Results: The rate of histological confirmed ductal spreading were seen in 60% (114/191cases), 85% (40/47 cases) and 83% (19/23cases) of patients with 3D-MRI pattern 1), 2), and 3), respectively. From April 2005, resected specime was serially step cut and total specimens were evaluated. Tumor diameter from nipple side to lateral margin were measured by MRI and resected specimens, tumor size was correlated between MRI and resected specimens, significantly (n=47, r=0.887,P<0.001). Patient selection for breast conserving surgery was based by 3D-MRI images. The proportion of breast-conserved surgery were obtained 95% (182/191 cases), 89% (42/47 cases), 26% (6/23cases) and 89% (66/74 cases) of patients with 3D-MRI pattern 1), 2), 3), and 4), respectively. Local failures were seen 2cases in pattern 1), one case in 3) and one case in 4) (1-73 months, median follow up 36 months).
Conclusion: These results suggest that MRI will be the useful breast imaging tool in diagnosing ductal spreading and tumor size in breast cancer patients. Safety breast conserving surgery was achieved by MRI guided surgery.

1081

Breast conserving therapy: the Edinburgh experience 1981-1998 on behalf of the Edinburgh breast research group.

Kunkler IH, Jack W, Kerr GR, Chetty U. Western General Hospital, Edinburgh, United Kingdom

Background: Breast conserving therapy has been offered to increasing numbers of women with early breast cancer with greater attention to surgical margins.
Patients and methods. A retrospective analysis was carried out of a consecutive cohort of 1816 patients managed by breast conserving therapy in Edinburgh between 1981-98.
Results. Mean clinical tumour size was 20.7 mm. Mean age was 54.8 years (range 24-91). 64.8% of patients were postmenopausal. Axillary surgery was by node sample, dissection or axillary clearance in 1361 (76.5%), 36 (2%) and 387 (21.5%) patients respectively. Histological nodal status was negative in 1322 (70.5%) patients and positive in 493 patients (29.5%). Radical radiotherapy (RT) was delivered to the whole breast. Axillary RT was given to 601 patients. A boost was given by electrons (1352)) iridium implant (377) or photons (15).Adjuvant systemic therapy was with tamoxifen (1184), CMF chemotherapy (136), CMF + hormones (140), Bonnadonna/EpiCMF (28) and oophorectomy (35). No adjuvant systemic therapy was given to 230 patients.
Histological characteristics of the population were: no special type (1421 [78.2%], tubular (96 [5.3%], lobular (121 [6.7%],mucoid (29 [1.6%], medullary (26 [1.4%], cribriform (16) [4.3%] and VST (77 [4.3%]. Mean pathological tumour size was 16.5 mm (range 2-45mm). Tumour grade was available in 1208 patients (66.5%.) [grade 1 (303), grade 2 (491), grade 3/4 (414)]. Lymphatic invasion was recorded in 962 patients (53%) and present in 227 patients. For 962 patients for whom margin status was available, invasive cancer and DCIS were present at the margin in 247 and 48 patients respectively. An extensive intraduct component was present in 138 of 481 patients. Multifocality was present in 167 of 1762 patients.
Two patients were lost to follow up at 8 months and two at 3 years. Minimum follow up was 60 months. 492 patients have died. Actuarial estimates of survival from all causes were 88.5%,78.1%,56.2% at 5,10,15 and 20 years. 304 deaths were due to breast cancer,
Five year cause specific survival (CSS) for the whole cohort was 91.1% (CI 89.8%-92.%).5 and 10 year CSS were significantly poorer with younger age [p=<0.0001] and with increasing number of positive nodes (p=<0.0001). There was no significant difference in 5 and 10 year cause specific survival in patients by year of treatment (p=0.79). 5 and 10 year local recurrence rates for the recent (1993-8) cohort (4.0% and 7.1%) were significantly improved (p=0.018) compared to the 1981-92 cohort (5.4% and 10.7%).
486 patients have relapsed. First sites were: ipsilateral breast (138), axilla (58), SCF (15), distant (243) and contralateral breast (70). Actuarial rates of breast relapse at 5,10,15 and 20 years were 4.6%,8.7%,14% and 20.5%.
Conclusions: Local control rates at 5 years in the breast are consistent with national guidelines. They have improved between the periods 1981-1992 and 1993-8, perhaps reflecting in part increasing surgical attention to obtain clear margins.

1082

Endoscopy-assisted mastectomy.

Park GJ, Park YL, Kwak HJ, Bae WG. Kangbuk Samsung Hospital, Sungkwunkwan Univ., Seoul, Korea

Purpose: The cosmetic appearance of the breast is an important factor for the women patients with breast disease.One of the advantage of endoscopic surgery is that it can be performed via a small and remote incisions that become inconspicuous after surgery. We applied endoscopic surgery for patients with breast disease for maximizing the cosmetic outcome. Methods: From october 2002 to April 2006, 5 patients with benign breast disease and 62 patients with early breast cancer underwent endoscopy-assisted mastectomy. At first, incision was made along the line of the lowest axillary skin crease. The retromammary space was dissected gently through the axillary incision by using Vein Harvest (Johnson & Johnson Corp.) and Powerstar scissors (Ethicon Crop.) under the view of an endoscopic monitor. After completing the dissection, we made a periareolar incision facing the tumor and the skin adjacent to the incision and some of periareolar tissue was resected for a frozen biopsy to exclude invasion of breast cancer to the area of the nipple areolar complex. We then made several subcutaneous tunnels with the Visiport and completed the subcutaneous flaps with the Powerstar scissors. In case of 16 patients to be performed partial mastectomy, we inserted the designed absorbable polypropylene mesh into the defect to minimize the deformity of the breast. Patients and tumor characteristics were analyzed. Breast shape and asymmetry and the state of the areolar were taken into consideration for the subjective cosmetic evaluation that was done by the patiets themselves. The patients were requested to score the cosmetic appearance of their breasts as excellent, good, fair, poor or very poor using their own criteria at 3 months after operation. Results: Mean age was 46.6 years (range 25-68) and all female. Average operation time were 178±28.4 minutes for total mastectomy (120-235 minutes) and 157±22.7 minutes for partial mastectomy (120-200 minutes) and average volume of bleeding was 209.4cc (30-900cc). In all cases, nipple areolar complex could be conserved. Breast reconstruction after total mastectomy was performed in 10 patients (6 with immediate saline bag implantation, 1 with TRAM, delayed saline bag implantation). Mean follow up period is 18.5±14.7 months. There were 2 cases of cancer recurrence at axillary node and neck node, respectively. In case of partial mastectomy with mesh, follow up ultrasonography showed granulomatous walled seroma without any sign of complication. This could be confimred grossly and pathologically in one patient who underwent salvage operation for multifocal DCIS. 91.6% of patients answered 'excellent' of 'good' about cosmetic outcome. Conclusion: The endoscopic breast surgery is a new technique that can minimize the long operative scar. In properly selected cases, our results showed the maximized cosmetic satisfaction of breast-cancer patients. And mesh apply into postoperative defect could be one of the options for breast reconstruction.

1083

Towards a computer-aided medical system for the aesthetic evaluation of breast cancer conservative treatment.

Cardoso MJ, Cardoso JS. S. Joao Hospital, Porto Medical School, Porto, Porto, Portugal; Porto University, Porto, Porto, Portugal

Objectives: This work presents a novel approach for the automated prediction of the aesthetic result of breast cancer conservative treatment (BCCT). Cosmetic assessment of BCCT plays a major role in the study of breast cancer treatment evaluation. Objective assessment methods are being preferred to overcome the drawbacks of subjective evaluation.
Material and methods: A dataset of images from 120 patients was considered, encompassing three breast cancer units. The dataset of images was classified into four classes (excellent, good, fair, poor) by a panel of international experts, providing a gold standard classification. As possible types of objective features we considered those already identified by domain experts as relevant to the aesthetic evaluation of the treatment procedure, namely those assessing breast asymmetry, skin colour difference and scar visibility. Instead of limiting any subsequent analysis to an initial choice of index for each type of feature, the option was to record all well-known indices, plus some new ones introduced in this work, with the purpose of proceeding later to a feature selection analysis. As a result, 7 asymmetry indices, 8 colour difference indices

and 8 scar visibility indices were collected. A joint feature selection and classifier design was next conducted with support vector machines. The developed algorithm was evaluated in terms of expected error rate.
Results: The best subset of indices in terms of classification error rate comprises 2 indices for assessing asymmetry, 2 indices for assessing colour differences and 2 indices for assessing scar visibility. An expected correct classification rate of 80% was obtained when categorizing a set of unseen images into the aforementioned four classes. This rate is better than the result of the best expert from the panel, when confronting the individual classification with the panel consensus.
Conclusion: The results obtained are rather encouraging and the developed tool could be very helpful for assuring objective assessment of the aesthetic result of BCCT.

1084

Attitudes towards breast conserving surgery in the over 70's.

Dayal S, Murray J, Lannigan A, Lanarkshire Breast Group. Wishaw General Hospital, Wishaw, United Kingdom

Background: The majority of breast conserving surgery (BCS) is performed in younger women with breast cancer. There is little published information about the views of women aged over 70 regarding BCS and the factors which are important in influencing their decision about the type of surgery to choose.
Methods: A questionnaire was sent to 180 patients who were aged 70 or over at the time they had breast cancer surgery. Responses were received from 111 patients (62%). Of these 71 patients had had a mastectomy (64%) and 40 patients had BCS performed (36%).
Results: More than 80% of patients in both groups made their final decision about the type of surgery to have during their first outpatient consultation. 85% of patients who had a mastectomy said that their surgeon had recommended this as the best surgical option for them compared with 75% of those having BCS. More patients who ultimately chose mastectomy had the expectation that they would require mastectomy when they were first told they had breast cancer than patients having BCS (66% vs 45%). 18% of patients who had a mastectomy said they would have preferred to have BCS if that had been an option for the treatment of their breast cancer. 50% of patients said they would have been happy to take neoadjuvant endocrine therapy in an attempt to shrink their tumour preoperatively to try to facilitate BCS. However, only 11% of patients would have considered neoadjuvant chemotherapy with the same aim. Almost half of all patients who had a mastectomy said that the possibility of local recurrence following BCS was a factor which influenced their decision (46%). Only 20% of patients felt that having to travel a long distance to attend for post operative radiotherapy put them off having BCS. Of the 40 patients who had BCS, 35% reported no side effects at all due to their post operative radiotherapy. 90% of patients reported having no difficulty with the long daily travelling time. Only 45% of patients who opted to have mastectomy and 35% of patients undergoing BCS were worried about the cosmetic effects of losing a breast. 63% of patients having mastectomy and 48% undergoing BCS worried that their surgery may lead to feelings of low self esteem or depression. 98% of patients who had a wide local excision said they were happy with their decision to have BCS. Of these, 70% said they were happy or very happy with their cosmetic outcome.
Discussion: BCS is something that patients aged over 70 are interested in considering in the same way as younger patients. As many as half of patients requiring mastectomy would be willing to take neoadjuvant endocrine therapy to attempt to downstage their tumour to facilitate BCS. Although some patients were put off by the requirement for post operative radiotherapy the majority of patients did not consider this to be a problem.

1085

The saline instillation method gives high percentage of breast conserving surgery, few reresections, few local relapses, very few patients needing reconstruction and few oncoplastic operations.

Guldvog I, Podhorny N, Begic A. Central Hospital of Telemark, Porsgrunn, Telemark, Norway

Background: Breast Conserving Surgery (BCS) is safe, but the relapse rate must be kept low. Could anything be done locally in the breast increasing the radicality of the removal and at the same time optimizing the cosmetic result? Instillation of saline into the cavity after the tumour removal creates a seroma during the wound healing prohibiting scar, deviation and deformation and makes it possible with large resections up to 1/3 of the breast. The saline does not disappear and with time the cavity is filled with firm tissue like connective tissue.
Material and Methods: Since 01 10 01 until 02 06 05 a strict consecutive series of 548 breast cancer patients have been operated with saline instillation into the cavity using 140% in mls compared to the gms tissue removed. The wound has been closed with a single layer continuous subdermal suture making the closure water-tight. **Results:** Compared with the period before the saline instillation, the radicality was increased to 183% (i.e. Weight of the specimen divided by the diameter of the tumour). In our population of half clinically detected cancers and screening detected tumours 83% could be operated by BCS, Only two relapses which gives <2% relapse rate after 10 years. Only 17% had a mastectomy and 53% of these were>75 years leaving only 5 pts per year in a population of 140 new cancers per year wishing a reconstruction of the breast performed. 85% of the BCS cases were quite satisfied with the result wanting no further surgery, and out of the 15% wanting oncoplastic surgery half of these just needed reduction on the other side. 7-8 pts per year needed and wanted augmentation on the operated side.
Discussion: A simple procedure like saline instillation can optimize BCS, minimizing loss of the breast and reducing the need for plastic surgical expertise.

1086

MR guided focused ultrasound surgery (MRgFUS) of breast cancer.

Yasuda Y, Hidemi F, Namba K, Tanaka C, Nakahara H, Komaki K. Breastopia Namba Hospital, Miyazaki, Miyazaki, Japan

Background:It has been clarified that due to the historical change of theoretical establishment on biological characteristics of breast cancer, the significance of lymph node dissection does not lie in the treatment, but in examination for predicting systemic metastasis and establishing treatment strategy. The change of understanding for the local therapy in the background may have promoted emergence of Non-Surgical Ablation. That is, Non-Surgical Ablation for cancer nest in the breast is an extension of conservative treatment of breast cancer, in other words, ultimate conservative treatment of breast cancer. Idea of utilizing focused ultrasound is one of the methods including radiofrequency, cryotherapy, laser, and microwave.
Methods:In our facility, phase II clinical study BC003 to conduct FUS under contrast MRI was performed on 30 patients from April of 2004 to February of 2005. The endpoints of BC003 are pathological effect and adverse events. At the same time, 22 patients have been treated as the commercial patients out of protocol. And we have tried phase III clinical study BC004 on 100 patients from April of 2005. BC004 is the final clinical trial of MRgFUS of breast cancer. This study does not include surgical excision and include sequential radiotherapy. The endpoint of it is local recurrence rate.
Results:The treatment effect in BC003 on the targeted tumor was 96.7 percent in terms of the tumor area on the sample and 99 percent or greater in terms of the volume. In terms of safety, the results were almost satisfactory. Only one case was which was diagnosed mucinous carcinoma was a recurrent case in the treatment of commercial patients. BC004 is on going.