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Ductal carcinoma in situ (DCIS): A comparison of three local treatments in current practice

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Purpose: To evaluate locoregional and distant recurrence rates in DCIS according to the standard treatments used in six French Cancer Centers.

Methods: From 1985 to 1992, 560 women with pure DCIS were analysed, according to the three treatments applied: radical surgery (RS): 164; conservative surgery alone (CS): 117; conservative surgery and radiotherapy (CS + RT): 279. The median age was 53 years and the median follow-up 85 months.

Results: According to each treatment, we found:

	RS (164)	CS (117)	CS + RT (279)
Local rec. (in situ)	–	16	14
L.R. (invasive)	3	14	23
L.R. (total)	3 (1.8%)	30 (25.6%)	37 (13.3%)
Nodal rec.	–	3	5
Metastases	3	3	1

Conclusions: These data confirm previous reports concerning the results of mastectomy in DCIS. For both conservative approaches (CS and CS + RT) we found in our 396 out of trial patients almost exactly the same results as in the recently updated NSABP-17 Trial (26.8% and 12.1% of LR for CS and CS + RT groups respectively). We conclude that CS + RT is more beneficial than CS in DCIS treatment. A detailed analysis of LR risk factors (age, histologic subtype, method of detection, breast size, margins of resection) will be carried out later.

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DCIS 3-D reconstruction. A new appraisal of retroareolar and nipple involvment

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Purpose: To assess the retroareolar extension of DCIS in the different galactophoric trees (collecting ducts, lactiferous sinus and their different branchings), 3-D reconstruction was use, starting the process at the lactiferous end of the nipple where ducts are easily identified and numbered.

Material and Methods: A cone of fresh retroareolar tissue with the nipple was taken from 24 radical mastectomies done for large DCIS. The cone was frozen at −20° and sliced 1.5 mm thick perpendicular to the long axis from the nipple to the opposite aspect of the sample with an ordinary meat slicer. Slices were numbered, fixed in formalin and routinely processed. After histologic examnination, the different ducts of each slice were traced with a drawing tube, and all the foci of DCIS noted on each respective tracing paper. Finally the result was visualized by computer-assisted 3-D reconstruction. For comparaison purpose the same study was made with 15 radical mastectomies done for invasive cancer.

Results: Foci of DCIS were found in 18 (75%) cases, and 15 of them had only one galactophoric tree involved. In 2 cases, 2 trees were involved and in only one case 5 trees. Moreover in several cases 3-D study clearly displayed gaps of several mm long, free of DCIS along the ducts. It would have been impossible to dedect such gaps by ordinary histologic observation. Conversly only 3 (20%) of the 15 samples from invasive cancer had a single galactophoric tree involvment.

Conclusion: Retroareolar extension of DCIS is frequent in large lesions, but as Holland have already shown, DCIS is mostly monocentric (one galactophoric tree involved) and often discontinous along the ducts.

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Expression of tenascin-C in intraductal carcinoma of human breast: Relation to invasion

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Purpose: Tenascin-C (Tn-C) is an extracellular matrix glycoprotein that appears in areas of epithelial-mesenchymal interaction during foetal development and in neoplasia. We studied the immunohistochemical expression of Tn-C in 89 intraductal breast carcinomas (DCIS), our aim being to characterize the staining pattern and intensity of Tn-C and to relate the results to subtype, nuclear grade, and microinvasion.

Methods: 89 tumours of primary DCIS were reviewed for histology and nuclear grade. Tn-C was determined immunohistochemically using the monoclonal antibody 143BD7. Oestrogen (ER) and progesterone receptors (PR), and cell proliferation measured by Ki-67 expression had been determined earlier in the majority of the tumours.

Results: Periductal Tn-C was noted in 87%, it was weak in 26%, moderate in 33% and strong in 28%. Enhanced periductal expression was associated with comedo-type, nuclear grade, microinvasion, Ki-67 expression, and lack of PR. When Tn-C was encountered with microinvasion, it seemed to accompany the invading cells. Stromal expression was associated with moderate to strong periductal expression and microinvasion. The distribution of Tn-C was compared in DCIS and in the intraductal component from another series of small axillary node-negative invasive breast carcinomas (n = 44). Tn-C was present in the stroma of pure DCIS in 25% and in the intraductal component of the other series in 82%.

Conclusion: Stromal or moderate to strong periductal Tn-C expression in DCIS is related to early invasion. Tn-C may be of value in the identification of early invasion, in the evaluation of disease character and in determining the optimal treatment for patients with DCIS.

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Morphological and clinical characteristics of patients with ipsilateral recurrence after DCIS

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All cases of DCIS diagnosed 1987–1991 in the Southern Health Care Region of Sweden (1.5 millions inhabitants), were morphologically reevaluated and clinically followed for a median of 63 months (n = 306, median age 59). 61% had been treated with a breast conserving operation (BCO), 39% with mastectomy (ME). 22% had had postoperative radiotherapy (RT).

Results: 40 patients developed recurrences, 17 invasive and 23 DCIS. Two of these later got an invasive recurrence. Ipsilateral local recurrence free survival (RFS) was significantly better in the ME group than in the BCO group (5-year RFS 96% *vs.* 84%; $p < 0.001$). In the BCO group, RT improved RFS (5-year RFS 94% *vs.* 79%; $p = 0.003$). RFS was also better in the noncomedo subgroup (n = 90) compared to the comedo (n = 97); (5-year RFS 90% *vs.* 79%; $p = 0.018$). 94% of the local recurrences after BCO appeared in the previous operation area. Retrospective evaluation of margins was only possible in half of the cases.

Conclusion: In a population based clinical consequtive series of 306 DCIS cases, ipsilateral recurrences were more common after BCO than after ME, especially when no RT was given. Comedo lesions (nuclear grade III) were associated with a higher risk of recurrence. Inking of margins and large sectioning should be helpful in the assessment of resection margins.

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Ductal carcinoma in situ of the breast: Is breast conserving treatment feasible?

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Purpose: Multiple sections with ductal carcinoma in situ of the breast (DCIS) were examined and considered whether or not breast conserving treatment (BCT) is appropriate treatment for DCIS.

Patients and Methods: 40 cases with DCIS were examined. Extent of cancer defines grade I to IV as the presence of cancerous extension within 0.5, 2.5, 4.5 and 6.5 cm from the outer border of tumor, respectively. Subtypes of DCIS were classified as "comedo" or "noncomedo" subsets.

Results: Nine out of 40 patients (23%), extent of the cancer was classified as grade III. Among those nine cases, 67% (6/9) had extensive microcalcification on mammography. 29% (5/17) of the cases with a tumor size, i.e., 1.0 cm or less, showed grade III or greater. All tumors with a size of 1.1–2.0 cm showed grade II or lower, and 50% (4/8) of cases with a tumor size of 2.1 cm or more showed grade III or greater. 22% (2/9) of comedo and 23% (7/30) of noncomedo carcinomas showed grade III or greater.