

whether Sentinel Lymph Node Detection (SLND) could be achieved with use of radioisotopic method alone instead of the usual combined method.

Patients and Methods: This study was conducted between January and May 2011, we performed the SNLD on patients with T1, T2, N0 breast cancer. In Group 1 (108 patients until the reported death) the combined method was preferred whereas in Group 2 (102 patients after the reported death) radioisotopic method alone was preferred. We registered for all patients SNLD rate, number of Sentinel Lymph Node (SLN), duration of the surgery and number of SNLD in Group 2 which required the use of Patent Blue.

Results: We did not find any significant statistical difference between group 1 and group 2 for the SLN detection rate, respectively 98.1% and 100% ($p = 0.498$); the number of SLN, 3 and 2 ($p = 0.074$), and the duration of surgery, 54 and 51 minutes ($p = 0.392$). Patent blue was used on all patients in group 1 whereas only 39.2% patients in group 2 required blue patent to complete the detection, $p < 0.001$. Surgeons with young experience (< 5 years) are more ready to change their detection technique with 79.5% of SLND with isotopic method alone.

Conclusion: this is a preliminary study which demonstrates the feasibility of SLND by the radioisotopic method alone. The side effects of patent blue could be reduced.

Table Description of SLN biopsy in each group

	Group1	Group 2	p
SLND rate	98.10%	100.00%	0.498
Method of detection			<0.0001
Patent blue used	108 (100%)	45 (44.1%)	
Patent blue alone	14 (13%)	5 (4.9%)	
Isotope + patent blue	92 (85.2%)	39 (38.2%)	
Isotope + patent blue + lymphoscintigraphy	2 (1.9%)	1 (1%)	
Isotope alone	0	57 (55.9%)	
Number of SLN			0.2476
1	26 (24.5%)	29 (28.4%)	
2	26 (24.5%)	33 (32.4%)	
3	21 (19.8%)	20 (19.6%)	
>3	33 (31.1%)	20 (19.6%)	
Duration of surgery			0.392
average (minutes)	54	51	
Type of surgery			0.2232
Conservative treatment	98 (90.7%)	87 (85.3%)	
Radical treatment	10 (9.3%)	15 (14.7%)	

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Poster

Validation of Katz Nomogram and Chagpar Score for Predicting Likelihood of Having Four or More Positive Nodes in Patients with Sentinel Lymph Node-positive Breast Cancer Patients.

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Background: The presence of 4 or more metastatic axillary lymph nodes in breast cancer patients is considered an indication for post-mastectomy radiotherapy (PMRT) treatment to the axilla and chest wall. Immediate breast reconstruction is usually avoided if radiotherapy treatment is thought to be indicated.

Predicting the occurrence of extensive axillary nodal involvement (≥ 4 positive nodes) would aid in making decisions regarding post-mastectomy radiotherapy and immediate breast reconstruction.

Two models have been introduced for predicting the likelihood of having four or more positive nodes in SLNB positive patients. In this paper we validate their accuracy in a cohort of British breast cancer population.

Methods: 147 patients with 1-3 positive SLNs who underwent completion ALND were identified. Multiple pathological variables including the histological size of the SLNs metastases were analysed.

Two models by Katz and Chagpar were applied to our data set. The area under the receiver-operator characteristic (ROC) curve (AUC), 95% confidence intervals and false negative and positive rates were calculated for these models.

AUC values, 95% CI, clinical utility, false negative and positive rates

Nomograms	Katz nomogram	Chagpar score
AUC values	0.663	0.701
95% CI	0.555 to 0.770	0.594 to 0.807
Clinical utility for 5% cut off value	46/147 (31.3%)	12/147 (8%)
False -ive rate for $\leq 5\%$ Probability (P)	5/46 (11%)	0/12 (0%)
Clinical utility for $\geq 95\%$ cut off value	0%	11/147 (7.5%)
False +ive rate for $\geq 95\%$ Probability (P)	-	7/11 (63.6%)

Results: 30/147 (20.4%) patients who had ALND after positive SLNB had 4 or more metastatic axillary nodes.

Conclusion: We validated two models with variable success. Chagpar score outperformed Katz nomogram contrary to the previous validation studies. Further larger studies are required to validate these models before using them in clinical practice.

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Poster

Matched Pair Analysis Comparing Breast Conservation (BCT) with Immediate Techniques of Oncoplastic Surgery (iTOP): Morbidity and Cosmetic Assessment

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Introduction: Oncoplastic surgery has been shown to increase morbidity with unclear objective cosmetic outcome. Prospective trials are missing.

Materials and Methods: 30 patients with unilateral breast cancer operated with immediate techniques of oncoplastic surgery (iTOP) using reduction mammoplasties in the same breast were analyzed. Matched pairs operated with simple breast conserving therapy (BCT) up to a total number of 60 patients were found within a local database. Patients were called for a special follow up were history has been completed and a frontal picture for breast symmetry analyzes has been taken. Quality of life database were filled out.

Results: A total of 15 matched pairs have been analyzed at the time of this abstract. Age (iTOP: 53 ± 11 ; BCT: 55 ± 14) and tumor size (iTOP: size = 1.7 ± 0.8 cm, DCIS = 53%, pT1 = 60%, pT2 = 40%, invasive multifocal = 33%, DCIS multifocal = 13%; BCT: 2.1 ± 1 cm, DCIS = 53%, pT1 = 47%, pT2 = 40%, invasive multifocal = 13%, DCIS multifocal = 20%), were similar between the two groups. Compared with BCT, iTOP differed insignificantly in bleeding (0% vs. 7%), infection (7% vs. 13%), seroma puncture > 30 d (20% vs. 7%) and to more extend in wound necrosis (0% vs. 13%). Invasive surgery due to postoperative morbidity was similar in both groups (13% vs. 13%) and oncological based reoperation was reduced after iTOP when compared with BCT (2.OP R1 = 0% vs. 7%; 2.OP Mastectomy = 0% vs. 7%). Long term follow up VAS score did not differ between the two groups (iTOP: VAS = 2.3 ± 2.4 vs. BCT: VAS = 2.1 ± 2.9). Objective symmetry analyzes have been shown to be improved after iTOP (BSI = 3.8 ± 2.1) compared with BCT (BSI = 5.0 ± 2.1). Also quality of life seems to be improved in patients treated with iTOP. Generally patients are happier with their appearance (iTOP: 87% vs. BCT: 60%) and the cosmetic result (iTOP: grade = 1.5 ± 1.0 vs. BCT: grade = 2 ± 1.1) with similar breast sensitivity (iTOP: 53% vs. BCT: 47%).

Conclusion: This small study suggests that oncoplastic surgery improves objective cosmetic outcome, quality of life and reduce oncological based second surgery while morbidity may be slightly increased without causing an increased rate of second surgery.

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Lobular Histology Shows Tendency of Higher Risk of Involved Margins After First Breast-Conserving Surgery

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Background: Tumor positive surgical margin after breast-conserving treatment is used as a quality indicator in breast cancer healthcare. The aim of the study was to analyze the positive margin cases in our Breast Unit, risk factors for inadequate margin and the impact of positive margin on outcomes after breast-conserving therapy.

Materials and Methods: 107 women with invasive breast cancer (T1-2, N0-2, M0) diagnosed between 2005-2010, who underwent breast-conserving surgery (BCS) as first surgery, were retrospectively selected from the Pauls Stradins Clinical University Hospital Breast Unit Registry. A positive resection margin was defined as a microscopic invasive or in situ tumor at the cutting edge in permanent pathologic reports.

Results: The mean tumor size was 1.65 cm in the positive margin group and 1.68 cm in the other group ($p > 0.893$). 13 of 107 (12.1%) had positive margins at initial resection. Of these patients 4 (30.7%) had involved caudal margin, 2 (15.3%) cranial margin, 2 (15.3%) medial margin, 2 (15.3%) deep margin and 1 (7.6%) lateral margin, there were insufficient data available about the type of margin in 2 cases. 8 (61.5%) had an invasive carcinoma at the margins and in other cases carcinoma in situ was detected. 4 (30.7%) underwent additional surgery-mastectomy, to achieve negative margins. Postoperative radiation was performed for 12 (92.3%) patients. 7 (53.8%) received adjuvant chemotherapy. Patients with inadequate margins

had ER positive tumors in 76.5% vs. 47.3% in other group, PR positive tumors in 46.8% vs. 52.3% in other, HER 2/neu negative tumors in 76.9% vs. 56.2% in other. Patients with a positive margins at the initial resection showed higher lobular histology rate (15.3% vs. 6.4%), incidence of multiple ipsilateral tumors (23.1% vs. 15.4%), presens of intraductal component (76.9% vs. 65.1%), but these differences between two groups were not statistically significant. 73.1% of all patients were tested for the two common founder mutations in BRCA1(4153delA and 5382insC). There was 1 BRCA1(5382insC) mutation-positive patient in the other group and no mutation-positive patients in the positive margin group. Mean follow-up time was 19.9(11–37) months, and there were no local recurrences during the follow-up period in the tumor positive margin group.

Conclusion: The overall percentage of positive margins in the Pauls Stradins Clinical University Hospital Breast Unit is within the predefined targets. Lobular histology, multiple ipsilateral tumors and presens of intraductal component have shown a tendency of higher risk for inadequate margins of excision.

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Skin-sparing Mastectomy and Immediate Breast Reconstruction is a Safe Option in the Management of Early Stage Breast Cancer Patients

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Introduction: Skin sparing mastectomy (SSM) followed by immediate breast reconstruction (IBR) is a surgical approach that allows a mastectomy while preserving the natural envelope of the breast. SSM is used for prophylaxis for high-risk patients and BRCA carriers. It is also a surgical option for patients with large in situ lesions such as DCIS not accessible to breast-conservation or to invasive breast cancer associated with extensive in situ disease.

The present study will evaluate the oncological safety, outcome and post-operative complications.

Material and Method: Between January 2001 and December 2007, a total of 1500 patients with breast cancer were treated, out of them 132 were treated by SSM and IBR in our senology unit. We retrospectively reviewed patient and tumor characteristics, type of cancer surgery, reconstruction and immediate post-operative complications. We evaluated local and systemic recurrence rates, as well as survival with a median follow-up of 28 months (range 0–97).

Results: Mean age at diagnosis was 51 years (range, 28–77). Most of the patients (>60%) were treated for early-stage breast cancer either invasive ductal (50%) or invasive lobular (10%) that required a SSM. However 40% of them were diagnosed with extensive ductal carcinoma in situ (DCIS). More than 76% of patients were estrogen +/- progesterone receptors positive.

Oncologic surgery consisted in a SSM including sentinel lymph node biopsy or level I-II axillary lymph node dissection as needed. Periareolar or horizontal incisions were preferred. Neoadjuvant chemotherapy was administered in 12 patients (9%).

Immediate reconstruction was performed using exclusively breast implants in the majority of patients (102 patients, 77%) or in association with autogenous tissue by latissimus dorsi musculocutaneous flap in 16 patients (12%). Exclusive autogenous tissue reconstruction was performed in 14 patients (11%) including latissimus dorsi musculocutaneous flap in 8 patients (57%), and transverse rectus abdominis myocutaneous in 6 patients (43%). Adjuvant treatments consisted at least in hormonal therapy in most patients. However 25 patients (19%) received additional adjuvant chemotherapy. Radiation therapy was mandatory after surgery for 6 patients (5%). The AJCC/TNM pathologic stages were respectively 0 (n=42, 32%), I (n=63, 48%) and II (n=28, 21%). Five patients experienced recurrences, respectively local only in 2 (1.5%), local followed by systemic recurrence in 2 (1.5%) or systemic in 1 (0.8%).

Two patients died from their disease and 2 died from other causes.

Immediate post-operative complications were relatively low (7%). 7 patients required subsequent surgery with breast implants removal due to cutaneous necrosis in 4 of them, infection in 2 and hematoma evacuation in 1. 1 patient had a dehiscence wound and 1 had cutaneous necrosis who were treated with local dressing. 1 patient presented vascular complication related to a pedicle thrombosis that required an emergency re-anastomosis.

Conclusion: SSM associated with IBR is a safe surgical technique and does not increase the risk of local or systemic recurrence. It is associated with low morbidity in particular morbidity related to reconstructive surgery. This approach can be proposed to selected early stage breast cancer patients.

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Axillary Recurrence in Breast Cancer Patients Following Negative Sentinel Lymph Node Biopsy

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Background: Sentinel lymph node biopsy (SLNB) is an accepted standard of care with level 1 evidence supporting its safety and efficacy in patients with clinically node negative breast cancer. There is a finite false negative rate which is minimised by dual localisation techniques but rates of regional recurrence are low. Published rates of axillary recurrence range from 0–1.4% but a systematic review reported an average rate of 0.3% at a median follow-up of 34 months for this group of patients. We report on axillary recurrence amongst a cohort of SLNB negative patients followed up for almost 5 years.

Material and Methods: A retrospective analysis was undertaken to examine axillary recurrence amongst a group of 302 clinically node negative patients undergoing SLNB for symptomatic and screen detected invasive breast cancer between 1.1.2004 and 31.12.2006. Patients were treated in a single centre which did not routinely practice pre-operative axillary ultrasound at the time. Dual localisation techniques with blue dye (Patent Blue) and isotope (Technetium^{99m} nanocolloid) used for SLNB. All patients were classified as SLNB negative on H&E step-sections but included some patients with deposits of isolated tumour cells on either H&E or immunohistochemistry (≤ 0.2 mm). Exclusions included 5 patients with a previous history of breast cancer, 10 patients who had died without recurrence and 15 patients with DCIS (or microinvasion) only on final histology. This left 272 patients for analysis, the majority of whom received some form of systemic therapy. Neo-adjuvant patients with a negative SLNB pre-treatment were included as these did not proceed to axillary dissection (ALND) after chemotherapy. The median age was 61 years with a range of 24–88 years and median tumour size was 14 mm (range 1.5–40 mm). 80% of patients underwent breast conserving surgery and had good prognosis tumours (grade I & II; ER positive). Follow-up was measured from the time of surgery to the last documented contact with the patient.

Results: At a median follow-up of 59 months (range 10–89 months) there has been only one case of axillary recurrence (1/272). This occurred after 4 months and was the first site of treatment failure. Interestingly, only a single sentinel node was harvested and this case may have represented a false negative case (mean number of sentinel nodes = 2.62). This patient remains well at 46 months following ALND and chemo endocrine therapy for regional recurrence. 12 patients have developed distant disease without evidence of locoregional recurrence after a median time interval of 41 months (range 12–70 months). 1 patient had isolated chest wall recurrence 12 months after mastectomy and subsequently died with bone metastases at 28 months.

Conclusion: This low rate of axillary recurrence (0.37%) accords with other reports and compares favourably with ALND. Finite rates of false negativity associated with SLNB do not appear to translate into higher rates of axillary relapse with prolonged follow up. Incorporation of axillary ultrasound will de-select some patients for SLNB and further reduce any residual axillary tumour burden.

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Poster

Intraoperative Radiological Evaluation of Margins in Breast Conserving Surgery: Analysis of 140 Cases

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Background: In breast conserving surgery (BCS), the surgeon's primary objective is to obtain negative histological margins, which are known to be a major prognostic factor for tumour recurrence. Intraoperative evaluation of margins status (MS) relies on histological examination (HE). However, HE can be time consuming and may need a specific organisation (pathologist in the operating room, transport of the lumpectomy to the pathology unit).

In order to propose an alternative to intraoperative HE, we have lead a prospective study and analyzed the concordance between the MS obtained with HE and the MS obtained using the FAXITRON™ (FX), a dedicated X-ray imaging device set up in the operating room.

Patients and Methods: One hundred and forty patients (mean age = 63) treated with BCS were included. The treated lesions were ductal carcinoma in situ DCIS (11%), invasive ductal carcinomas IDC (60%), invasive lobular carcinomas ILC (16%) and a combination of histological subtypes (13%). The breast lesions were palpable in 43% of the cases. All the lesions were visible on the preoperative mammograms.