

and 4 second tumors developed during follow-up. Five-year actuarial overall, cause specific and breast-recurrence free survival is 94.6%, 100% and 90% respectively.

**Conclusion:** This study confirm that BCS and DR is an effective alternative to mastectomy in the treatment of DCIS of the breast.

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POSTER

### LYMPHEDEMA FOLLOWING CONSERVATIVE MANAGEMENT OF EARLY STAGE BREAST CANCER

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The risk of developing lymphedema after axillary dissection and radiation is lifelong. The reported incidence varies, but underrepresents mild or asymptomatic arm edema. We retrospectively analyzed 237 patient records for arm lymphedema (LE). 185 patients had available morbidity data and were free from axillary recurrence. Median f/u was 43 months. Patient complaints and examination with arm measurements were used to assess the LE, which was graded as mild, moderate, or severe.

The 5-yr actuarial incidence of LE is 28%. The incidence of developing mild LE was 23%, of moderate or severe LE, 7%. Of 38 events, 28 were mild, 9 moderate, and 1 severe. The 5-year actuarial incidence increased as the level of axillary dissection increased, and as the number of nodes sampled increased: no dissection performed (n = 46) 13%, Level 1 (n = 47) 27%, Level 2 (n = 56) 41%, Level 3 (n = 23) 30%. As it can be difficult to determine high axillary dissection levels retrospectively, arm morbidity was also assessed using the number of lymph nodes dissected. The 5-yr actuarial incidence of LE is: None (n = 46) 12%, 1-10 (n = 54) 29%, 11-20 (n = 65) 40%, > 20 (n = 20) 39% (P = 0.05). These differences were more marked in those patients receiving radiation to the axilla or supraclavicular fossa (n = 132): 61% and 53% for a level 2 and 3 dissection vs. 10% and 25% for no dissection or a level one dissection (P = 0.001).

Morbidity is reduced with a less extensive dissection of the axilla, especially if the patient receives adjuvant radiation to the axilla. The extent of the axillary dissection should be sufficient only to establish the risk of systemic disease.

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POSTER

### COLLIMATORS IN ASYMMETRIC MODE AND 3D PLANNING. APPLICATIONS IN BREAST CANCER

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**Introduction:** The possibility of use linear accelerators with two pairs of opposing collimators operating independently (asymmetric mode), allows beam modifications in habitual treatment planning. These modifications can be verified in 3D planning. We reported a variation in breast cancer treatment planning to avoid inhomogeneities at toracoclavicular fields' junction.

**Technique:** 1.—Patient positioned in an adjustable inclined plane to maintain the chest wall in line with the treatment couch. This position avoids collimator rotation in the tangential fields.

2.—Treatment planning in a conventional simulator or CT. The 3D dosimetry with multi-image CT display allows us to know dose distribution in the whole target volume.

3.—Treatment delivered using a LILAC with two pairs of asymmetric collimators and three isocentrics beams. The isocenter was at the junction beams.

(a) Superior longitudinal half beam in asymmetric mode, (with secondary field blocks to avoid humeral articulation) to treat the axillo-supraclavicular fosse.

(b) Inferiors longitudinal half beams in asymmetric mode, to cover the breast or the chest wall with two tangential fields. (i) They can be also in asymmetric mode in transversal collimator (a quarter of field) to avoid lung radiation.

**Conclusion:** Our dosymetric 3D study verifies the perfect dose homogeneity in treatment fields junction using collimators in asymmetric mode. This radiation technique allows to do diary treatment without moving the patient or the treatment couch. The progressive introduction of informatic control systems in treatment radiotherapy (performing collimators size, gantry angulation and other radiation parameters) makes easy to reproduce this technique diary.

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POSTER

### INTRAARTERIAL CHEMOTHERAPY (IAC) (MITOMYCIN-CISPLATIN) IN PATIENTS WITH LOCOREGIONAL (LRP) OF BREAST CANCER RESISTANT TO CONVENTIONAL THERAPIES

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Breast tumors with LRP present a great difficulty even for palliative control, when they are resistant to conventional treatments. IAC has been used in few occasions and bibliography reports do not clearly refer application timing and the real usefulness of the procedure. Since May 1991 to March 1995, 20 patients with breast cancer in LRP underwent 44 chemotherapy courses (range 1-6, average 2). All the patients were pre-treated; 20/20 systemic chemotherapy, 1 to 3 lines, none CDDP; 20/20 hormonotherapy and 18/20 radiotherapy. IAC was performed by femoral route according to Seldinger's method, selective catheterism of internal mammary artery. Of these patients 3/20 had metastatic disease at the start of the chemotherapy. Treatment plan was cisplatin 100 mg/m<sup>2</sup> and mitomycin 10 mg/m<sup>2</sup>, every 21-28 days with hydration and antiemetics. 3/20 patients had complete response, including 1 pathological complete response; 5/20 partial response greater than 50%; 7/20 with response minor than 50%; 2/20 stable disease and 3/20 progressive disease. Response duration ranged between 4 and 18 months. Two of the patients with complete remission are still alive (16-18 months) and free of disease. Complications related to the technique observed in the 44 courses performed were: wound hematoma and wound infection in 1 case each. No cases of severe neutropenia have recorded. **Conclusions:** IAC is a procedure with low morbidity; objective response was 40% in patients resistant to standard treatments. These results suggest that IAC may be used in earlier stages (SIII).

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POSTER

### THE EFFECTS OF PRIMARY CHEMOTHERAPY ON THE COMPLEXITY OF BREAST CANCER SURGICAL TREATMENT

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The goal of this trial is to analyse the effect of primary chemotherapy on the complexity of the surgical treatment of breast cancer. From Feb 1990 through Oct 1994, 233 patients with palpable early stage breast cancer (stages I, II and III UICC/AJC) diagnosed through needle biopsy, received pre-operative chemotherapy with Epirubicin (50 mg/m<sup>2</sup>), Cyclophosphamide (500 mg/m<sup>2</sup>) and 5-Fluorouracil (500 mg/m<sup>2</sup>) administered by IV infusion for 3 courses on 21 days cycles. The mean age of the group was 50.6 years (26-69). The response regarding clinical stage is summarized below.

Clinical Stage	Number of Patients (%)	CR (%)	Clinical response PR (%)	SD or PD (%)
I	27 (12)	12 (44)	11 (41)	4 (15)
II	98 (42)	13 (13)	56 (58)	29 (29)
III	108 (46)	7 (7)	81 (75)	20 (18)

With these results, 57 of the patients underwent less extent surgical treatment (41% QUART instead of radical mastectomy and 16% TART instead of QUART). No life-threatening complications were seen due to chemotherapy. The data demonstrate the feasibility of primary chemotherapy in early stage breast cancer, providing significant reduction in the extent of surgical treatment.

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POSTER

### INCIDENCE OF LYMPHOEDEMA AND IMPAIRED SHOULDER FUNCTION AFTER AXILLARY DISSECTION

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**Aim:** To assess the occurrence of lymphoedema and impaired shoulder function after axillary dissection, and to identify factors predicting these conditions. **Material:** 124 consecutive breast cancer patients, who had an axillary dissection a.m. Cady were invited for an examination median 17 months after the operation (range 14-20). They filled in a questionnaire about function and symptoms of the ipsilateral arm. At the day of examination circumference and function of the ipsilateral arm was compared with the contralateral arm. **Results:** Participation rate was 77% (95/124). Objective measurements disclosed lymphoedema in 6%, reduced flexion in 25%, reduced abduction in 21%, and reduced