Pleomorphic lobular carcinoma of the breast:
Brief communication

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Some invasive lobular carcinomas of the breast have cells that are more pleomorphic. A 70 years old woman with left breast and axillary mass was operated. The tumor composed of very large cells with eosinophilic cytoplasm and pleomorphic nuclei. Some cells contained intracytoplasmic lumina and Periodic acid-Schiff positive globules. Since pleomorphic lobular carcinoma (PLC) is reported as a very aggressive tumor and the grading of lobular carcinoma is difficult, recognition of the pleomorphic subtype is useful in identifying a lethal variant.


Key words: Pleomorphic lobular carcinoma, breast

Case Report

A 70 years old woman with left breast and axillary mass was operated. A large excision and axillary dissection were performed. The specimen did not contain nipple. In the macroscopical serial sections, a mass that is five cm in diameter was located under the skin at a distance of 1.2 cm. The border of the tumor was irregular and the remaining breast tissue showed areas of fibrocystic disease. Twenty-three lymph nodes were dissected from the axillary region. The tumor cells observed in microscopical slides were dissociated, linear, and in a single file pattern (Figure 1). The tumor composed of very large -some huge- cells with eosinophilic cytoplasm and pleomorphic nuclei. Some cells contained intracytoplasmic lumina and a concentrated eosinophilic intracytoplasmic material (Figure 2). Some cells with an eosinophilic, slightly granular cytoplasm suggested the possibility of apocrine differentiation. We could not perform immunohistochemical methods for the apocrine features. Mucicarmen stain and Periodic acid-Schiff (PAS) stain were performed. There was no staining with mucicarmen stain. Intracytoplasmic eosinophilic material was shown to be PAS positive. We did not note any tubule formation and the mitosis was scarce. There was moderate amount of lymphocyte infiltration in the stroma. Periductal hyalinosis was significant. Twelve of the 23 lymph nodes were metastatic. There was also perinodal infiltration.
Fig 1. Dissociated tumor cells observed in linear, and in a single file pattern (H&E, x200)

Fig 2. Very large -some huge- cells with eosinophilic cytoplasm and pleomorphic nuclei. Arrow: Intracytoplasmic lumina and a concentrated eosinophilic intracytoplasmic material (H&E, x400)
Discussion

Infiltrating lobular carcinoma (ILC) of the classical type is a well recognized entity; less well appreciated is a group of variant forms of ILC, which includes solid, alveolar, mixed, apocrine, signet-ring, histiocytoid, and tubulolobular variants (1). Some invasive lobular carcinomas consist entirely or in part of cells with relatively abundant, eosinophilic cytoplasm (2). There is a difference in the cellular morphology. The cells are more pleomorphic, sometimes with apocrine or histiocytoid features. The typical pattern of infiltration and lack of cellular cohesion, however, indicate that these lesions are of lobular type (3). The nucleus in these cells tends to be hyperchromatic and eccentric, sometimes creating a plasmacytoid appearance. These cells have been referred as myoid, histiocytoid, and pleomorphic lobular carcinoma (PLC) variously (2). The atypical cells sometimes display numerous intracytoplasmic lumens and a tendency to form irregular aggregates. Intracytoplasmic lumens contain a targetoid eosinophilic secretion; this should not be mistaken for signet ring cells, which may be seen as a pattern of differentiation within invasive lobular carcinoma (4). Perineural invasion and lymphatic tumor emboli are also rarely found in this type of carcinoma (2).

Eusebi et al. (5) emphasized the presence of apocrine differentiation in pleomorphic invasive lobular carcinoma and concluded that these patients have especially aggressive clinical course because nine of 10 patients in their series developed recurrences. Each of these nine patients had nodal metastases at the time of diagnosis. Weidner and Semple (1) found that patients who had the pleomorphic variant of invasive lobular carcinoma had a significantly worse recurrence free survival rate than those with classic invasive lobular carcinoma. Bentz et al. (6), in their series of 12 cases, also found that nine of 11 patients were fatal with adequate follow-up. This was worse than either infiltrating ductal carcinoma or classical infiltrating lobular carcinoma, even when stratified by axillary lymph node status. Among the fatal cases, the median survival time was 2.1 years, shorter than that for classical lobular, but not ductal carcinoma. PLC was also reported as a component of some combined breast carcinomas: with histiocytoid breast carcinoma and with classical, solid and signet ring cell variant (7,8). Most PLCs lacked oestrogen (ER) and progesterone receptors (PgR) and stained with an antibody to gross cystic disease fluid protein-15 (GCDFP-15) suggesting the presence of apocrine differentiation (6). Besides ER and PgR, higher expression of chromogranin and p53 protein in comparison with classical lobular carcinomas were also indicated. Determination of p53 overexpression and reduced or absent expression of ER and PgR were supposed to predict the behaviour of this variant of lobular carcinoma (9).

In this case, we report a rare variant of lobular carcinoma having features that may overlap with those of infiltrating ductal carcinoma. The infiltration pattern and intracytoplasmic PAS positive globulles made us diagnose the case as "pleomorphic variant of lobular carcinoma". Since PLC is reported as a very aggressive tumor and the grading of lobular carcinoma is difficult, recognition of the pleomorphic subtype is useful in identifying a lethal variant.
References