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CASE REPORT

Apocrine Differentiation in Invasive Pleomorphic Lobular Carcinoma with In Situ Ductal and Lobular Apocrine Carcinoma: Case Report

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Invasive pleomorphic lobular carcinoma (PLC) is a distinctive aggressive subtype of invasive lobular carcinomas (ILC). We report one case of PLC with in situ PLC and ductal carcinoma in situ with apocrine features. (Pathology Oncology Research Vol 8, No 2, 151–152, 2002)

Keywords: lobular carcinoma, pleomorphic lobular carcinoma, apocrine differentiation

Introduction

Invasive pleomorphic lobular carcinoma (PLC) is a distinctive aggressive subtype of invasive lobular carcinomas (ILC). PLC have the typical infiltrating pattern of classical ILC of diffuse single cell spread but the nuclei are more pleomorphic. We present a case of PLC with in situ PLC and ductal carcinoma in situ with apocrine features. The recognition of this variant is very significant as it presents a more aggressive behaviour than the classical type.

Case Report

A 68 year old woman presented with a lesion on the right breast that has been first noted 4 months ago. Physical examination revealed a discrete mass in central location of the right breast. Mammography showed a high density mass of 3 cm in diameter with spicular borders which caused slight skin retraction. Ultrasound examination showed a mass of 3.6x2.9 mm in size with ill defined margins. The mass showed a marked posterior acustic shadow. The US and mammography findings were typical for a malign lesion. Fine needle aspiration biopsy of the mass revealed positive carcinoma. She underwent a right modified radical mastectomy with axillary dissection.

On gross examination, the specimen measured 30 cm x 20 cm x 6 cm with 16 cm x 6 cm epidermis and nipple. On the cut surface of the breast there was a 4 cm x 3 cm ill-circumscribed tumoral lesion with extensive fibrosis.

Histomorphologic analysis of the tumor cells had a recognized classic indian file and targetoid pattern of lobular carcinoma infiltration with a predominant population of discohesive pleomorphic cells (*Figure 1*). Individual tumor cells were large, globoid, with eccentric hyperchromatic nuclei and irregular contours. Their cell cytoplasms were abundant eosinophilic, vacuolated, foamy. Extensive in situ PLC and classic type of lobular carcinoma in situ with ductal carcinoma in situ were identified. Tubule formation was not identified in the specimens examined. Although axillary lymph node metastases were not found there was lymphatic vessel invasion in the tumor. Nearly 40% of the tumor cells both in invasive and in situ components were immunoreactive with GCDFP15. Both estrogen receptor (ER) and progesterone receptor (PR) immunoexpression were positive in less than 5% of the tumor cells.

Discussion

Apocrine carcinomas of the breast are generally regarded as morphologic variants of invasive ductal carcinomas. However apocrine differentiation also occurs in lobular carcinomas, an occurence documented in both in situ and invasive lobular tumors. Eusebi et al, reported 10 cases of PLC with apocrine differentition in a range between 10% and 80% of the neoplastic cells.[2]

In a recent report, in s tu PLC was identified in less than half of the patients with PLC.[4] The present case demon-

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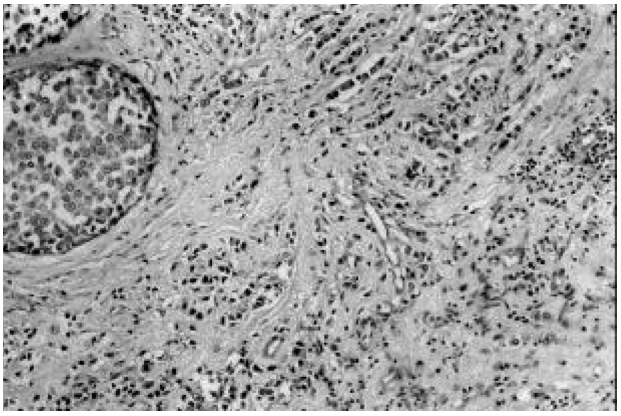

Figure 1. *Classic indian file pattern of pleomorphic lobular carcinoma with lobular carcinoma in situ (H&E x20).*

strated many lobules distended by large discohesive cells with pleomorphic nuclei. The in situ PLC tumor cells were identical to the invasive component with abundant, eosinophilic, faintly granular, foamy or vacuolated cytoplasm. Beside the in situ PLC, classic type lobular carcinoma in situ and ductal carcinoma in situ foci were identified.

The incidence of apocrine carcinoma seen in general practice ranges from 1% to 37%.[3] GCDFP 15 is stored in the vesicles of the eosinophilic and foamy cells. The gene coding for this protein has been localised to the long arm of chromosome 7. We demonstrated immunoreactivity with GCDFP-15 in both invasive and in situ components of the tumor.

The differential diagnosis of PLC includes oncocytic carcinoma, histiocytic carcinoma, signet ring carcinoma, lipid rich carcinoma, granular cell tumor, and chemotherapeutic effect. Oncocytic carcinoma, histiocytic carcinoma, signet ring carcinoma and granular cell tumor share similar morphologic fetures at the hematoxylin and eosin level as abundant granular eosinophilic cytoplasm. Oncocytic carcinoma differs from PLC at the ultrastructural level with numerous mitochondria in the cytoplasm and negative immunostaining with GCDFP15. Histiocytoid carcinoma and signet ring carcinoma differs with very small inactive nuclei from PLC. Immunohistochemical profile of granular cell tumor is negative for keratin, EMA, GCDFP15 and S-100 protein allowing distinction from PLC.[1] Lipid rich carcinoma differs from PLC with abundant neutral fat witin the cytoplasms of the tumor cells. Granular, vacuolated cytoplasm with enlarged multilobulated hyperchromatic nuclei are also a finding in chemotherapeutic effect. However these findings are commonly associated with coexisting lobular atrophy and fibrous stromal involution which will not exhibit one of the recognized patterns of infitration of PLC. Immunohistochemical analysis of pleomorphic lobular carcinoma has showed higher expression of p53, Her-2 and chromogranin, and lower expression of ER and PR.5 We also revealed very low levels of ER and PR immunoexpression in the present case. Loss of heterozygosity was investigated at the ER, p53, Her-2, and BRCA 1 loci.[4] Expression of the unfavorable prognostic markers confirms the potentially aggressive course of the tumor.

The recognition of this variant is very significant as it presents a more aggressive behaviour than the classical type and can be confused with invasive ductal carcinoma especially when it has a DCIS foci, as has the present case.

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