incision for all wire guided breast excisions regardless of location within the breast.

Material and Methods: A list of all patients who had wire guided breast excisions between 2001 and 2011 was compiled from theatre records. Patients' notes, histology and imaging were reviewed.

Results: 227 wire guided excisions were carried out by a single surgeon using the per-areolar approach. The mean age of patients with cancer was 59.5 years (±9.77y), and those with benign disease was 53.0 years (±10.45y). Forty seven (20.5%) lesions were located in the upper inner, 95 (42.1%) in the upper outer, 40 (17.7%) in the lower outer, 34 (15%) in the lower inner quadrant and 5 (4.7%) centrally. 156 (68.7%) cases were carcinoma and/or carcinoma in situ, 62 (27.3%) were benign and in 9 (4%) cases histology was inadequate.

Of those with cancer, sixteen (10.3%) patients went on to have a mastectomy after initial breast conserving surgery, due to the multifocal disease. Thirty two (20.5%) patients underwent re-excision of margins, of which 16 (50%) contained no cancer and 16 (50%) did contain cancer. Of this subgroup of patients who had re-excisions, 1 had further margins excised and 4 had a mastectomy for multifocal disease. In total 43 (27.6%) of patients required a second operation, and 5 (3.2%) required a third operation. There were no patients requiring a fourth operation.

There were 2 patients with local recurrence. Both had DCIS with full excision of the tumour. Mean time from first operation to recurrence was 20.6 months. Both patients underwent mastectomy and are currently disease free.

Conclusions: Using the peri-areolar incision not only gives a superior cosmetic result, but also give excellent outcomes in terms number of therapeutic operations required and recurrence. We recommend that the peri-areolar incision can be used for all quadrants of the breast.

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Surgical Conservation Therapy in Breast Cancer Combined with Intraoperative Radiotherapy − a New Challenge for Surgery

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Background: The popularity of intraoperative radiotherapy (IORT) in breast cancer conservation therapy is increasing. IORT may be used in surgical conservation therapy as a boost to the bed of the resected tumour and it is defined as 'the best gold standard'.

The aim of the study was to present the author's own experience in the application of IORT as a boost to the bed in breast cancer conservation therapy.

Material and Methodology: From May 2008 to March 2010 118 patients with breast cancer underwent conservation therapy with IORT applied to the tumour bed. On average the observation period was 22.81 months. Different aspects of surgical procedure were subjected to analysis as preparation for IORT (ROLL/SNOLL, sentinel node biopsy, tissue margins, resected tissue volume). The results of oncological treatment in the presented period were evaluated. The toxicity of the technique was evaluated by means of the LENT-SOMA scale and the cosmetic effect − by means of the Harris/Limbergen scale.

Results: IORT requires modified surgical procedure during operation. Appropriate, wide dissection of tissues around the tumour and subsequent resection with intraoperative examination guarantee achieving correct margins. Thanks to the intraoperative examination in the analysed group as many as 40 patients (33.7%) had their margins radicalised. The evaluation of the volume of resected tissues did not reveal differences between palpable lesions and the non-palpable lesions where the SNOLL technique was applied. Thanks to the intraoperative sentinel node biopsy 16 patients avoided another surgery. No relapse of the neoplastic process was diagnosed during the period of observation subject to analysis. Late toxicity was specified as grade zero in 50 patients (42.4%). Due to the ambiguous and suspicious image in radiological examinations 6 patients (5.08%) underwent resection of the lesion or biopsy. Good or very good cosmetic effect was achieved in 80% of the patients.

Conclusions: IORT as a boost is a technique ensuring very good results of treatment of patients with breast cancer both in terms of the oncological aspect and the cosmetic effect. The technique is characterised by a small number of complications. However, it requires certain modification of the surgical procedure during the operation and consideration of such accompanying techniques as ROLL/SNOLL, sentinel node biopsy and intraoperative examination.

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Does Immediate Breast Reconstruction Technique Influence True Local Recurrence Rate After Skin-sparing Mastectomy?

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Background: Skin-sparing mastectomy (SSM) followed by immediate reconstruction (IR) is a generally accepted oncosurgical treatment. However, association between local recurrence and breast reconstructive techniques has not been widely investigated yet. Therefore, we determined local recurrence rate of breast cancer patients treated with SSM and IR with autologous flaps or implant-based techniques.

Methods: 207 patients (Stage0−IIIB) underwent SSM and IR (1995–2000) for invasive cancer (n = 153) or DCIS (n = 54) were followed-up for 111.9 [8–163] months. Reconstructive techniques were the following: LD: 70, LD+implant: 38, implant only: 54, DIEP: 29, TRAM: 8, SIEA: 5, SGAP: 3. Statistical associations were calculated by two proportions Z-test.

Results: 6 patients (2.9%) were detected with true local recurrence in 10 years. While 5 patients developed local recurrence with implant only reconstruction, only 1 was diagnosed with the same after autologous reconstruction ($p = 0.038$). However, a comparison of implant-based (LD & LD+implant) to autologous techniques showed no significant association ($p = 0.07$).

Conclusion: Implant only reconstructions may be associated with higher local recurrence rate after SSM, although the overall detected events were relatively few. These data however urge further investigations to determine whether implant reconstructions increase local recurrence rate.

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Safety of Fat Grafting in Secondary Breast Reconstruction After Cancer

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Background: Fat grafting is largely used to correct soft-tissue defects in any region of the human body. This study analysed its safety when the technique is used to correct defects after breast-cancer reconstruction.

Material and Methods: A total of 158 patients who underwent 194 breast fat grafting procedures were analysed. Almost all patients (98%) had a personal history of breast cancer: conservative surgery or mastectomy with breast reconstruction. In all cases, fat grafting was performed according to the Coleman's technique by a single surgeon.

Results: Immediate complications included liponecrosis and infection in seven cases (3.6%) that required only daily dressings and oral antibiotics administration. In cases of fat grafting after conservative surgery, only four patients (5.9%) showed minor alterations in the postoperative mammograms, consisting of the appearance of benign images.

Conclusion: Breast fat grafting can be a good solution to repair defects after breast-cancer treatment and reconstruction, and can reduce the indication for more extensive surgeries such as myocutaneous flaps. Postoperative complication rates are very low and there is little alteration in follow-up mammograms. Two points remain unclear–how much of the fat is absorbed after grafting and the potential risk of local 'dormant' tumour cells being stimulated to induce a local recurrence.

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Sentinel Lymph Node (SLN) Biopsy in Early Breast Cancer Guided by Indocyanine Green (ICG) Fluorescence Imaging Method − Preliminary Experience and Ongoing Trial

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Background: SLN biopsy with radioisotope (RI) and blue dye method are being used successfully for axillary staging in breast cancer patients. These methods show good results but some drawbacks are remaining. Indocyanine green (ICG) fluorescence imaging method is being evaluated as a new method for SLN biopsy in breast cancer allowing both transcutaneous visualization of lymphatic vessels and intraoperative identification of SLN without using a radioactive methodology.

Material and Methods: Thirty women with clinically node negative breast cancer received subdermal peritumoral injection of ICG for fluorescence detection of SLN using a near-infrared camera (1 patient had bilateral injection). All of them also received (99m) Tc-labelled sulphur radiocolloid for SLN scintigraphy. All patients underwent SLN biopsy. SLN was first identified with the fluorescence method and then reconfirmed with the standard method (RI method). Detection rate, sensitivity and clinical feasibility between the 2 methods were the study endpoints.