

For all the patients, we performed an X-ray of the lumpectomy specimen with the FX and measured the radiological margins surrounding the cancer. The lumpectomy was then sent for intraoperative HE and we made complementary resections when required by the pathologist.

For each patient, we compared the size of the surgical margins evaluated by FX and by HE.

**Results:** The FX provided an x-ray image of the lumpectomy in 90 seconds. It allowed an evaluation of the margins status in 96% of the cases.

The pathologist asked for complementary resections in 17% of the cases from which 65% were already performed after the FX procedure. MS evaluation with the FX was corroborated by the intraoperative HE in 94% of the cases.

Furthermore, when the margins, measured using the FX, were equal or superior to 5 millimetres, the margins measured by HE were negative in 100% of IDC cases and in 90% of the DCIS and ILC cases.

**Conclusion:** The evaluation of MS with the FX allows the achievement of negative margins in 94% of the cases when compared to HE. The accuracy of the FX depends on the histological subtype of the cancer. A better selection of the patients might enhance the accuracy of the FX procedure.

Moreover, the procedure lasts only 90 seconds which allows important time-saving. If our data are confirmed the FX procedure might be able to replace intraoperative HE in some specific indications.

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Poster

### Analysis of Immediate Breast Reconstruction with the Use of Titanized Polypropylene Mesh (TiLOOP® Bra)

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**Background:** Breast cancer surgery has taken a turn over the past decades. New surgical strategies have generated advanced methods concerning oncologic safety combined with improved cosmetic results. A number of publications outlined that the application of tissue-supporting materials result in improved cosmetic outcome.

Even the AGO guidelines have added the application of tissue-supporting extraneous materials to the section of reconstructive breast surgery in the year 2011.

**Material and Methods:** The authors prospectively studied the feasibility, rate of complication and cosmetic outcome of 87 performed combined skin-sparing mastectomy and immediate prosthetic breast reconstruction with the usage of TiLoopBra mesh.

Data such as body mass index, nicotine abuses, diabetes mellitus and others were taken into account. Also rate of postoperative infection, hematoma, seroma, time of drainage and antibiotic therapy were assessed.

**Results:** 87 patients with a median age of 45.6 years (26 to 76) were evaluated. 82.8% of the patient collective had a oncologic operative indication.

The average prophylactic antibiotic therapy was applied 3.6 days and median drainage duration were 4.7 days.

Mastectomy weight averaged 307.8g (181–820g); implant volumes ranged between 125 and 680 cm<sup>3</sup> (median 327 cm<sup>3</sup>).

We recorded an infection rate of 10.3% (only light superficial skin infections), postoperative hematoma rate of 17.2% and 9.2% of postoperative seroma.

**Conclusions:** This analysis showed that the application of titanized polypropylene mesh in immediate reconstructive surgery results in an excellent cosmetic result with greater flexibility in forming the former breast shape. It is a safe procedure with a low rate of complications.

Additional follow-up data are now required to assess further data on the cosmetic outcome, patients satisfaction and oncologic safety.

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Poster

### First Experiences with the Implementation of a Two Component Polypropylen-vicryl Mesh (SERAGYN® BR) as Tissue-supporting Extraneous Material in Plastic Reconstructive Surgery

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**Background:** Because of excellent experiences, the application of acellular dermis and other tissue-supporting meshes in plastic reconstructive breast surgery is approved by guidelines of the gynecologic oncologic committee (AGO) in Germany.

Since March 2011 a partially absorbable two component mesh is available. The basic fiber consists of an absorbable PGA-CL and after resorption 6 singular, parallel layed polypropylene filaments remain permanently. The material components are suitable for plastic reconstructive breast surgery.

**Material and Methods:** From March 2011 to September 2011 we performed 12 subcutaneous mastectomies with immediate reconstruction via implant placement and application of the SERAGYN two component mesh (n = 14) in breast cancer patients (median age = 49 years).

**Results:** Mastectomy weight averaged 329g (120–580g); implant volumes ranged between 125 and 515 cm<sup>3</sup> (median 335 cm<sup>3</sup>). Implant location was mainly sub pectoral, in 3 cases the implant was covered by mesh only.

We recorded no mesh arrosion, no wound infection and no unscheduled second operations.

The mean time of drainage summed up to 8 days, in one patient a maximum of 11 days and still a puncture of seroma after drainage removal was necessary.

**Conclusions:** Because of the combination of the different materials and special texture of the large-pored, partially absorbing meshes a stability of shape and softness of the reconstruction can be achieved.

Convincing also are low rates of complications and good cosmetic results.

However the still small number of cases and the short follow up limits the validity of this conclusion. Currently a prospective, multicentre analysis will merge the experiences of the different study centers.

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Poster

### Skin Sparing Mastectomy: Evaluation of Oncological Safety in 82 Cases Treated in Brazilian National Cancer Institute

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**Background:** The surgical treatment of breast cancer has evolved from radical mastectomy to breast conservative therapy. Today we have another therapeutic dilemma: how to manage the Skin Sparing Mastectomy (SSM) offering patients better aesthetic results with oncologic safety.

**Methods:** We analyzed data on 82 consecutive skin sparing mastectomies (SSM) with immediate reconstruction with tissue expander, prosthesis or autologous tissue performed in a Brazilian National Cancer Institute (INCA) in 2001–2008. SKIN-sparing mastectomy (SSM) were performed only for breast cancer treatment (n=82) and no one case was included with prophylaxis, risk reduction or contralateral breast symmetrization.

**Results:** Mean patients age was 46.8 years (range 19 to 67 years) and mean follow up time was 49.9 months (range 20 to 106 months – SD 18.6). 36 patients were stage 0 (43.9%), 21 stage I (25.6%), 24 stage II A and B (29.3%) and in 1 patient stage 3 (1.2%). On pathologic review, 22 patients (26.82%) had in situ ductal carcinoma (DCIS), 51 invasive ductal carcinoma (IDC) (62.19%) and 7 (8.53%) invasive lobular carcinoma (ILC) and special type of carcinomas in two cases (2.43%). Seventy (85.4%) of patients presented with sentinel node negative and twelve (14.6%) presented with positive axillary nodes. Adjuvant treatment was delivered based on status on the estrogen and progesterone receptor, tumor diameter and node status. Patients with 4 or more axillary positive lymph node received adjuvant radiotherapy. There were 3 local relapses and 2 deaths among the group. The disease free survival (DFS) was 101.7 months (SD 2.4) and overall Survival (OS) 98.5 months (SD 4.12). The local relapses and deaths occurred among the group of invasive carcinoma, and no patient with positive lymph node had local relapse or death, probably reflecting more targeting adjuvant systemic therapy.

**Conclusion:** These data demonstrates that SSM is oncologically safe and can be performed with all types of breast reconstruction.

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Poster

### Sentinel Node Biopsy Analysis Using Intraoperative One-Step Nucleic-Acid Amplification (OSNA): Are We Really Saving Patients a Second Operation?

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Sentinel Node Biopsy (SNB) has become standard practice for staging the axilla in clinically node negative breast cancer patients. SNB positive patients undergo a delayed axillary dissection after routine histological assessment of the sentinel node. OSNA is a novel molecular method for detecting lymph node involvement, using a standardised automated machine, requiring minimal pathologist input.

However, it has been argued that the benefit from a single-step procedure is negated somewhat by those patients who require further breast surgery – margin re-excision or completion mastectomy. The aim of this study was

to assess the benefit of routine intra-operative analysis using OSNA with compared to routine histological analysis.

**Methods:** Data from 390 consecutive patients undergoing intra-operative OSNA analysis of sentinel nodes from May 2010 to November 2011 in a single institution were collected prospectively. All patients had a normal pre-operative axillary ultrasound. All patients underwent either mastectomy (Mx), wide local excision (WLE) or wire-guided WLE (WG-WLE) for invasive breast cancer or multifocal DCIS.

Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. SNBs identified were sent for intra-operative analysis. Patients positive for metastasis were subject to axillary node clearance (ANC) at the same setting. The number of patients requiring further breast surgery (margins or mastectomy) was recorded.

**Results:** 390 patients underwent SNB. 2 patients were excluded, as all their node specimens were too small for OSNA analysis. 105, 162 and 121 patients underwent mastectomy, WLE and WG-WLE, respectively. 137 patients required an immediate ANC (OSNA negative, but clinically involved: 2, OSNA micrometastasis: 59, OSNA macrometastasis: 76). A total of 56 (14%) patients required re-excision of margins after surgery (Mx: 0, WLE 37, WG-WLE: 19). Only 29 (21%) patients who underwent ANC required further re-excision surgery (Mx: 0, WLE: 22, WG-WLE: 7). Thus 79% of those undergoing immediate ANC were spared a second procedure by having intra-operative sentinel node analysis.

Number of operations and re-excisions by OSNA result and need for ANC

OSNA	ANC	Pts	Mx	Post MX re- excision	%	WLE	Post WLE re- excision	%	WG- WLE	Post WG- WLE re- excision	%
Neg	Yes	2	0	0	0	2	0	0	0	0	0
Neg	No	229	60	0	0	88	15	17	81	9	11
Micro	Yes	59	15	0	0	30	13	43	14	4	29
Micro	No	23	7	0	0	6	0	0	10	3	30
Macro	Yes	75	23	0	0	36	9	25	16	3	19
Totals		388	105	0	0	162	37	23	121	19	16

Pts, patients.

**Discussion/Conclusions:** This is one of the largest single-centre series of intra-operative analysis of sentinel nodes using OSNA. The introduction of OSNA has removed the need for ANC at a later stage. Despite the need for re-excision breast surgery in cases of positive margins, intra-operative analysis drastically reduces the number of patients who will require further surgery, by 79%. This is better for both the patient and the health economy, by offering a single operation, reducing waiting times, and expediting the start of adjuvant therapy.

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Poster

#### Detection Rates of Micrometastasis in Sentinel Nodes: a Comparison of Intraoperative One-Step Nucleic-Acid Amplification (OSNA) Versus Routine Histopathology

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**Background:** Sentinel node biopsy (SNB) is standard practice for staging the axilla in clinically node negative breast cancer patients. SNB-positive patients undergo axillary dissection at a later date. However, intra-operative analysis has made this process a single-step procedure, thus avoiding delay in surgery. OSNA is a novel molecular method for detecting SNB metastasis, requiring minimal pathologist input and an automated machine operation.

**Aim:** To determine the incidence of OSNA-detected lymph node positivity, differentiating between micro- and macro-metastasis, and comparing it to routine histopathological analysis.

**Method:** Sentinel nodes (SNBs) from 390 consecutive patients (602 SNBs) undergoing intra-operative OSNA analysis from May 2010 to November 2011 were compared to the results from 100 patients undergoing routine histological analysis of SNBs in the preceding period. All patients had clinically and radiologically normal axillary nodes. Patients had either invasive cancer or widespread DCIS. Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. Positive SNBs underwent either an immediate (OSNA) or delayed (routine pathology) axillary dissection.

**Results:** OSNA: 2/360 patients were excluded, as their nodes were too small for analysis. 231 (60%) patients had normal lymph nodes, 82 (21%) had micrometastases, and 75 (19%) macrometastases.

**Routine histology:** 19/100 (19%) patients had macrometastases rates and 2/100 (2%) had micrometastases.

**Conclusions:** This is one of the largest single-centre series of intra-operative analysis of axillary nodes using OSNA. The technique has been fully validated when compared to multiple section, immunohistochemical histopathology in other studies. We found that OSNA processing is consistent and reliable with only a minimal number of lymph nodes unsuitable for processing. Detection of micrometastasis is significantly higher in the OSNA group compared to routine histopathology. Conversely, the incidence of macrometastasis was the same with both methods. The need for further axillary surgery for micrometastasis is now controversial, following recent published studies. However, such information does influence prognosis and the need for systemic therapy.

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#### Sentinel Node Biopsy Analysis Using Intraoperative One-Step Nucleic-Acid Amplification (OSNA): at What Time Cost?

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**Background:** Sentinel Node Biopsy (SNB) has become standard practice for staging the axilla in clinically node negative breast cancer patients. SNB positive patients undergo a delayed axillary dissection after routine histological assessment of the sentinel node. Intra-operative analysis has made a single-step procedure possible. However, the time delay and possible interruption to the operating list have not been properly studied. OSNA is a novel molecular method for detecting lymph node metastasis, using an automated machine and requiring minimal pathologist input.

**Aim:** To determine the time taken to obtain the OSNA result (node status), and to see whether it had a significant impact on the total time of surgery for those with negative nodes (i.e. no axillary dissection required).

**Method:** A prospective study of 232 patients with clinically and radiologically negative axillary nodes undergoing breast surgery and intra-operative OSNA analysis of sentinel nodes between May 2010 to November 2011.

Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. Lymph nodes were sent for intra-operative analysis, while the breast operation was performed. Patients with positive nodes underwent immediate axillary dissection and were excluded from the study.

The duration of surgery to the axilla and the breast, in addition to the time needed to obtain an OSNA result were recorded prospectively.

**Results:** 63 patients underwent mastectomy, 90 wide-local excision (WLE) and 79 wire-guided WLE (WG-WLE). The median time to remove the SNB was 15min. The median times for the breast operation to be completed were 45min. Median times for mastectomy, WLE and WG-WLE were 59min, 42min and 40min. The median delay for obtaining the OSNA result was 42min. The median waiting time between finishing the breast procedure and obtaining the OSNA result was 8min. [Mastectomy 5min, WLE 8min and WG-WLE 10min]. In 28% of patients the OSNA result was made available prior to the end of the breast operation [Mastectomy 43%, WLE 29% and WG-WLE 15%]. 77 patients required ANC.

	Median times (in minutes)		
	Breast procedure	SNB results	Waiting
Mx	59	45	5
WLE	42	43	8
WG-WLE	40	41	10
Overall	45	42	8

**Conclusion:** OSNA is a quick and reliable intra-operative method for analyzing SNB. On average, operations for those with negative nodes were only delayed by 8 minutes, which is not excessive. For node positive patients, it allows a single operation, thus avoiding the psychological and financial implications of further surgery.