

application time was approximately 16 hours preoperatively, while the blue dye was applied 10–15 min. before operation. After SN biopsy all patients underwent mastectomy or conservative surgery with axillary lymph node dissection of level I and II.

**Results:** In Group A mean patient age was 59.1 years (range 27–83 years). A mean of 1.68 SNs were identified (median 1.00, range 1–4). In three patients (6%) the SN was false-negative for metastasis. False-negative rate in this group was 17.64% with sensitivity of 82.3% and negative-predictive value of 86.95%.

In Group B mean patient age was 55.3 years (range 30–78 years). The mean number of SNs excised per case was 1.62 (median 1.00, range 1–5). Two cases (2%) were false-negative while false-negative rate was 4.54%. Sensitivity was 95.45% and negative-predictive value 95.34%.

**Conclusions:** The detection of SNs with combined technique has significantly better sensitivity and lower false-negative rate than marking of SN with blue dye alone and therefore should be preferred.

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#### Sentinel node and ductal carcinoma in situ of the breast

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**Background:** Axillary lymph node dissection in patients with ductal carcinoma in situ (DCIS) of the breast is not warranted because DCIS has no metastatic potential. However the risk of micro invasive carcinoma exists in large DCIS, which was not totally examined as in case of a mastectomy.

**Material and methods:** The aim of this series is to evaluate, feasibility of sentinel node procedure in DCIS.

We analysed retrospectively patients treated in 3 French cancer centres for pure DCIS or DCIS with micro invasive carcinoma. Surgical procedures were lumpectomy or mastectomy associated with an axillary sentinel node procedure alone.

**Results:** We included 32 patients suffering from pure DCIS (26/32, 81%) or micro invasive carcinoma (6/32, 19%). Mean age was 56 years (33–77). Seventeen tumours were non palpable (53%). 13 breast conservative procedures were performed and 19 mastectomies. Sentinel node procedure was performed using blue (10/32), technetium (8/32) or both (14/32). The detection rate was (29/32) 90% and no patient had axillary lymph node sampling.

**Conclusion:** Whatever the size, subtype, grade of the tumour or patient age no sentinel node was found positive. Sentinel Node in DCIS is an interesting procedure but not necessary for all patients. We need to focus on the subgroup with a risk of occult micro invasive carcinoma: a young patient, DCIS diagnosed by micro biopsy, high grade and large tumour size.

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#### Sentinel lymph node biopsy in male breast cancer patients

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**Background:** The concept of sentinel node biopsy has been validated for female breast cancer patients whereas, ALND remains the standard of care for male breast cancer patients with similar tumours. We evaluated the results of SLN biopsy in male breast cancer patients with clinically negative axillae.

**Methods:** This study included all male breast cancer patients who underwent SLN biopsy between February 1998 and October 2003. All patients had negative axillae on clinical examination. All patients underwent preoperative lymphoscintigraphy. SLN biopsy was performed using a combination of Patent blue V and <sup>99m</sup>Tc-radiolabelled colloidal albumin injected peritumourally.

**Results:** Nine patients, 26–79 years of age, were included in the study. Pre-operative lymphoscintigraphy identified SLNs in all patients. Intraoperatively, SLNs were successfully localised in all patients. The mean number of SLNs encountered was 2.4. Five patients had a positive SLN, 4 a negative SLN. Five patients (1 with a negative SLN, 4 with a positive SLN) had been elected preoperatively to undergo ALND regardless of findings on SLN biopsy. ALND confirmed the SLN to be negative in 1 patient (false-negative rate: 0%) and 3 of the 4 patients with positive SLN(s) had additional positive nodes in the axilla. SLN biopsy accurately predicted axillary lymph node status in these 5 patients.

**Conclusion:** These findings compare favourably with findings reported in the literature regarding SLN biopsy in female breast cancer patients. SLN biopsy accurately staged the axilla in male breast cancer patients and should be considered for axillary staging in male breast cancer patients with clinically negative axillae.

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#### Population-based sentinel lymph node biopsy (SLNB) in early invasive breast cancer (EIBC)

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SLNB has been proposed as a reliable method for staging of EIBC. The aim of SLNB is to identify women who are likely to be pNo, avoiding the side effects of AD. In the present study we analyse the impact of this procedure when systematically applied to all unselected women of a community-based Breast Cancer Unit (BCU). The BCU at the Ospedali Riuniti of Bergamo comprises a diagnostic and surgical service for a general population of approximately 500,000 people. A team of dedicated surgeons, specifically trained both in the diagnostic and surgical procedures of breast cancer treatment, is serving full-time in the BCU. In particular, all team members, before performing SLNB in routine clinical practice, were specifically trained in the radiocolloid sentinel node localisation (RCSNL) and sampling of SLN according to current recommendations.

All consecutive women with unifocal cT1–1 ( $\leq 3$  cm) cNo EIBC diagnosed at our BCU were considered for RCSNL and biopsy. Only 387 (71%) of all 542 patients met eligibility criteria for SLNB. Reasons for ineligibility included tumour size, palpable axillary nodes, plurifocality and/or multicentricity, and refusal to undergo the procedure. Successful SLNB was performed in 362 patients (94% of those eligible), but in 108 of these axillary dissection (AD) had to be performed anyway, mainly because of SLN-positivity. Therefore, a total of 286 patients (53% of all patients with EIBC) ultimately underwent AD. Systematic application of the SLNB procedure allowed sparing AD in 256 patients, corresponding to 71% of patients eligible for SLNB and to 47% of all consecutive patients. SLNB procedure was well tolerated and resulted in no major complication. A single patient developed axillary recurrence 18 months after surgery during adjuvant tamoxifen treatment.

In conclusion, our study shows that the systematic application of SLNB by highly qualified surgical teams can have a relevant impact in terms of reduction of unnecessary AD on a population scale, with consequent improvement in patients' quality of life. In absolute terms, in the EU this could result in approximately 100,000 unnecessary AD avoided each year. We believe that radiocolloid-guided SLNB, when appropriately applied in the context of a population-based service, can help sparing unnecessary AD and related costs and morbidity in many women presenting with EIBC, and that such a strategy should be more widely and appropriately adopted for all eligible patients with EIBC.

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#### The prevalence of axillary lymph node metastases in pure tubular carcinoma of the breast

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**Background and Objectives:** Pure tubular carcinoma (PTC, > 90% tubular component) is a rare, well-differentiated histologic subtype of invasive breast cancer. The existing data regarding the prevalence of lymph node metastases and necessity of lymph node staging and axillary treatment in PTC is controversial. We aimed to study the prevalence of lymph node metastases in PTC.

**Methods:** Altogether 26 patients with primary tumours classified as PTC underwent sentinel node biopsy (SNB) between March 2001 and August 2003 and were entered in the study. Histological re-evaluation of the tumours were performed by an experienced pathologist specialized in breast pathology. A level I/II axillary clearance (AC) was carried out in all patients with tumour positive sentinel nodes (SNs).

**Results:** Seven of twenty-six (27%) patients had SN metastases, five of them micrometastases only. In six cases SNs were the only tumour positive lymph nodes.

According to the pathological review by the expert pathologist, five patients, three with tumour positive SNs, did not have PTC. In addition, no histological specimens were available for re-evaluation in two patients.