <1 cm, 13%; 1–2 cm, 21%; 2–3 cm, 40%; and >3 cm, 41%; P < 0.001), the frequency of micrometastasis in the sentinel lymph node was not correlated with the size of the primary tumour: 17%, 15%, 19%, 18%, respectively. Bloom and Richardson grade, mitotic activity index, estrogen receptor status, and carcinoma type (ductal/lobular) could not be shown to have an impact on the occurrence of macro- and micrometastasis.

**Conclusion:** In contrast to the increasing chance of lymphogenic macrometastasis in larger primary breast cancers, the occurrence of micrometastasis was not influenced by tumour size. There appears to be a difference between the chance of micrometastasis and the development of macrometastasis. Micrometastasis merely being a prelude to macrometastasis appears unlikely.

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### The consequences of long-time arm morbidity in node-negative breast cancer patients with sentinel node biopsy or axillary clearance

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**Background:** Several studies have evaluated long time morbidity after sentinel node biopsy (SNB) and axillary clearance (AC) recording self reported morbidity or measuring arm circumferences or ranges of shoulder motions. Statistically significant differences in favour to SNB have been observed, but the consequences of the reported differences have been addressed in relatively few studies. Our aim was to evaluate long-time morbidity in axillary node negative breast cancer patients three years after sentinel SNB or AC emphasising the consequences of morbidity like work-related events and the need of physiotherapy.

**Patients and methods:** Morbidity was evaluated in 92 breast cancer patients three years after SNB only and in 47 patients after AC using a questionnaire. The circumferences of the upper extremities and the range of the shoulder movements were also measured.

**Results:** Two (2%) SNB and eight (17%) AC patients were not able to use the ipsilateral upper extremity to former extent, P < 0.005. One SNB (1%) and one (2%) AC patient were retired or on a long-time sick leave because of arm morbidity, P = NS. Clinically apparent upper extremity lymphoedema was observed in one (1%) SNB patient and in 6 (13%) AC patients, P < 0.005. Two (2%) SNB patients had received manual lymph drainage, one of them because of breast oedema. None of the SNB patients needed a compression sleeve. Seven (15%) patients had received

manual lymph drainage after AC, three (6%) of them wore also compression sleeve, P = 0.0009 for manual lymph drainage for arm oedema, P > 0.05 for compression sleeve.

**Conclusions:** The risk of remarkable long-time arm morbidity after SNB is minimal. Work-related events seem uncommon due to arm morbidity, regardless the extent of axillary surgery.

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### Is sentinel lymph node biopsy (SLNB) necessary in women undergoing contralateral prophylactic mastectomy (CPM)? Magee Womens hospital experience

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**Introduction:** SLNB remains controversial with prophylactic mastectomy. This retrospective study was undertaken to determine if SLNB is justified in patients undergoing CPM.

**Methods:** Between 1999 and 2004 a total 155 patients underwent CPM and 80 of them (51.6%) had SLNB performed. 103 of index tumors were diagnosed as invasive tumor. Multicentricity and/or multifocality were reported in 49.7% of index tumor specimens, and estrogen receptor was positive in 60% of them. Two invasive and 3 DCIS were diagnosed in 155 CPM specimens (n = 5, 3.2%). Both blue dye and gamma detection probe technique were used to identify the SLN in 95% of patients with CPM, and blue dye was used in 4 patients.

**Results:** Median number of identified SLN is 2 (range 1–6) at CPM site. There was no malignant tumor at CPM specimens of 2 patients (Fibrocystic change, Sclerosing Adenosis), but both of them had positive SLNB for metastatic carcinoma (n = 2/80 = 2.5%). Final treatment decision might be affected in 7 patients in CPM group (4.5%) if all 155 would have underwent SLNB (2 SLNB were positive, 2 invasive tumor were diagnosed at CPM specimens, and 3 DCIS were diagnosed at CPM specimens). There was no evidence of arm lymphedema in patients who had undergone CPM and SLNB at a median follow-up of 24 months.

Table 1: Age, malignant histology, family history, BRCA result and time of CPM surgery in all CPM patients

	Total CPM (n = 155)	CPM+SLNB (n = 80)
Age (min-max) years	47 (26–70)	47.5 (26–70)
Malignant histology	5 (3.2%)	4 (5%)
Family history	81 (52.3%)	37 (46.3%)
BRCA 1 or 2 (+)	11 (7.1%)	5 (6.3%)
Immediate CPM	132 (85.2%)	68 (85%)

**Conclusion:** Even though SLNB is a minimally invasive method of evaluating the lymphatic basin, this retrospective study does not support its use in patients undergoing CPM.

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### Surgical biopsy for nonpalpable breast lesions: should be abandoned as initial management?

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**Background:** In this retrospective clinical study an analysis of the histologic findings of nonpalpable breast lesions, treated by open surgical biopsy in our Breast Unit was performed. Aim of that analysis was to clarify if the surgical biopsy could still be a valuable initial management of nonpalpable breast lesions.

**Patients and methods:** A series of 750 women underwent 784 preoperative localizations of nonpalpable, mammographically detected, breast lesions during the last 12-year period. Indications for biopsy were: 1) clustered microcalcifications, 2) solid mass, and 3) a radiological parenchymal distortion, that were not classified as benign by BI-RADS. The lesions were localized preoperatively using hook-wire methods, and all biopsies were performed under general anesthesia.

**Results:** Histology revealed carcinoma in 210 (26.8%) cases; noninvasive in 143 (68.1%) cases and infiltrating in 67 (31.9%) cases. The highest malignancy rate was found in cases with microcalcifications (137 carcinomas out of 380 cases, 36%), while for the remaining 404 cases, 73 (18%) cancers were found. Lymph node invasion was present in 22% of patients with invasive cancers. Frozen section was available for 540 cases (68.9%), and it was in all accurate in terms of positiveness of malignancy. General anesthesia was used in all cases without any side effects.