INVASIVE LOBULAR CARCINOMA OF THE BREAST

by

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The classical pattern of invasive lobular carcinoma (ILC) has become well established since the tumour was first designated in the 1940's. It is a distinct histological type of breast cancer, yet the incidence rates accumulated from the literature are widely divergent and vary from 0.7-20 per cent, suggesting the criteria for diagnosis are not well defined. Martinez and Azzopardi in the only series reported from the United Kingdom studied in detail the histological criteria for diagnosis and discussed and illustrated the recently described rarer variants. This study, and the problems of management posed by lobular carcinoma, encouraged us to review a consecutive series of invasive breast carcinomas from our records presenting during 1979. The incidence of ILC, with and without the in situ lesion, was assessed, the rarer variants of the tumour were sought and some of the problems presented by this diagnosis considered.

MATERIALS AND METHODS

The material studied comprised 298 consecutive invasive carcinomas of the female breast in a Caucasian population presenting during the year 1979. Five carcinomas diagnosed on needle biopsy and without a subsequent mastectomy specimen were excluded on the basis of inadequate tissue for classification. This left 293 invasive carcinomas in the series diagnosed on either a local excision (lumpectomy) or a mastectomy specimen. Lumpectomy specimens were adequately sampled for diagnosis (average 5.2 blocks per case). They were retained in the series, as their exclusion would have removed patients in the eighth and ninth decades of life, often preferentially treated by local excision of the tumour.

In the carcinomas reviewed the classical pattern of ILC was easily recognised, and separated from invasive duct carcinoma (IDC). Its incidence along with the co-existing in situ lesion was assessed, and the variants summarised and illustrated by Martinez and Azzopardi were sought.

RESULTS

The review of 293 invasive breast carcinomas identified 34 lobular carcinomas (11.6 per cent), 254 duct carcinomas (86.7 per cent) and five carcinomas which could not be classified (1.7 per cent). The duct carcinomas were not further separated.

In four of the lobular carcinomas, variant pattern dominated; two tumours had a solid pattern with sheets of confluent uniform cells and sparse hyalinised stroma and two were tubulolobular in pattern with small open and solid tubules
in a targetoid arrangement. Variant patterns more limited in extent were not unusual in the 30 invasive lobular carcinomas with classical histology. They included two tumours with small foci of closed and open tubules, two tumours with an alveolar arrangement, one tumour with signet-ring cell carcinoma and one tumour with a solid area containing ill-defined clumps of cells. These variations in pattern did not create any diagnostic difficulties, but their recognition is relatively recent.

The in situ lesion of lobular carcinoma involving either lobules or ducts or both was associated with 33 of all carcinomas examined (11.4 per cent). Lobular carcinoma in situ (LCIS) occurred in 28 of the 34 lobular carcinomas (79.1 per cent) and in six of the 254 duct carcinomas (2.4 per cent). In the four lobular carcinomas dominated by variant patterns, in situ lesions were present in one of the solid and two of the tubulolobular carcinomas.

Lymph nodes were available from 17 cases of ILC. In eight cases the lymph nodes contained metastases which maintained a small dissociated cell pattern without sclerosis or structure formation. A tubulolobular carcinoma with lymph node metastases had the same histology as classical ILC.

DISCUSSION

Classical ILC has distinctive morphology with a small cell infiltrating pattern in a targetoid arrangement around uninvolved ducts. Associated LCIS involving lobules or ducts or both may occur with all types of invasive breast carcinoma, but its predominant association with ILC is a useful indication of type.

In this series 11.6 per cent of the invasive breast carcinomas were infiltrating lobular in type, and LCIS co-existed in 79.1 per cent of the tumours. The in situ lesion was not confined to lobular carcinoma and 2.4 per cent of the infiltrating duct carcinomas had concurrent LCIS. While the incidence of ILC is lower than the 14.7 per cent found in the other comparable United Kingdom series, the concurrent incidence of LCIS is almost identical and supports the validity of the diagnosis.

The divergent incident rates of ILC reported from comparable recent series mainly originating in the USA are unlikely to be due to racial or geographic differences, and the lack of established criteria for diagnosis and failure to recognise the recently described variants are more important factors. With the now better definition of the histological spectrum of ILC incident rates should become more uniform.

Four variant forms of ILC occurred, two dominated by the solid pattern of Fechner and two by the tubulolobular carcinoma described by Fisher and associates. Co-existing LCIS in the tubulolobular carcinomas and in one of the solid tumours was a useful aid in diagnosis. It is unlikely these variants would have been recognised and included in series of infiltrating lobular carcinomas prior to these reports. While ILC dominated by solid and tubulolobular patterns is rare it is not unusual for some minor variation in pattern to occur in association
with the classical histology. If as has recently been suggested \(^3\), \(^4\) variant patterns represent differentiation in ILC and possibly a better prognosis their recognition may be useful.

Cases of ILC present over a wide age range, but an unusually high predominance of patients was found in the later decades (Table) and also a high mean age of 61 years. This is almost ten years older than the mean age 52.6 years of several series taken together,\(^2\) but the tumours in the older age range continue to have concomitant LCIS. The two patients in the ninth decade both had LCIS accompanying the invasive lobular carcinoma and extension of the malignancy into this decade has previously been reported.\(^5\)

The identification of an invasive breast carcinoma as lobular in type has some practical importance in predicting the response of metastatic disease to endocrine manipulation. A high proportion (85-90 per cent) \(^6\), \(^7\) of infiltrating lobular carcinomas are oestrogen receptor positive, and in the absence of tissue assay the histological type of the tumour provides strong presumptive evidence of a positive status which relates to regression with endocrine therapy.

The bilaterality of ILC and its preceding lesion, LCIS, is well recognised, and 26-30 per cent of infiltrating lobular carcinomas are associated with subsequent invasive carcinoma, usually lobular in type, in the contralateral breast. \(^8\) \(^9\) More recently, a report describes 30 cases of ILC with a 16.6 per cent incidence of subsequent invasive carcinoma in the opposite breast in a minimum follow-up of four years.\(^1\) Since 11.6 per cent of invasive carcinomas in this series are lobular in type, the diagnosis poses a considerable problem if supervision is to detect a possible contralateral carcinoma at its earliest stage and before metastases have occurred and thus ensure the lowest possible mortality. This problem of clinical management is greatly magnified if the whole spectrum of lobular carcinoma is considered. The in situ lesion which does not by itself produce a tumour nodule\(^10\) is being increasingly recognised on histological examination as an incidental finding in breast tissue usually excited for fibrocystic disease (diffuse fibroadenosis). It identifies a further group of patients having a future risk of invasive breast carcinoma seven to 12 times greater than a normal population of women.\(^11\) Since the risk is known to be equal in both breasts ipsilateral mastectomy, the usual treatment prior to 1975, is no longer acceptable and a conservative policy of management is replacing surgery.

The diagnosis, therefore, of ILC and/or its preceding in situ lesion indicates a potential bilateral breast malignancy extending over a wide age span, which creates a formidable problem of follow-up both for the clinician in charge and the patient, to detect subsequent invasive cancer at its earliest possible stage.

| Age     | <40 | 40-49 | 50-59 | 60-69 | 70-79 | >80 |
|---------|-----|-------|-------|-------|-------|-----|
| Number of patients | 0   | 6     | 9     | 10    | 7     | 2   |

Table — Age range of 34 patients with invasive lobular carcinoma of the breast.
SUMMARY

Thirty-four invasive lobular carcinomas, including four tumours with variant patterns, were found in a review of 293 consecutive invasive breast carcinomas, an incidence of 11.6 per cent. The in situ lesion was associated with 79 per cent of the tumours. The recognition of this type of breast carcinoma, with its long-term bilateral risk, poses considerable problems in follow-up, both for the clinician and the patient.

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