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## POSTER

**Magnetic resonance guided breast surgery**

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**Background:** Contrast enhanced magnetic resonance imaging is highly sensitive and specific for the detection of breast lesions of all types. It may also reveal any unsuspected and impalpable carcinoma in situ associated with a primary lesion. Intraoperative magnetic resonance imaging may help guide excision of breast lesions, particularly those that are impalpable and reduce recurrence of breast cancer due to involved resection margins or inadequate excision of multifocal disease.

**Method:** 35 patients (range 20–72 years) with breast lesions requiring excision underwent surgery under general anaesthesia in a 0.5 T Interventional Magnetic Resonance (iMR) unit. Lesions were localised with contrast enhanced (Gadolinium DTPA, 0.2 mmol/kg iv) Fast Spoiled Gradient sequences (FSPGR). 30 excision biopsies, three wide local excisions of impalpable areas after localisation with titanium wires and two simple mastectomies were undertaken in the iMR using titanium instruments and an ultrasonic scalpel. Intraoperative imaging with FSPGR sequences demonstrated developing resection margins and the course of excision was altered as necessary. Complete excision was confirmed at the end of the procedure with similar imaging protocols.

**Results:** All tumours were visualised with static imaging and all but one enhanced with contrast. Intra-operative imaging demonstrated a resection margin in all cases and post-procedure scans clearly demonstrated complete excision. There were 18 fibroadenomas, 10 foci of fibrocystic disease, 1 Schwannoma, 1 unenhancing area of fat necrosis, 1 area of DCIS and 4 invasive ductal carcinomas, one unexpected. All of the carcinomas were completely excised but the unsuspected carcinoma proceeded to have a further wide local excision.

**Conclusions:** Rapid sequences allow image guided biopsy and placement of guide wires. Intra-operative MR scanning reliably identifies palpable and impalpable breast tumours, demonstrates resection margins and confirms complete excision of the tumour.

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## POSTER

**Management of non-palpable mammographic abnormalities: ABBI excision vs core biopsy**

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Screen detected mammographic abnormalities pose diagnostic and therapeutic problems. We have prospectively assessed core biopsies and stereotactic excision biopsies performed on a prone table (ABBI, USSC).

**Method:** Patients were recruited from both screening and symptomatic clinics. The decision to perform a core biopsy or excision was based on radiological suspicion, type of radiological abnormality and stereo cytology result. All procedures were done as day cases under local anaesthesia.

**Results:**

n = 108	Benign	DCIS	Invasive	Equivocal
Core Biopsy n = 74	47 (3-radial scars)	14	10	3 (DCIS)
Excision n = 34	16	7	11	Nil

Core biopsy underestimated the disease in 9 cases, missed invasive disease in all 3 radial scars, under-diagnosed invasive carcinoma as DCIS in 3 and the 3 equivocal cases had DCIS. By contrast ABBI excision was accurate histologically in all 34 cases.

**Conclusion:** this study questions the accuracy of core biopsy and suggests that stereotactic excision may be a more appropriate diagnostic procedure in selected cases.

ABBI- Advanced Breast Biopsy Instrumentation, DCIS- Ductal carcinoma in situ.

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## POSTER

**Accuracy of endoscopic axillary lymph node dissection in breast cancer patients**

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**Purpose:** To reduce shoulder-arm morbidity after axillary lymph node dissection a new surgical approach has been introduced recently using minimal invasive techniques. We examined the feasibility and accuracy of endoscopic lymph node dissection following liposuction in comparison to standard procedures for level I and II dissection.

**Methods:** In a series of 30 stage I breast cancer patients we performed endoscopic axillary lymph node dissection following lipoaspiration. Intraoperative identification of anatomical structures was registered as well as intra-And postoperative complications and the number of resected nodes. The results were compared with conventional axillary lymph node dissections performed at the university of Ulm in 1997. Standardized histopathologic examination was performed for both techniques.

**Results:** In all patients an excellent identification of anatomical structures was achieved. After a learning curve of 15 cases the average number of resected nodes resected endoscopically equalled the average number of 18.4 lymph nodes harvested in open procedures. In spite of a very good subjective outcome concerning pain and shoulder-arm mobility, lymphoreas and seroma rates were not decreased.

**Conclusion:** Endoscopic exploration of the axilla in breast cancer patients provides an excellent anatomic orientation and an accurate lymph node dissection. Further detailed studies will be necessary to evaluate the exact postoperative outcome of endoscopic axillary lymphadenectomy in comparison to open procedures.

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## POSTER

**The specialist treatment of the axilla**

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**Aim:** To compare the frequency and adequacy of staging, and definitive treatment of the axilla; and the impact on recurrence.

**Methods:** All women aged under 75 with a histologically verified breast cancer in a defined geographical area were identified through the regional cancer registry for the years 1986–1991 inclusive. All available case-notes were obtained from 11 treating hospitals. Data on surgical management, co-morbidity, post-operative treatments and recurrence were abstracted.

**Results:** Specialist units compared to non-specialists staged the axilla more frequently (93% vs 79%), and more adequately (92% vs 60%). Where no axillary surgery was performed a reason was more frequently found (97% vs 40%). Premenopausal women had inadequate staging performed in 3% compared to 38%. Non-specialist units inadequately treated women in whom sampling was performed in 35%. Overall, inadequate treatment of the axilla was seen in 4% treated by specialists compared to 38% treated by non-specialists. Axillary recurrence rates were 3 times higher for non-specialists (3% vs 10%). All differences were significant,  $p < 0.01$ .

**Conclusions:** Specialist treatment is more thorough, rational, comprehensive and complete. The treatment of the axilla by non-specialists reflects the controversy of this topic for the past twenty years.

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## POSTER

**The relationship between margins of resection and the risk of local recurrence after breast conserving therapy**

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The relationship between the presence of tumor at the margin of breast specimens and the risk of local recurrence after conservative surgery and radiation therapy is not clear so far. Between 1986 and 1993, 763 patients were treated by wide excision and RT (50 Gy) at the Institute of Clinica Chirurgica I of Florence. Their mean age was 55 (range 22–83) and the mean follow-up was 6.8 years (range 10 months–11 years).

A positive margin was defined as tumor present at the inked margin of resection. The distribution of patients was: T1b 210, T1c 394, T2 (2–3 cm.) 148, T4b 11; N– 527, N+ 226, N× 10. The presence of intraductal cancer in the breast specimen was: absent 600, present 137, E.I.C. 26.

The positive margins were 57 (7.5%): 23 infiltrative and 34 C.D.I.S.. We correlated these patients with several factors: by T 4.8% T1b, 8.6% T1c, and 8.8% T2; by N 6.3% N- and 9.7% N+; by C.D.I.S. 7.3% absent, 8.0% present and 7.7% E.I.C.. 53 (6.9%) local intramammary recurrences developed so far. Their rate among the patients with positive margins was 5.4% instead for negative margins was 6.6%. The distribution of local recurrences by T, N and presence of C.D.I.S. in the breast specimen was as follow: 6.4% T1b, 6.5% T1c, 4.7% T2; 7.7% N-, 3.3% N+; 5.6% C.D.I.S. absent, 8.6% present and 3.9% E.I.C.. These data indicate a direct relationship between the positive margins and the diameter of the primitive tumor. The major percentage of positive margins in the N+ category is probably due to the direct correlation between the lymph node status and the size of the neoplasia: no factors were associated to a higher risk of intramammary recurrences. The fact that the positive margins have had the same rate of local relapses as the negative ones is probably due to the correct policy of the Authors that always reexcised the patients that presented E.I.C. or D.C.I.S. -positive tumor and each type of an extensive margin involvement respectively.

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POSTER

### Microinvasive carcinoma of the breast: Is axillary lymph node dissection indicated?

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**Background:** The natural history of microinvasive intraductal carcinoma (MIDCIS) is still poorly understood. The definition of microinvasion (MI) is controversial among pathologists. Conflicting reports have been published addressing the clinical management of the patients (pts).

**Design:** Retrospective study (1980-1996) of 58 MIDCIS treated by lumpectomy or mastectomy, with axillary node dissection. MI was defined as a single focus of invasive carcinoma  $\leq 2$  mm or up to 3 foci of invasion each not  $< 1$  mm in max diameter. When MI was diagnosed, extensive samples were collected to eliminate larger foci of invasion. Pts were also classified according to other definitions of MI. We used the Van Nuys scoring system for DCIS when it was possible.

**Results:** The mean age was 51 (28-72), 21 pts were post menopausal, 5 received a substitutive hormonal treatment. Forty four pts (76%) had mammographically detected microcalcifications, and 14 clinical symptoms (including palpable lesions in 7 cases). DCIS was of comedo (N = 32, 55%), cribriform (N = 10, 17.5%), papillary (N = 9, 15.5%), and solid (N = 8, 12%). Axillary dissection yielded a mean of 11 nodes. Nodal involvement was observed in 3 pts (5 pts) who were treated by mastectomy for extensive lesions (1 N+/13, 15 N+/12, 7 N+/13). High grade comedo DCIS was observed in the 3 cases. Immunohistochemical investigations showed positivity for p53, erbB2, high Ki-67, and weak hormonal receptivity, which was the profile of comedo DCIS. Our results were compared to the literature.

**Conclusion:** In the absence of a consensus regarding the definition of MI and in absence of clinical and biological predictive criteria of MI, axillary lymph node dissection should still be warranted for MIDCIS.

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### Oncologic outcome in patients with breast cancer treated with breast conserving reconstruction

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**Purpose:** Immediate volume replacement with autogenous tissue has been developed to allow a wider excision without compromising the aesthetic results in breast conserving therapy. Here, we reported the outcome of patients who underwent breast conserving reconstruction.

**Method and Results:** Wide excision was performed in 153 patients underwent wide excision from March 1986 to February 1998. The surgical margins of excised tissue were histologically examined during surgery. If involved, the breast tissue adjacent to the primary site was also excised. Eighteen patients (12%) underwent modified radical mastectomy because of positive surgical margins in the re-excised breast tissue on frozen and/or permanent section, although two patients did not have a second operation because of the limited involvement of the surgical margins. A mild breast deformity after wide excision was corrected by wide undermining and conization of the residual breast tissue in 66 patients, but a severe breast deformity was corrected immediately by transposing an adipose tissue and latissimus dorsi mini-flap in 69 patients. All of these patients underwent

axillary dissection followed by breast irradiation. Consequently, the breast appearance was not different between patients with breast reconstruction and those without. Of 135 patients, only one patient (0.7%) who treated with breast conserving reconstruction developed a breast recurrence, while 5 patients (4%) had distant metastases and 3 of these died. The 10-year survival rate was 97%.

**Conclusion:** Breast conserving reconstruction can provide adequate local control without compromising the breast appearance.

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POSTER

### Prophylactic mastectomy: Patient selection and development of a surgical technique

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Bilateral prophylactic mastectomy (BPMx) is increasingly the choice of many women at high lifetime risk of breast cancer by virtue of strong family or gene testing but there is no consensus on optimal surgical technique. Women on our unit are only offered BPMx according to a strict protocol after formal risk verification: the uncertainties of BPMx with or without breast reconstruction are discussed fully.

Since 1995, 56 women have been offered BPMx and 48 have proceeded with surgery, 33 by one surgeon, 30 with immediate reconstruction and 3 undergoing conventional simple mastectomy, 2 with autologous free nipple grafts. Initially 4 patients with reconstruction had immediate permanent implants: 2/4 were cosmetically good but 2 were not, and 1 of these subsequently chose implant removal and conventional mastectomy. A novel technique of total glandular mastectomy combined with ptosis-correction mastopexy and submuscular tissue expansion was developed to optimise breast glandular resection and enhance cosmetic outcome. Thin skin flaps are created, and if requested, the nipple/areola skin (NAC) preserved on de-epithelialised bridges. After 6 months' expansion, permanent implants are positioned whilst restructuring the mammary fold.

In 29/30 women NACs were successfully preserved: 1 has had NAC reconstructions. 3/26 had tissue expander device failure. There were no failures from infection. Patients are being carefully followed up to assess long term oncological efficacy and cosmesis.

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### Superconservative surgery for early breast cancer: Preliminary results

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**Purpose:** The superconservative surgical approach without axillary dissection (AD) for early breast cancer treatment is debated, although several prognosticators can be used to choose postoperative therapy. Furthermore, the AD avoidance allows prevention of possible complications, such as arm morbidity. We report a clinical trial to assess the role of AD in selected patients.

**Patients and Methods:** From 1996 January, 85 patients with breast pT1 were included in the trial, following severe inclusion criteria. All patients underwent a breast wide excision or quadrantectomy without AD, and were randomised for radiotherapy to breast and axilla or breast alone. The adjuvant therapy outcome by ER, grading, and proliferative index (Ki-67). Follow-up included clinical and instrumental examinations, every 4 and 12 months respectively.

**Results:** The preoperative clinical data suggested 82.3% T1 (T1a 2.5%, T1b 8%, T1c 41.8%) and 6.3% T2. 11.4% were non palpable lesions. Clinical node status was N0 in 82.4% and N1a in 17.6%. pT1 was histologically demonstrated in all cases (pT1a 10.7%, pT1b 44%, pT1c 45.3%). The concordance between clinical T and pT and between mammographic T and pT was respectively 42.2% and 48.9%. Radiotherapy was performed on breast and axilla in 52.4% and on breast alone in 47.6%. Follow-up (until 2 years) demonstrated: no local and/or axillary recurrence, and 2 distant relapses. Cosmetic results were good-excellent in 92.9% as functional in 98.2%. 7 patients who underwent axillary radiotherapy developed fibrosis needing physical therapy.

**Conclusions:** These preliminary data, justify superconservative surgery for patients with early breast cancer ( $T \leq 1.5$  cm) and clinically negative node status. The rationale for a minimally invasive treatment, allowing good cosmetic results, is the high percentage of ER+ cases, which benefit from antihormonal therapy, and the possibility of selecting the cases susceptible of chemotherapy through the prognosticators tested on the primary T. The