

Psychogenic reaction	Incidence		
	Group I (n = 25)	Group II (n = 30)	Group III (n = 20)
Situational anxiety	53.5±6.3	54.3±6.7	47.2±5.8*
Personal anxiety	54.0±5.0	56.2±9.5	47.5±10.8*
Hostility	52.1±23.2	53.8±13.5	45.2±19.8*
Autoaggression	73.8±17	73.2±16.1	63.5±15.3*

*p < 0.05 versus groups I and II.

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POSTER

Complications of Immediate Breast Reconstruction After Skin Sparing Mastectomy Do Not Cause Delay of Onset of Adjuvant Chemo- or Radiation Therapy

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Background: The incidence of all types of immediate breast reconstruction (IBR) after a breast cancer operation is rising, offering patients enormous advantages in terms of quality of life. This study only concerns IBR after skin-sparing mastectomy (SSM). Safety of this procedure is a critical issue and can be measured in terms of local recurrence. Published studies show no rise though compared to the standard mastectomy. Another consequence could be the higher risk for complications and therefore the possible delay in the start of any adjuvant therapy. The aim of this study was to evaluate the incidence of complications after SSM with IBR in patients treated for invasive breast cancer or ductal carcinoma in situ (DCIS), whom received adjuvant chemo- or radiation therapy in a single dedicated institute and to assess whether they affect the interval between surgery and adjuvant therapy.

Methods: Data of all SSM with IBR patients were both prospectively and retrospectively collected in a database between 2004 and 2011. The database consists of 251 SSM with IBR. Only patients treated with adjuvant chemotherapy and/or radiation therapy were included (n = 60); 95% (n = 57) with invasive carcinoma and 5% (n = 3) with DCIS. Further patients characteristics are collected in Table 1. Almost all SSM and IBR were performed by a dedicated team of oncologic and plastic surgeons. Descriptive statistics and unpaired t-tests were conducted.

Table 1: Patient and tumour characteristics of 60 patients who received SSM with IBR and adjuvant therapy

	Without complications	With complications	p-value
Patients, n	44	16	
Mean age, y (range)	48.4 (25–66)	48.4 (29–67)	0.991
BMI (kg/m ²)	23.9 (16–30)	24.0 (19–33)	0.735
Smoking (%)	27.3	12.5	
Mean tumour size, mm (range)	27.2 (0–200)	25.2 (0–70)	
Primary tumour (%)			
T0	3 (7)	1 (6.3)	
Tis	3 (7)	0	
T1	17 (39.5)	6 (37.5)	
T2	15 (34.9)	7 (43.8)	
T3	4 (9.3)	2 (12.5)	
T4	1 (2.3)	0	
Nodal status			
N–	24 (55.8)	8 (50)	
N+	19 (44.2)	8 (50)	
Neo-adjuvant chemotherapy	9	1	
Number of breast reconstructions, n	54	22	
Unilateral	32	10	
Bilateral	11	6	
Complications, n (%)			
Flap necrosis		4 (25)	
Wound infection		10 (62.5)	
Haemorrhage		6 (37.5)	

Results: Some form of flap reconstruction was performed in 19 breast of the uncomplicated group and in 7 breast of the group with complications. A tissue expander or direct prosthesis was placed in 35 and 15 breasts, respectively. The number of patients with complications was 16 (26.7%). In 9 patients, the complications of surgery occurred before the start of adjuvant therapy; in 7 during adjuvant therapy. In none of these patients, adjuvant therapy was paused due to complications. The mean number of days between the IBR and the start of adjuvant chemo- or radiation therapy was 28.6 in the group with complications. For the uncomplicated group, this period was 32.6 days. However, this is not significant (p = 0.46).

Conclusions: Complications associated with SSM with IBR do not delay the start of indicated adjuvant chemo- or radiation therapy.

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POSTER

Immediate Breast Reconstruction (IBR) After Skin-sparing Mastectomy (SSM) Does Not Increase the Risk of Loco Regional Recurrence or Distant Metastases

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Background: An immediate breast reconstruction (IBR) after skin-sparing mastectomy (SSM) offers breast cancer patients enormous advantages in terms of quality of life. Safety could be measured as the amount of retained breast tissue in the skin flap, but this is impossible to measure, though definitely present. The clinical consequence of retained breast tissue is loco-regional recurrence (LRR) and distant metastases. Most published studies concerning this issue show low patient numbers and/or a short follow-up period. An accepted recurrence rate is 0.5–1% per year. The aim of this study was to evaluate the incidence of local, regional and distant recurrence after SSM with IBR in patients for invasive breast cancer (IBC), DCIS or prophylactic indication in a single dedicated institute.

Methods: Data of all SSM with IBR patients were both pro- and retrospectively collected in a database. 182 patients underwent a total of 249 SSM with IBR for invasive breast cancer (n = 112), DCIS (n = 42) or prophylactic risk reduction (n = 95) between 2004 and 2011. Patient and tumour characteristics concerning DCIS and IBC are collected in Table 1. The median age of the patient undergoing a SSM with IBR for prophylactic indication was 45.3. Only in two of these patients invasive cancer was detected in definitive pathology.

Table 1

	DCIS	IBC	Recurrence
Median age, y (range)	50.8 (32–69)	48.69 (24–69)	42 (36–48)
Tumour size, mm (range)	40 (4.5–120)	16.5 (2–200)	23 (13–80)
Primary tumour, N (%)			
T0	3 (7.9)	9 (8.0)	0
Tis	35 (92.1)	2 (1.8)	0
T1	0	58 (51.8)	2 (66.7)
T2	0	34 (30.4)	1 (33.3)
T3	0	8 (7.1)	0
T4	0	1 (0.9)	0
Grade			
1	6	19	0
2	8	39	3
3	17	42	0
Unknown	11	13	0
Location			
Multicentric/focal	34	105	3
Unifocal	4	7	0
Unknown	4	0	0
Nodal status			
Negative	40	64	2
ITC+	2	8	0
Positive	0	40	1
Estrogen receptor status			
+		80	3
–		32	0
Therapy			
Neo-adj. chemotherapy		12	
Adjuvant chemotherapy		59	
Hormonal therapy		52	
Radiation therapy	4	25	

All SSM and IBR were performed by dedicated oncologic and plastic surgeons. A total of 263 reconstruction procedures were performed including deep inferior epigastric perforators (DIEP n = 85), transverse rectus abdominis muscle (TRAM n = 18), superior gluteal artery perforator (SGAP n = 1), tissue expander (TE n = 119), immediate prosthesis (IP n = 32), latissimus dorsi (LD n = 7), transverse myocutaneous gracilis (TMG n = 1) and combinations of the previously mentioned.

Results: The mean follow-up was 28 (1–82) months. Local recurrence (LR) occurred in 3 patients (1.9%, non-significant), and was detected after a period of 5, 16 and 21 months. All of these patients were initially treated

for IBC. The last patient also developed distant metastases concurrently. One patient developed distant metastasis without locoregional recurrence. Of the patients with LR, one patient was treated with excision of DCIS, one patient was treated with excision combined with chemo-, hormonal, and radiation therapy. The two patients with distant metastases were treated only with hormonal therapy.

Conclusions: SSM with IBR carries no increased risk for loco regional or distant recurrence compared to a non-skin sparing mastectomy in our single institute.

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POSTER

Ultrasonography by Breast Surgeons in the Operating Theatre – Evaluation of the Initial Learning Phase

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Background: Many studies have proven that intra-operative use of ultrasonography (US) during breast-conserving surgery is the most accurate method to achieve high rates of tumour-free margins, with small volumes excised. US, therefore, has become an increasingly popular modality to guide the excision of malignant breast tumours. This study was performed to assess the accuracy of a surgeon's learning in US-guided excision of palpable breast cancer. Difficulties and potential pitfalls were analysed.

Methods: A total of 30 female patients undergoing breast-conserving surgery for palpable T1-T2 invasive breast cancer were recruited. The US assisted three individual breast surgeons to target and excise the tumour with continuous intra-operative imaging. The main objective was to obtain adequate resection margins with optimal resection volumes. The specimen volume was measured, and the tumour diameter and histological margin status were registered from the pathology reports. An optimal resection volume was defined as the spherical tumour volume with an added 1.0-cm margin. The specimen volume was compared to the optimal resection volume. The resulting calculated resection ratio (CRR) indicated the excess tissue resection.

Results: All tumours were correctly identified during the surgery, and 29 of 30 tumours (96.7%) were removed with adequately negative resection margins; focally positive margins were found in one tumour (3.3%). Median CRR was 1.0 (range, 0.4–4.4); for all breast surgeons, CRR improved during the learning period. By the 8th procedure, all surgeons showed proficiency in performing intra-operative breast-US. The main difficulties were recognising ill-defined tumour margins, and relating the US-image to the tumour position in the breast.

Conclusions: Surgeons can easily learn the skills to perform intra-operative US for the excision of palpable breast cancer. Intra-operative surgeon-performed US is non-invasive, simple, safe and effective in obtaining adequate resection margins, as it permits a real-time localisation of the breast carcinoma and the subsequent planning of surgical margins. The resection volumes markedly improved during the learning period into optimal volume resection, thereby presumably resulting in improved cosmetic outcome. In a prospective randomised controlled clinical trial the surgical accuracy of intra-operative US guidance is compared with the traditional palpation-guided surgery for palpable breast cancer.

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POSTER

Comparison of Level 3 Nodal Yield in Carcinoma Breast Patients Using the Subpectoral and Interpectoral Approach of Axillary Dissection

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Background: Level 3 Axillary nodal clearance during modified Radical Mastectomy in Carcinoma Breast is done conventionally by retracting the pectoralis minor muscle medially and exposing the Axillary vein. However, we have been performing the level 3 clearance by retracting the Pectoralis minor muscle laterally and entering the interpectoral groove.

The aim of the study was to compare the nodal yield of level 3 axillary nodes using the conventional Subpectoral route and the Interpectoral route.

Materials and Methods: A total of 50 females with Carcinoma Breast were enrolled in the study and were randomly allocated to the Subpectoral and

Interpectoral Axillary clearance group with 25 patients in each. Statistical analysis was done.

Results: The nodal yield was 20% higher in the interpectoral group as compared to the Subpectoral group which was statistically significant. The number of complications was lower in the subpectoral group. However, three patients required prolonged Axillary drainage for more than 3 days.

Conclusion: Level 3 Axillary Clearance using Interpectoral approach gives a better nodal yield and less complications as compared to the Subpectoral approach in Carcinoma breast patients.

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POSTER

Evaluation of Clinical Utility of Sentinel Lymph Node (SLN) Examination by One-step Nucleic Acid Amplification (OSNA) Assay in Breast Cancer

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Background: Sentinel lymph node biopsy (SLNB) in Breast cancer has been commonly used in place of axillary lymph node dissection (ALND) for local control and nodal staging. Recently completed large scale clinical studies have suggested that ALND doesn't improve the prognosis of breast cancer patients for SLN positives cases significantly and can even increase patient morbidity. Therefore the significance of ALND in SLN positive patients will be called into question in the future and the value for nodal staging of SLNB will increase. The OSNA assay is utilized for lymph node examination by measuring the amount of CK19mRNA in lymph nodes using molecular techniques. The assay is expected to improve the accuracy and standardization of LN examination with the advantage of being able to assess a large portion of a lymph node. The OSNA assay has been in clinical use in Japan and EU. We conducted a multi central clinical study with 11 institutes in Japan to investigate the relationship between the results in SLN and non-SLN status as well as to identify the clinical and pathologic factors that show a correlation with non-SLN status.

Material and Methods: 417 clinically node negative breast cancer patients scheduled for SLNB were enrolled. After cutting off a central 1 mm thickness slice for pathological examinations from each SLN, the residual portion was applied to the OSNA assay. For patients who received ALND, non-SLN status was examined by routine pathological method at each site.

Results: Ninety-four of 417 (22.5%) patients were judged as SLN positive by the OSNA assay. 86 of these patients received ALND and 29 (33.7%) of these had metastases in the non-SLN. Among those who received ALND, 50 patients had an OSNA ++ result and 34 patients had an OSNA + result, with metastases in non-SLN in 22 and 6 patients respectively. Positive predictive value of OSNA ++ for non-SLN metastasis (22/50 = 44.0%) was significantly higher than that of OSNA + (6/34 = 17.6%) ($p=0.01$). A strong association with non-SLN involvement was found in cT (cT1 vs cT2 $p=0.0104$), pT (pT1 vs pT2/T3 $p=0.0389$) and Grade (Grade 1 vs Grade 2/3 $p=0.0066$).

Conclusions: SLN evaluation by OSNA can reflect non-SLN status appropriately. The semi-quantitative result of OSNA(++/+) has potential to indicate non-SLN status by combination with tumour size and tumour grade.

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POSTER

OSNA is Suitable for Intraoperative Analysis of Sentinel Lymph Node Metastasis in Breast Cancer

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Background: Sentinel node (SN) biopsy is the standard procedure in breast cancer patients who are clinically node-negative. However, our hospital has no pathologist, so we have not been able to perform intraoperative analysis of SNs. The one-step nucleic acid amplification (OSNA) technique is simple to perform and allows straightforward diagnosis of SN metastasis by quantitative evaluation of cytokeratin 19 m-RNA. The analysis results are available in as little as 30 minutes. This technique enables us to now perform SN analysis during the operation. In this study,