Conclusions: Our study suggests that TOR treatment does not increase intracellular concentrations of triglyceride in the presence of oleic acid, although TAM treatment increases the concentrations of triglyceride. Therefore, TOR may be a safer treatment in patients with unstable triglyceride levels or a history of hypertriglyceridemia.

Friday, 18 April 2008 12:30–14:30

POSTER SESSION

Surgical management (including reconstructive surgery)

512 Poster

Perspective on breast and axilla preservation after introduction of targeted intraoperative radiotherapy and sentinel node biopsy for the treatment of patients with early breast carcinoma

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Background: The purpose of the study is: 1) to analyse early results of the breast conserving treatment (BCT) in patients with breast carcinoma using both intraoperative radiotherpy (IORT) and sentinel node biopsy (SNB) simultaneously; and 2) to estimate breast and axillary lymph nodes preservation with this approach.

Material and Methods: The treatment protocol was approved by Ethical Committee. The BCT using combined SNB, wide local excision (WLE) and IORT was performed in 77 patients who signed the informed consent. Patients with primary tumour $\leqslant$2 cm and clinically negative axillary lymph nodes were eligible. The SNB was done using isotope-dye technique with preoperative lymphoscintigraphy. The INTRABEAM® PRS 500 system (Carl Zeiss, Oberkochen, G) was used for irradiation of the tumour bed with the dose of 20 Gy (boost; energy 18 keV). After completion of the adjuvant treatment, whole breast external beam irradiation was performed with a total dose of 50 Gy, omitting the tumour bed. Objective computerized aesthetic effect assessment was done using BCCT.core® software (University of Porto, PT). Follow-up time ranged from 1 to 24 months (mean 11 months).

Results: Minor early postoperative complications (reddening of the skin wound 2; seroma 3) did not prolong hospitalization. In 10 patients (13%), surgical specimen pathology revealed positive margin. Re-excision of the margins was performed in 8 patients. In one of these patients mastectomy was necessary because neoplastic cells in re-excison specimen. In 16 (21%) patients (selective) lymphadenectomy was performed following positive SNB. In one patient both positive SNB and positive margins necessitated mastectomy; whereas in another patient after selective lymphadenectomy, mastectomy was necessary because of margins' infiltration by comedo type carcinoma. Altogether breast and axillary lymph node preservation was possible in 59 (77%) of patients. One patient has fibrosis of the treated breast quadrant. In patients after breast conservation who reached 1 year follow-up, the BCCT.core® general aesthetic score was excellent in 50%, good in 42%, and fair in 8% of patients. There was neither poor aesthetic outcome, nor local recurrence.

Conclusions: The combination of SNB, WLE and IORT is a safe surgical procedure leading both to breast and axillary lymph nodes preservation with improved patients' satisfaction by excellent or good aesthetic effect and shortening the time of treatment in majority of patients.

513 Poster

Multidisciplinary quality management of breast cancer surgery

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Surgical therapy of breast cancer (BC) as a one-step-procedure is important for oncological results, patients' satisfaction and cost effectiveness of breast units. Therefore, the number of surgical procedures to reach complete excision of the lesion means an indicator of quality.

Aim: To investigate the impact of multidisciplinary planning (MDP) and multidisciplinary perioperative quality management (MDQM) on the rate of secondary surgery in BC patients.

Methods: From January 2003 to December 2007 645 patients with primary BC were treated in our Breast Unit. During the whole period under review minimal microscopically tumour-free margins to the resection lines (RLs) laid down in the multidisciplinary therapy protocol were 5 mm for invasive cancer (IC) and 10 mm for pure DCIS concerning all margins except to the always subcutaneous located ventral RL and the dorsal RL consisting of the pectoralis fascia. In case of margins involved by invasive cancer or DCIS re-excision or mastectomy was advised. In October 2004 additionally first MDP of surgery, and secondly MDQM were introduced. MDP is done by a nominated team of surgeons, radiologists and pathologists. To reach the targeted margins at final histopathology the size of macroscopic margins of segmental resections around the mass or microcalcification area in imaging is planned depending on the nuclear grade of the DCIS component: 10 mm macroscopic margins are planned for IC with or without high grade DCIS as for pure high grade DCIS. 20 mm resection margins are planned for intermediate and low grade DCIS with or without IC. MDQM is done intraoperatively by macroscopic measuring of margins by the pathologist or in case of microcalcifications by the radiologist. If macroscopically planned margins could not be reached a re-resection within the same operation is done.

We compared the rate of patients with more than one operation needed to reach the definite surgical therapy as the rate of breast conserving therapy (BCT) for two periods before and after implementing MDP and MDQM (2003–2004 171 patients vs. 2005–2007 474 patients with similar distribution of tumour sizes.

Results: The rate of patients with two (or more) operations needed to get the targeted minimal margins was 35.1% before, and 19.0% after implementing MDP and MDQM, whereas the BCT rate did not differ significantly (54.1% vs. 57.6%).

Conclusions: By MDP and MDQM the multidisciplinary breast team can spare secondary surgery without compromising tumour-free margins or the rate of BCT in patients with primary BC.

514 Poster

Breast cancer – analysis of tumor size at diagnosis in 3,050 consecutive surgical patients

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Background: Breast cancer is the third most frequent cancer in the world and the most common malignancy of female. In the past the majority of patients was diagnosed when the disease was in an advanced stage. Analysing different series of patients affected by breast cancer reported in literature appears that in these last recent years there is worldwide an increased number of patients with stage I disease, suggesting an increase in the early detection of breast cancer as a result of improvement of the diagnostic techniques and of the extensive screening programs.

Material and Methods: The medical records and the pathological reports of 3,050 consecutive patients undergone breast resection between 1992 and 2005, examined at the Anatomy-Pathologic Service of the University of Insubria in Varese, were reviewed and registered in a computerized data-base.

The aim was to compare and analyze pathologic data.

For each patient enrolled were registered: gender, age at diagnosis, treatment, type of surgical resection, sentinel lymphnode biopsy (LNS) (with the total number of lymphnodes for each axillary level), histological type, pathological staging, grading, tumoral size and hormonal receptor status.

Results: The analysis of tumour size demonstrated a progressive decrease since 1992 to 2005.

During the study period, the tumors lower than 1 cm increased from 13.4% to 15.4%; the tumors diagnosed at Stage I increased from 44% to 57%. The most frequent histological type was ductal carcinoma; the CDIS increased from 4% to 6%; the percentage of lymphadenectomies decreased from 72% to 52%.

We observed a progressive decrease of mastectomy with a consequent increase of breast conservative treatment. Similarly, after the introduction of LNS biopsy there was a decrease of N-lymphadenectomies.

Conclusions: Our longitudinal study on 3,050 consecutive surgical patients confirmed the progressive reduction of tumor size at diagnosis in these last decades.

Perioperative factors that correlated with the decreased tumour size over time were screening and improvement of diagnostic techniques; the

lower number of useless axillary lymphoadenectomies is mainly due to the increased operative use of sentinel lymphonode biopsy.

515 Poster

Gene therapy with proangiogenic plasmids to enhance vascularity of pedicled transverse rectus abdominis myocutaneous flaps in a rat model

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Background: The vascularity of pedicled transverse rectus abdominis myocutaneous (TRAM) flaps used for breast reconstruction may be unreliable. We assess the value of gene therapy with proangiogenic plasmids encoding vascular endothelial growth factor, VEGF165 (pVEGF) and basic fibroblast growth factor, bFGF in a rat model of TRAM flap.

Material and Methods: TRAM flap island (2.5 × 6 cm) was incised over the right rectus abdominis muscle of Lewis rat, and raised to the midline from left side and to the lateral margin of rectus muscle on the right. Both left and right superior epigastric vessels, and left inferior epigastric vessels were divided, thus leaving the entire flap vascularized by the right inferior epigastric pedicle alone. The muscle was left in situ in its sheath.

Six groups of Lewis rats (7 animals in each group) were used. TRAM flap in group I was injected with pVEGF intramuscularly (i.m.), in group II – with pVEGF intradermally (i.d.). Group III received bicistronic plasmid (pVIF) encoding VEGF165 and bFGF i.m., group IV – pVIF i.d., group V – double dose of pVIF i.d., and group VI served as a control.

Rats were sacrificed on day 7. TRAM flaps were photographed and drawn on a transparent foil, with exact marking of necrotic area. The drawing was scanned, and the area of healthy (no macroscopic signs of necrosis) part of skin island was assessed in percentages by a graphic computer program.

Results: Mean area of healthy skin island in the control group was 48%. Best results were obtained by injecting pVEGF i.m. – 79% of healthy skin, and pVIF i.d. – 67.1%. Injection of pVEGF i.d and pVIF i.m. resulted in obtaining 56.6% and 56.1%, respectively. Double dose of pVIF i.d. gave no effect: 48.6%; histopathology examination showed signs of intense fibrogenesis in this group, indicating competitive stimulation of fibroblasts against epithelial cells.

Conclusions: Gene therapy is very promising in enhancing the vascularity of experimental pedicled myocutaneous island flaps. Further experiments are needed to assess it's potential value in clinical application.

516 Poster

Skin sparing mastectomy with conservation of the nipple-areola-complex and autologous reconstruction is an oncological safe procedure – an extended follow-up study

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Background: The oncological safety of less radical surgical procedures like skin sparing mastectomy (SSM) and nipple sparing mastectomy (NSM) can not be evaluated by randomized trials. Therefore we investigated, if SSM and NSM with immediate autologous reconstruction are as safe in oncological terms as modified radical mastectomy (MRM) also in long lasting follow-up.

Material and Methods: Between 1994–2000 246 selected patients with an indication for MRM were treated with SSM, NSM, or MRM. Short term results were published 2003 [1]. After a mean follow-up of 101 (range 32–126) months 238 evaluable patients with SSM (N = 48), NSM (N = 60) or MRM (N = 130) were analyzed for local recurrence (LR), distant metastases (DM), breast cancer specific death (BCSD) and aesthetic results.

Results: LR occurred in 10.4% (SSM), 11.7% (NSM) and 11.5% (MRM) of all patients (p = 0.974). Also with regard to isolated DM (25.0%, 23.3%, respectively 26.2%; p = 0.916) and BCSD (20.8%, 21.7%, respectively 21.5%; p = 0.993) there were no significant differences between subgroups. There was a significant decrease of excellent aesthetic results over time (SSM after 59 months follow-up: 78.4% and after 101 months: 47.9%; p = 0.004; NSM: 73.8% to 51.7%; p = 0.025). An important risk factor for decreased cosmetic score was application of adjuvant radiotherapy.

Conclusion: Skin sparing mastectomy or nipple sparing mastectomy with immediate autologous reconstruction are oncologically safe techniques. But adjuvant radiotherapy decreases the aesthetic results even after a longer period of time.

517 Poster

Local recurrence following breast conservation surgery with 5-mm target margin and 40-Gray breast radiotherapy for invasive breast cancer

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Background: The risk of ipsilateral breast tumour recurrence (IBTR) following breast conservation surgery (BCS) is dependent on treatment- and tumour-related variables. Treatment-related variables include surgical margin status and postoperative radiotherapy. Tumour-related factors include size of tumour, histological grade and tumour biology. In our unit, we have performed BCS with a target radial margin of 5-mm for invasive breast cancer (IBC) combined with fractionated 40-Gy breast radiotherapy postoperatively since 1999. The aim of the current study is to identify risk factors that are predictive of local recurrence in a cohort of patients who underwent our treatment regime for IBC.

Methods and Results: Between 1999 and 2004, 563 patients who underwent BCS for IBC were identified. Women received adjuvant chemotherapy or hormonal therapy as clinically indicated. After a median follow-up of 58 months, 5 of the 563 (0.9%) patients developed IBTR. The 5-year actuarial IBTR rate was 1.1%. In terms of distant disease recurrence (DDR), 29 of the 563 (5.20%) had DDR during follow-up, giving a 5-year actuarial DDR rate of 5.4%. Multivariate analyses identified Nottingham prognostic index (NPI) as the only significant independent prognostic factor for IBTR (p = 0.018).

Conclusion: The 5-year IBTR rate after BCS with 5-mm target margin and fractionated 40-Gy breast radiotherapy is low at 1.1%. NPI may be useful in stratifying patients who are at greater risk of IBTR.

518 Poster

Predictive factors of nipple areolar complex invasion in breast cancer patients with mastectomy

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Background: Skin-sparing mastectomy with nipple areolar complex (NAC) preservation improves aesthetic outcome for breast cancer patients. This study was performed to investigate predictive factors of NAC-base neoplastic involvement to define the indications for NAC preservation.

Materials and Methods: A retrospective analysis of 198 mastectomy patients was conducted to determine the frequency of malignant NAC invasion. The association between NAC involvement and predictive factors, including tumor size, axillary nodal status, nuclear grade, hormone receptor status, tumor multiplicity, tumor location, tumor nipple distance (TND), and lymphovascular invasion (LVI), was evaluated.

Results: The overall frequency of malignant nipple involvement was 19 of 198 (9.6%). Significant differences were found in tumor size, axillary nodal status, tumor nipple distance, TND, and LVI. According to this study, clinical contraindications for NAC preservation include tumors >2.4 cm, positive axillary lymph node, TND < 4 cm, and positive LVI.

Conclusions: NAC preservation can be possible in selected patients if we consider the possibility of pre or intraoperative measurement, tumor size, axillary nodal status, TND, and LVI evaluation.

519 Poster

Breast conserving surgery in locally advanced breast cancer treated with primary chemotherapy: experience at Istituto Nazionale Tumori

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Background: The aim of present report is to evaluate the applicability of breast conserving surgery (BCS) after primary systemic chemotherapy (PSC) in women with locally advanced breast cancer (LABC) and to assess the sufficiency of the a priori criteria adopted to select tumors amenable to BCS.

Material and Methods: In this retrospective analysis patients with LABC consecutively treated at the Istituto Nazionale Tumori in Milan from February 1986 to September 2007 were considered. The therapeutic program consisted of PSC (single agent anthracycline or high dose chemotherapy [HDS] or taxanes-containing regimens) followed by surgery and radiotherapy (chest wall or residual breast ± homolateral