



In Situ Breast Cancer (DCIS)

INTRODUCTION AND DEFINITION:

In situ breast cancer (DCIS) is, by definition, “non invasive”, and is regarded as an “early” localised form of breast disease in the transition to invasive cancer. The term was first described by Broders in 1932, recognising the pre-invasive nature of breast cancer and was accepted as a distinct pathological entity in 1946. However, the clinical relevance of the condition was established only in the last two decades owing to improved imaging techniques and greater pathological recognition of the disease. During the period 1993 to 1998 the number of women recorded with the diagnosis of DCIS in Australia increased by 80%.

The clinical significance of the DCIS lies in the proportion of women diagnosed with this condition who eventually develop invasive breast cancer, estimated at 4-12 twelve times great risk than the general public.

PATHOLOGY AND CLASSIFICATION:

Classified into low grade (papillary and cribriform) and high grade (solid and comedo), these sub-types represent a progression of disease related to the ductal cuboidal epithelium. DCIS is regarded as part of the graduation of disease from atypical ductal hyperplasia (ADH) to invasive cancer. Also known as “intraductal cancer”, the malignant ductal epithelial cells are confined to the ducts and have not extended through the basement membrane of the ducts into the surrounding tissues (invasive cancer). This classification is based on morphological features and is being challenged by recent molecular genetic studies which have shown the genetic changes in DCIS. Future classifications will reflect both morphological features and genetic alterations, linked to clinical outcomes.

25-70% of patients with DCIS develop invasive cancer in the ipsilateral breast during an interval of 5-10 years.

LOBULAR CANCER IN SITU (LCIS):

The term LCIS is a “misnomer” and the condition is not regarded as a true malignancy and should not be seen in the same category as DCIS. LCIS represents changes in the terminal duct lobular unit (TDLU) and tends to occur diffusely throughout the breast. The diagnosis is made coincidentally on breast biopsies, as there are no associated clinical or radiological abnormalities. LCIS is regarded as a “marker of risk”, rather than a true pathological precursor of invasive breast cancer. 20% of patients with LCIS develop invasive cancer over a period of 20 years, and half of these cases occur in the contralateral breast. 70% of invasive malignancies are ductal in nature rather than lobular.

IN SITU BREAST CANCER (DCIS) (CONT.)

DIAGNOSIS:

The diagnosis of high grade DCIS is suspected on mammographic findings, typically micro-calcification which is “casting” or “clustered” in nature. The diagnosis is supported especially by an “interval” change of the mammographic lesion. A small percentage of patients have a palpable lump or nipple discharge. Low grade DCIS is neither clinically or radiologically detectable in most cases, and is usually an incidental finding on breast biopsies.

Image-guided core biopsy is the recommended diagnostic method in DCIS. Occasionally an “open” biopsy is required, performed with pre-operative mammographic localisation and specimen radiograph. Cytology (FNAB) cannot differentiate invasive from in situ disease.

TREATMENT:

A multi-disciplinary approach to the management of women with DCIS is required. The team includes the following disciplines: Radiologist, Pathologist, Surgeon, Radiation Oncologist, General Practitioner and Social Worker.

The aim of the surgical treatment for DCIS is to ensure complete excision of the lesion, with the best possible cosmetic result. Breast conservation surgery is usual, but extensive/multicentric DCIS may require a mastectomy. Stereotactic large, core biopsy techniques (eg. ABB1) are probably insufficient as a definitive form of excision biopsy, based on all the available scientific evidence, and currently these techniques are recommended for diagnostic purposes only.

The surgery for DCIS requires close collaboration between the Surgeon, Radiologist and Pathologist. Crucial aspects of the procedure include the pre-operative mammographic localisation, specimen radiograph and the orientation of the resected specimen for histopathology.

The achievement of clear histological margins of excision is central to the surgical treatment of DCIS. In the event of a local recurrence of disease occurring, 50% of these patients present with invasive cancer, with the associated risk of systemic disease for a condition which was in the first instance non-invasive.

RADIATION TREATMENT (DXR):

Adjuvant DXR is required for high grade DCIS, and will reduce the risk of local recurrence of disease by 50% (15-7%) according to two studies (NSABP-B17 protocol and EORTIC study).

Surgery alone may suffice in low grade DCIS. However, it has been proven that DXR will reduce the risk of subsequent invasive and in situ recurrence for all women with DCIS regardless of the grade and pathological subgroup of DCIS.

Tamoxifen may provide prophylactic benefit in these patients reducing the risk of further neoplasia. However, the data is inconclusive (NSABP-B24 and IBIS studies).

IN SITU BREAST CANCER (DCIS) (CONT.)

SURVEILLANCE:

Annual mammography and regular clinical review is required in the longterm owing to the patient's additional relative risk for the development of a new primary breast cancer.

CONCLUSION:

DCIS is an early form of breast cancer, non invasive, and has an excellent prognosis with adequate surgery and appropriate adjuvant therapy.