were palpable cancers except for 3 cases which required wire localisation for excision. Invasive ductal carcinoma was found in 30 cases and 2 were lobular cancers. All had clear margins for the invasive disease but in 2 cases DCIS was found at the margin and further excision was recommended. The specimen weight co-related well with the mammographic prediction in all except 2 cases where excessive tissue (more than 20%) was excised, both of which were in dense breasts. For summary purposes the average weights are shown in the table.

| Tumour size (cm) | Number of cases | Average predicted weight (g) | Average of actual specimen weight (g) |
|---|---|---|---|
| <2 | 19 | 19 | 21 |
| 2−3 | 11 | 30 | 36 |
| 3−4 | 1 | 39 | 42 |
| >4 | 1 | 125 | 104 |

**Conclusion:** Mammographic volumetric assessment allows better pre-operative planning and excision necessary for achieving clear margins. An algorithm can be developed for each tumour size with a predicted excision specimen weight. This can be developed into a quality assurance tool. Further work needs to be done in lobular cancers which are often underestimated on mammography.

**291** Poster

**Simultaneous excision of non-palpable double lesions in the same breast using radioguided occult lesion localisation**

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**Background:** Nonpalpable breast lesions are being succesfully targeted by means of radioguided occult lesion localisation (ROLL). The present study describes an experience with our ROLL technique in the excision of more than one suspected occult lesions in the ipsilateral breast.

**Material and Methods:** Between December 2004 and July 2009, 325 patients underwent ROLL procedure. Included in this study were 6 women who underwent simultaneous excisions of ipsilateral nonpalpable double breast lesions.

**Results:** The mean age of the patients was 48.3 years (range, 42−61 years). All patients presented with two separate nonpalpable breast lesions detected either on ultrasonography (USG) or mammography or both. Multicentricity was observed in 5 patients (83%) and multifocality in 1 patient. Preoperative fine needle aspiration/tru-cut biopsy performed in 2 cases revealed atypical ductal hyperplasia. Image guidance was done either by USG as in 4 cases or stereotaxis in 2. All lesions were successfully localized and excised. Postoperative histopathology results revealed benign lesions in 5 cases and multifocal invasive ductal carcinoma in 1 case.

| | Preoperative findings | | | |
|---|---|---|---|---|
| No. Age/Sex | Radiology | Pathology (FNAB/ Tru-cut) | Localisation technique | Final pathological diagnosis |
| 1. 43/F | *Mammography*: Multicentric clusters of microcalcifications localized in the outer superior and inferior quadrants of left breast (BIRADS 4). | – | Stereotaxis | Outer superior lesion: lipogranuloma Outer inferior lesion: distrophic calcification |
| 2. 61/F | *USG & Mammography*: Multifocal 2 suspicious lesions each measuring 12 mm in diameter localized in the inner lower quadrant of the right breast (BIRADS 5). | – | USG | Multifocal IDC |
| 3. 48/F | *Mammography*: Multicentric clusters of microcalcifications localized in the outer superior and inner inferior quadrants of left breast (BIRADS 4). | – | Stereotaxis | Outer superior lesion: fibrocystic disease Inner inferior lesion: fibrocystic disease |
| 4. 42/F | *USG*: Multicentric 2 solid nodules measuring 12 mm and 7 mm in diameter localized in the outer superior and inferior quadrants of left breast (BIRADS 4). | Atypical ductal hyperplasia | USG | Outer superior lesion: sclerosing adenosis Outer inferior lesion: intraductal papillomatosis |
| 5. 56/F | *USG & Mammography*: Multicentric 2 solid lesions each measuring 15 mm in diameter localized in the outer and the inner superior quadrants of right breast (BIRADS 3). | Atypical ductal hyperplasia | USG | Outer superior lesion: fibroadenoma Inner superior lesion:involuted lobular tissue |
| 6. 40/F | *USG & Mammography*: Multicentric microcalcifications and 2 solid lesions measuring 20 mm and 10 mm in diameter localized in the outer and inner superior quadrants of right breast (BIRADS 4). | – | USG | Outer superior lesion: fibroadenoma Inner superior lesion: fibroadenoma |

**Conclusions:** Based on our experience with a small number of patients, ROLL has proved to be a safe and an accurate procedure in the simultanenous excision of nonpalpable double lesions in the same breast.

**292** Poster

**Indications and technique of one-stage implementation of radical mastectomy and laparoscopic ovariectomy in young patients with breast cancer**

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In the Republican Oncological Scientific Center under the Ministry of Health of Republic of Uzbekistan a new approach to performing of the one-stage operation in young patients with breast cancer has been developed and introduced into practice. Out of 85 young patients who received surgical ovarian off as part of complex therapy of breast cancer in 53 patients ware performed laparoscopic ovariectomy. Age of patients ranged from 27 to 45 years; mean age was 36.5±1.7 years.

In the preoperative period in addition to clinical visual examination all patients were examined in regard to levels of sex hormones (estrogen, progesterone) and Her-2/neu (Human Epidermal growth factor Receptor 2), the presence of positive results was a direct indication for the implementation of one-stage operations.

As a result of one-stage radical mastectomy and laparoscopic ovariectomy operating period lasted about 20−24 minutes that is 2 times shorter than in the laparotomic ovariectomy. Pain syndrome also was reduced due to minimally invasive method. This in turn led to:

– a decrease in taking of narcotic of analgesics;
– a rapid postoperative recovery period patients; and reduction of the length of patients stay in hospital (14.8±2.5 days, instead of 18.2±3.1 days).

Thus, the implementation of one-stage radical mastectomy and laparoscopic ovariectomy in young patients with breast cancer is effective both socially and environmentally, and leads to rapid rehabilitation of patients.

**293** Poster

**The first in Bulgaria single institution experience with nipple-sparing mastectomy − preliminary results**

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**Background:** Different kinds of skin and nipple-areola conserving mastectomies with immediate reconstruction are widely performed worldwide over the past decades but still are not popular in Bulgaria.

**The aim** of our study is validation of oncological safety and reconstructive efficacy of nipple-sparing mastectomy (NSM) with immediate reconstruction performed by us.

**Material and Methods:** Between Dec 2006 and Nov 2009 in Dept. of Breast Surgery, "St. Sofia" Hospital 15 patients with breast cancer (BC) or high-risk undergone NSM with immediate reconstruction with prosthesis or expander. Three of the women were operated bilaterally, i.e total number of NSM performed is 18, including 14 for cancer treatment and 4 prophylactic. We selected women with medium to small size breasts, mean age 41.7 years, tumor size up to 3.5 cm and tumor–areola distance at least 2 cm. The interventions were made under general anesthesia and local tumescent technique. We used periareolar, lateral, inframammarial skin incision or excision of the overlying skin in case the tumor was very close to it. Axillary dissection was performed through the same incision or second incision in the axilla, depending on the case. In all cases the implants were placed subpectoral and the pocket were made again by local tumescent technique. Permanent implants were used when volume up to 400cc is needed and permanent expander Backer type in case of bigger volume desire. The retroareolar tissue was always sent separately for histologic exam. Definitive histological examination reveal no tumor invasion of the tissue under the nipple in none of the patients. Adjuvant therapy was administered if appropriate following the standards.

**Results:** Follow-up period was 1−34 months (mean 8.8 months). None of the patients developed local recurrence, distant metastasis and all are alive. Partial edge necrosis of the nipple appeared in 5 (27.8%) cases. Only 1 patient (5.6%) reported significantly changed NAC sensitivity. Overall cosmesis was subjectively judged by patients and surgeon as good to excellent in all cases (4-point scale of cosmetic results).

**Conclusion:** Although small number of cases and very short follow-up time our initial results are quite encouraging. This study is still ongoing and

bigger number of cases with longer follow-up period is needed to validate statistically the oncology safety of the NSM performed by us. The early results convinced both surgeons and patients in the esthetic benefits of NSM with immediate reconstruction versus modified radical mastectomy (MRM) or skin-sparing mastectomy (SSM). This intervention increases patient's quality of life and satisfaction of the treatment results, and could be a reasonable alternative of classical mastectomy in selected patients.

**294** Poster

**Pain and analgesic consumption after breast cancer surgery − a prospective study**

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**Background:** Pain after breast cancer surgery is not very well studied. Our aim was to study the severity of pain and oral analgesic consumption in patients in the week following surgery for breast cancer.

**Materials and Methods:** In an ongoing prospective audit, women undergoing breast cancer surgery were asked to record the severity of pain daily using a visual analogue scale (range 0–100) for a period of one week starting the day after the operation. They were discharged home on oral analgesia and also kept a record of oral analgesic consumption during this period.

**Results:** Among 81 patients studied so far, 66 had breast conserving surgery, 13 had mastectomy, and 2 had axillary clearance only. The median pain score on the first post-op day was 18 (0−87) and on 7$^{th}$ post-op day 2 (0−34). Ten (8%) patients have stopped taking oral analgesia by day 1, and 47 patients (58%) by day 7. We noted that patients who recorded highest pain scores often did not take the recommended daily maximum of oral analgesia.

**Conclusions:** Breast cancer surgery is not associated with significant pain in the post-operative period and the severity of pain decreases steeply in the week following surgery. Only about 40% of patients require oral analgesia beyond a week. It may be appropriate to discharge patients with a week's supply of take-home analgesia. This would reduce cost and unwanted side-effects as some patients would aim to complete the prescribed course of analgesia even if they are not in pain. Those who require analgesia for a longer period could obtain it at the follow-up breast clinic visit, or from their general practitioner. Encouraging patients that it is safe to take the maximum recommended daily dose of oral analgesia may further improve pain control post-surgery.

**295** Poster

**10-year results of breast conserving treatment using perioperative brachytherapy boost and delayed boost after whole breast irradiation in material of Maria Sklodowska-Curie Memorial Cancer and Institute of Oncology in Warsaw, Poland**

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**Background:** Comparing results of treating patients with breast cancer at whom we applied boost with perioperative brachytherapy (BRT) HDR Ir-192 or after irradiation of entire breast from external fields (WBI).

**Materials and Methods:** In years 1997–2003 we included 115 patients with breast cancer in the stage T0−2 N0−1 whom we applied the boost with BRT method; in 40 cases − perioperative (group I), in 75 − after the teleradiotherapy (group II). No statistical difference (age, diameter of tumor size, pTNM) between these two groups was observed. In group I we applied boost in the dose of 10 Gy/1 fr, and then WBI in the dose of 50 Gy/25 fr or 42.5/17 fr. In group II after operation we performed WBI, and then after 5 days BRT in the dose of 10−15 Gy/1 fr.

**Results:** Median of the time of observation was 125 months. The volume of irradiated of breast tissue in group I was 8−75 cm$^3$ (24.3 cm$^3$), in group II 10−56 cm$^3$ (36 cm$^3$) $p < 0.001$. Distant metastases were observed in 3 patients (7.5%) in group I and 6 (8%) in group II. In group I we observed 1 (2.5%) local recurrence, in group II − 3 (4%). Also a statistical difference in DFS wasn't observed ($p = 0.77$). Also a statistical difference wasn't shown ($p = 0.812$) in the evaluation of the cosmetic effect between both groups.

**Conclusions:** Applied sequence perioperative BRT is comparable to the traditional sequence of treatment.

**296** Poster

**Direct monitoring by Cook-Swartz Doppler − a study of 7 years in Free-Flaps operations; macro, micro and re-exploration results in regard to breast reconstructive surgeries**

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**Background:** After establishing the microvuscular techniques for blood vessels anastomosis of free-flaps operations, began the phase of enhancement an accurate and precise methods to minimize the failure of free-flaps, most frequently on account of venous disturbance and occlusion. This necessity promoted invention of several techniques trying to predict and prevent this unfortunate outcome. A variety of devices have been mentioned in the literature, however none had the ability to fulfill the basic requirements that can be applied to all kinds of free-flaps surgeries. The Cook-Swartz Doppler is a 20 MHz Ultrasonic device, invented and modified the past 2−3 decades, which is placed distal to the microvascular anastomosis. A silicone cuff circulates the vein examined, from this probe; a wire leads continues signals to the device being place near the patient bed. These audio signals are being monitored routinely by medical personnel.

**Methods:** In a retrospective study (1997–2007), tracking the admission and usage of the implantable Doppler probe, since 2000 in the microsurgical unit, we evaluated all parameters mentioned further from 523 consecutive patients, underwent 608 microsurgical procedures, 77 of them had Breast reconstructive surgeries. The data in this research was taken from several sources: patients' medical files, surgery reports and implanted Doppler reports. From these documents we retrieved the medical files of patients who underwent secondary surgery (revision) due to blood flow obstruction.

In this research we examined:

1. The efficacy of this modality, in Macro and in Micro aspects: each of the branched microsurgical divisions, emphasized Breast reconstructive unit opposing to other sub-divisions, comparing results of overall success and failure rates to the control group monitored in traditional means.
2. Re-exploration operations: time taken place, finding outcomes, sensitivity and specificity of this modality.
3. Learning curve of the medical staff.

**Results:**

1. The overall success rates are promoted by this device, from 90.62% to 95.33%. Prominent effectiveness found in Breast reconstruction division (94.6% vs. 77.5%), with statistical significant ($P < 0.05$).
2. Higher rate of microsurgical revisions monitored by implantable Doppler versus the control group (12.84% vs. 8.54%). Nevertheless, achieved tremendous success rates (87.9% vs. 46.6%), especially due to earlier detecting time of blood interference/occlusion (1–1.18 days vs. 2.5−2.7 days). In Breast reconstructive surgeries, we tracked a considerable high rate of free-flap salvage success rate (83.33% vs. 42.85%); and an average of rapid detection time which quickly brought the patient to a re-exploration at the theatre (1 vs. 2.571 days), with statistical significant ($P < 0.05$). 100% Sensitivity and 91.6% specificity for this modality.
3. Conspicuous learning curve (reducing operation time by an average of 3 hours and one hour shorter for revisions).

**Conclusions:** The implantable Doppler is valuable and predictable monitoring device. It was found to be safe and easy to use, reliable in time and accuracy and most beneficial in Breast reconstruction division. In divisions with no or less success, we suggest cutting costs and transferring this modality to recommended divisions.

**297** Poster

**Nationwide survey of the use of absorbable mesh in breast surgery in Korea**

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**Background:** It is known that many physicians have been using mesh on breast surgery recently but, there is no information for this practice. The aim of this study is to investigate the present use of mesh at breast surgery in Korea.

**Methods:** We conducted a survey from members of Korea Breast Cancer Society by phone, E-mail, and notice on the website from 6th to 20th April 2009.