

ug/mg protein, $p < 0.03$) than pain-free premenopausal women. After Zoladex and Tamoxifen treatment, pS2 levels fell, (both $p < 0.02$) and Apo D rose significantly ($p \leq 0.03$ and $p < 0.02$ respectively). Apo D and pS2 may prove useful intermediate markers of antioestrogen action in the breast. Zoladex = luteinising hormone releasing hormone analogue. Stats: Mann Whitney, Kruskal Wallis tests.

PP-1-23 Expression of Thymidine Phosphorylase in Mammary Carcinomas and its Relationship to Angiogenesis

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Human thymidine phosphorylase (dThdPase) activity is indispensable for the angiogenic activity of the platelet-derived endothelial cell growth factor. dThdPase has been reported to increase in some types of malignant tumor, and the role of dThdPase in the progression of tumors is unknown. In this study, we examined dThdPase expression and angiogenesis in 139 mammary carcinomas and 54 benign mammary disorders, using biochemical and immunohistochemical methods. dThdPase expression was much common in mammary carcinomas, compared with benign mammary disorders, and dThdPase expression of mammary carcinoma cells was correlated with microvessels density of stroma in mammary carcinomas of 3–4 cm in diameter, in p53 negative mammary carcinomas. In c-erbB-2 negative mammary carcinomas and in mammary carcinomas of premenopausal women.

PP-1-24 Prediction of the Effect Of 5'-Deoxy-5-Fluorouridine (5'-DFUR) by the Status of Angiogenic Enzyme Thymidine Phosphorylase Expression in Advanced Breast Cancer Patients

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5'-DFUR is known to appear antitumor activity through the conversion to 5-Fu by thymidine phosphorylase (TP). Recently, TP was demonstrated to be identical to angiogenic molecule PD-ECGF. The relationship between the clinical response of 5'-DFUR and TP/PD-ECGF expression was determined in 24 advanced breast cancer patients. 13 were TP/PD-ECGF positive and 11 were TP/PD-ECGF negative. In 13 TP/PD-ECGF positive patients, 4 showed objective response (OR) and 3 showed stable disease (SD) by 5'-DFUR, however only one case showed OR and no case showed SD in 11 TP/PD-ECGF negative patients, suggested that 5'-DFUR was likely to be effective for TP/PD-ECGF positive patients. An angiogenic enzyme TP/PD-ECGF expression might be a predictor of the effect of 5'-DFUR treatment in breast cancer.

PP-1-25 Subclinical Thyroid Dysfunction in Patients with Breast Cancer

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It has been recognized several syndromes of thyroid dysfunction in patients with solid malignancies. The aim of this study has been to evaluate the thyroid hormonal profile in breast cancer patients and to correlate the findings with stage of disease to know the usefulness as a potential prognostic factor. We have studied 33 patients with breast cancer (100% women; age: 49 ± 10 years) previously to any type of treatment. Ria was used to establish hormonal levels: T3 (normal range = $86-187$ ng/ml), T4 ($n.r. = 4.50-12.50$ mg/dl), TSH ($n.r. = 0.4-4.0$ mU/ml), rT3 ($n.r. = 20-50$ ng/dl) and TBG ($n.r. = 12.90-13.30$ mg/ml). Results are summarized as follows (mean \pm sd): T3 = 125.3 ± 48.5 ; T4 = 9.7 ± 4.8 ; TSH = 2.3 ± 4.5 ; rT3 = 53.4 ± 29.7 ; TBG = 23.7 ± 9.1 . The 37% of patients had a low T3 and the 35% of patients had increased rT3. Patients with hypoproteinemia and/or hypoalbuminemia show higher proportion of low T3 (60%) and/or increased rT3 (58%) ($p < 0.05$). TBG was not different in the groups. According with stage of disease, patients with local disease show low T3 (22%) and/or increased rT3 (25%) that were significantly different from those found in loco-regional disease (28% and 20%, respectively) or metastatic disease (48% and 60%, respectively). In conclusion: we have found a high proportion of low T3 syndrome

(euthyroid syndrome) and this feature was related with the progression of disease and decrease of proteins.

PP-1-26 Polymorphism of Estrogen Receptors from Primary Breast Cancers

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Altered (cloned) ERs are extremely abundant in breast cancer cytosols. Whether such a frequency have some biological relevance or is a biochemical artefact is unknown. Studied reported here analyse these questions. (1) To assess the frequency of altered ER in primary breast cancers, ER-positive samples (DCC assays) were submitted to hydroxylapatite (HAP) adsorption and immunohistochemical (ER1D5 MAb) assays. Our study relies on the observation that ER1D5 positivity and strong salt-adsorbed receptor to HAP relate to ER molecules with functional AB/C domains. In a series of 18 mammary tumors, HAP assays always reveal an absence of AB/C ER domains as reflected by a permanent low adsorption with 0.5 M KCl; on the contrary, presence of such domains was clearly demonstrated by nuclear immuno-staining (ER1D5) on tissue sections. Hence, apparent high frequency of cleaved ERs lacking N-terminal region in primary breast cancer cytosols seems to be a biochemical artefact due to proteolysis at the time of tissue processing and not an index of high amount of altered (variant) receptors in these tissues. Whether such a property also holds for metastases is unknown (such tumors are characterized by peculiar ERs without E2 binding affinity but recognized by anti-ER monoclonal antibodies and [³H] tamoxifen aziridine). (2) On the other hand, gel shift experiments suggested that E and/or F domains may impede the association of the C domain to [³²P] ERE: ER immunoprecipitation with H222 (epitope in E) increases the intensity of the radiolabeled band corresponding to ERE bound to A/BC domains (cleavage products).

PP-2. Surgical Aspects (September 11)

ORAL PRESENTATIONS

PP-2-1 Localisation of Impalpable Breast Lesions — A Surgical Approach

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The conventional approach to localisation of impalpable breast lesions employing a hooked wire with either stereotaxis or a perforated plate has potential disadvantages for the operating surgeon. Often the entry point of the wire lies some distance from the site of projection of the lesion on the skin. The guide-wire should pierce the skin at or close to the site of any proposed surgical incision and proceed along the shortest and most direct course towards the lesion. Ideally, the wire should lie within a radial distance of between 1 and 2 cm from its target. A method is described which achieves these objectives and involves both radiological and clinical measurements. A total of 665 guide-wire localised biopsies have been carried out at the above institutions over the periods 1-11-87 to 31-3-95² and 1-1-94 to 3-3-96¹. In only 4% of cases was re-positioning of the wire required. Excision of the radiological lesion was obtained with a single biopsy in 99% of cases. A second or third biopsy was indicated in 0.7% and 0.3% of cases respectively. Migration of the wire occurred in 2 patients and no cases of wire transection or pneumothorax were reported. This method of localisation facilitates subsequent excision and permits the most appropriate incision consistent with optimal cosmesis.

PP-2-2 A Prognostic Index for Breast Ductal Carcinoma in Situ (DCIS)

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We have developed a prognostic index (PI) for patients with DCIS utilizing three statistically significant predictors (by multivariate analysis) of local

recurrence. A score of 1 (best) to 3 (worst) was given for each of 3 predictors (tumor size, margin status, and pathologic classification). The scores were totaled to give an overall score ranging from 3 to 9.333 patients with DCIS treated with breast conservation therapy (BCT) seen from 1972–July 1995, were analysed; 195 of these patients were treated with excision only and 138 were treated with excision plus radiation therapy (RT). There was no statistical difference in the 8-yr. disease-free survival (DFS) in patients with a score of 3 or 4 regardless of whether or not they received RT (100% vs 97%). Patients with scores of 5, 6, or 7 received a statistically significant 17% DFS benefit when treated with RT (85% vs 68%) ($p = 0.02$). Patients with scores of 8 or 9, although showing the greatest relative benefit from RT (33% vs 0%), experienced local recurrence rates in excess of 60% at 6 years. Patients with DCIS and a PI score of 3 or 4 can be considered for treatment with excision only. Patients with intermediate scores (5, 6, or 7) benefit from RT if their breast is to be preserved. Patients with PI scores of 8 or 9 exhibit unacceptably high local recurrence rates and should be treated with mastectomy.

PP-2-3 Risk Factors and their Importance in Complications after Breast Surgery

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Purpose: To identify risk factors for postoperative complications after breast surgery.

Methods: From June 1994 to November 1995 187 patients underwent breast surgery for cancer. Forty three patients had mastectomy, 97 mastectomy with axillary dissection and 47 lumpectomy with axillary dissection. Age, bodymass index, alcohol and tobacco consumption, operative technique, duration of the operation, area of the wound surface and charge of the surgeon were recorded. Postoperative endpoints, i.e. seroma, number of seroma punctures required, hematoma/or rebleeding, infections, epidermolysis or skin necrosis were recorded. Statistical tests were multiple logistic regression analysis. Level of significance: 5%.

Results: Formation of seromas was significantly associated with increasing age ($p < 0.05$) and total drainage volume ($p < 0.05$). Haematomas were significantly associated with use of electrocautery rather than scalpel and/or scissors ($p < 0.05$). Infections were significantly associated with tobacco consumption ($p < 0.05$), low charge of the surgeon ($p < 0.05$) and the number of drainage days ($p < 0.01$). Epidermolysis was significantly associated with perioperative blood loss ($p < 0.05$) and intake of NSAID ($p < 0.05$). Skin necrosis was significantly associated with tobacco consumption ($p < 0.05$) and the presence of hematoma/or rebleeding ($p < 0.05$).

Conclusions: It is possible to identify risk factors related to breast cancer surgery, especially surgical technique and tobacco consumption.

PP-2-4 Diagnosis of Intramammary Recurrences of Breast Cancer after Conservative Treatment

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The prognosis of promptly treated recurrences in the conserved breast is excellent and thus every effort should be performed to achieve early detection of such events. The Authors describe the results of different diagnostic tests on a consecutive series of 143 intramammary relapses observed after conservative treatment, 1984 to 1994. Disease free interval after surgery was 3.7 years on the average (3.9 for patients receiving radiotherapy vs. 3.1 without). The patients have been followed-up on a regularly basis: clinical examination every 4 months in the first 2 years and every 6 months after, mammography annually; employing US and cytology only in cases of suspicious lesions. Clinical test, mammography, cytology and US suspected the recurrence in 75%, 64%, 81% and 77% of the cases, respectively. Mammographic false negatives were likely to be ascribed to the masking effect of surgical scars and distortion. Most failures at cytology were caused by inadequate sampling: when sampling was adequate, cytology exhibited the highest sensitivity (97%). In all, combined palpation + mammography, palpation + cytology, and palpation + mammography + cytology, diagnosed correctly 97%, 98%, and 100% of cases, respectively. Palpation should be always combined with mammography in the follow-up of the conserved breast, but US and aspiration cytology should be performed in case of every clinico-radiologic abnormality carrying even a minimal risk of recurrence.

PP-2-5 Immediate Breast Reconstruction after Mastectomy for Cancer

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Mastectomy (ME) with immediate breast reconstruction (IBR) has become an accepted procedure in the treatment of breast cancer. Between 1980 and 1994 79 IBR:s were performed in Malmö. Median age at operation was 50 years. Since 1985 IBR has been performed in 20% of mastectomies among patients ≤ 65 years. Median follow-up was 43 months. Oncological, surgical and cosmetic results and a patient questionnaire were evaluated.

18 patients had pure in situ carcinoma, 35 patients TNM stage I carcinomas and 15 TNM stage II, 9 of which were N+. The mamilla was removed in 67/79 patients. The most common indication for ME with IBR was extensive in situ carcinoma \pm multifocal invasive growth. 4 patients developed loco-regional recurrence. In 61 cases permanent implants were used and in 18 expanders. Median volume of the permanent implants was 225 ml compared with 380 ml in cases where expanders were used. 24% of the patients had postoperative complications such as hematoma (4 cases), infection (3 cases) and necrosis (4 cases). After introduction of the expander technique no necrosis requiring explantation has occurred. 85% of the patients with necrosis were smokers compared with 47% of the patients in the total material. 71% of the patients receiving radiotherapy (RT) developed capsular contracture. 63% of the patients had a satisfying or very satisfying cosmetic result. 8% were judged to have a Baker III-IV contracture. 74% were judged as soft compared to that 85% of the patients were satisfied with the softness of the reconstructed breast. 76% stated the result to be in accordance with their expectations.

We find IBR after ME a safe operation with results comparable to those after late reconstruction and without increased risk for recurrence. As the cosmetic results after RT are inferior in our study, IBR is not recommended in cases where RT may be necessary.

PP-2-6 Chest Wall Resection in 44 Patients with Recurrent Breast Cancer: Indications and Results

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Aim: To analyze the indication for and morbidity from CW resection for recurrent breast cancer in relation to survival.

Method: The clinico-pathological and outcome data were recorded from 44 pts, who underwent a CW resection for recurrent breast cancer. CW reconstruction consisted of steel wire ($n = 9$), vycril[®] ($n = 12$), Marlex[®] ($n = 20$). Soft tissues were closed primarily ($n = 10$), transposition of omentum ($n = 31$), the contralateral breast ($n = 30$), LD-flap ($n = 2$) and with split skin graft ($n = 28$).

Results: Mean age at primary diagnosis was 47 yrs and at CW resection 51 yrs. Overt distant disease was diagnosed in 27%. Previous therapy consists of mastectomy (all), radio- ($n = 39$), chemo- ($n = 10$), on hormonal therapy ($n = 4$). Complications were seen in 25% (omentum necrosis $n = 1$, infection $n = 7$, pulmonary $n = 8$). Thirty pts were rendered tumor free (no distant disease, tumor free margins): 18 had recurrence; one isolated local recurrence, 12 distant recurrence and 5 combined. The median survival was 8.9 yrs with an actuarial 5 yrs survival of 62%. After palliative resection in 14 pts, the median survival was 2.3 yrs and the 5 yrs actuarial survival 21%.

Conclusion: CW resection for recurrent breast cancer may result in a good local control with limited morbidity and a 5 yrs survival of 63% in completely resected and of 21% after palliation. This treatment option should always be considered in women with locally recurrent breast cancer.

PP-2-7 Pattern of Lymphatic Dissemination in Breast Cancer

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The aim of the study was to examine the hypothesis that lymphatic dissemination in breast cancer occurs in a sequential fashion. Twenty-two patients with clinically localized adenocarcinoma were studied. Patient blue dye was administered into the tumour at the beginning of modified radical mastectomy. In the removed specimen, blue stained lymphatic channels were dissected from the primary tumour to the first draining lymph nodes.