PLEOMORPHIC ADENOMA OF THE BREAST IN A YOUNG WOMAN

- Case Report

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Abstract

Pleomorphic adenoma (PA), also known as benign mixed tumor, accounts for 45% to 74% of all major and minor salivary gland tumors¹ and has been reported in other, less common sites such as the paranasal sinuses, larynx, palate, and nasal septum.²³. It also occurs in the skin, where it is more commonly known as chondroid syringoma. It occurs less frequently in the human breast, however. Since the first case report by Lecene² in 1906, 68 cases of PA of the human breast (PAB) have been documented in the world medical literature. This is not surprising given
that the breast is a modified sweat gland(4) that shares with its skin and salivary gland counterparts an embryologic origin from the same ectodermal layer.(5)

As it is a rare benign tumor, pleomorphic adenoma of the breast has been mistaken for a malignant tumor clinically, mammographically, cytologically, and even by frozen section(6). Thus, an awareness of this disease in the breast will help to prevent misdiagnosis and overaggressive surgery. This article describes clinical features and histological findings in a case of pleomorphic adenoma in the breast that was thought clinically to be a fibroadenoma.

The patient, I. A. is a 32yr old para 2+0 who presented to the surgeon with a unilateral painless mobile left breast mass. A clinical diagnosis of fibroadenoma was made and the mass excised and sent for histopathological confirmation.

Keywords: Pleomorphic adenoma of the breast, Benign mixed tumour, Chondroid syringoma, Modified sweat glands, Young woman.

MATERIALS AND METHODS

Routine hematoxylin-eosin sections were prepared from formalin-fixed representative samples of the mass.

PATHOLOGICAL FINDINGS

On the receipt of the mass in pathology, a small well delineated ovoid, pearl grey coloured, firm but non encapsulated and rubbery mass measuring 2.5x2.3x2.2 cm was noted. Cut sections appear cartilaginous and solid. No necrosis or areas of haemorrhage are noted (Photograph 1)
On histopathological examination of routine Haematoxylin and Eosin stained sections, a benign tumour composed of epithelial and myoepithelial cellular elements in a myxoid background was noted with seemingly infiltrative margins but no cellular atypia or abnormal mitoses are noted. The mass was not encapsulated and the stroma was bland. A pathological diagnosis of pleomorphic adenoma was made, with differentials of phylloides tumour, myoepithelial carcinoma and metaplastic carcinoma. Pleomorphic adenoma of the breast (PAB) is most commonly seen in postmenopausal women and is characterized by an admixture of epithelial and myoepithelial cells embedded in abundant myxomatous stroma (2,3,7). Its clinical and histologic appearance can be challenging and may lead to a misdiagnosis of invasive carcinoma. Photographs 2 and 3 show the hallmark histological features of this tumour with the presence of both but haphazardly arranged epithelial and myoepithelial components of the seemingly infiltrating nests in a navy blue myxoid background stroma. Cellular pleomorphism is absent and mitotic figures are few.
Photograph 3

DISCUSSION

Pleomorphic adenoma of the breast (PAB) is a rare neoplasm and occurs commonly in middle aged and elderly postmenopausal patients, like other breast tumours it has a male to female ratio of about 1:10. It exhibits the classical histological pattern seen in the salivary glands with the presence of tongues of both epithelial and myoepithelial cells apparently infiltrating the myxomatous stroma which may also exhibit areas of chondroid or osseous tissues(8, 9). It will typically develop in the subareolar region of the breast (below the nipple). However, pleomorphic adenomas are not as clearly benign as other breast adenomas, and in some instances will develop into low grade breast carcinomas(9).

It usually runs a benign clinical course although carcinomas have rarely been discovered arising from seemingly benign tumours. It can easily be confused with a malignant tumour by the unwary or inexperienced because of its apparent infiltrative margins with disastrous consequences in management(10). The presence of two types of cells distinguishes it from a mucinous carcinoma which consists of only one type of ductal epithelium. It can also be distinguished from a regular fibroadenoma which is usually well circumscribed, does not exhibit apparent infiltrative margins and is also usually well encapsulated. The presence of myxochondroid matrix distinguishes it from a myoepithelial carcinoma which lacks such a stroma(11). The way to go is when in doubt, give the patient the benefit of the doubt especially considering the gross findings and young age of the patient like in this case. A local wide
excision is usually curative, but it may recur after excision or transform to a malignant carcinoma ex pleomorphic adenoma(12). Pleomorphic, or 'salivary gland-like' tumors actually present in two variations with an important distinction: whether or not there is evidence of 'myoepithelial differentiation'(13,14). The term 'differentiation' can be taken in the context of genetics, and a well-differentiated cell is one which forms and functions into the type of cell or gland that it was supposed to. However it is sometimes also used to describe a 'unique' or 'differentiated' aspect of a tumor, within a general category, and that is the case here. A pleomorphic adenoma with myoepithelial differentiation is one in which there is a layer of myoepithelial cells present. Pleomorphic adenomas with myoepithelial differentiation are benign, and the conditions is sometimes referred to as 'benign myoepithelioma'. But other pleomorphic adenomas, with myoepithelial differentiation can develop into low grade carcinomas such as adenomyoepithelioma, adenoid cystic carcinoma, and adenosquamous carcinoma(15,16). As with all breast adenomas, there remains the small possibility that carcinoma could be developing secondarily in the background of a pre-existent benign pleomorphic adenoma. If this occurs, it is termed 'carcinoma ex pleomorphic adenoma'. It is not yet understood why this happens, or which pleomorphic adenoma cells are prone to malignant transformation. Rare cases of higher grade malignant myoepithelioma have also been reported. Pleomorphic adenomas which are not 'differentiated' by a layer of myoepithelial cells are thought to be of a higher risk for malignancy, though some of these sub-categories of breast cancer have only recently been recognized. Undifferentiated myoepithelial pleomorphic carcinomas include acinic cell breast carcinoma, oncocytic breast carcinoma, and mucoepidermoid breast carcinoma, which is very rare(16). Thus, pathologists and clinicians need to be aware of this uncommon lesion, its myriad and somewhat deceptive clinical and mammographic features, and its variable histologic appearance, which may mimic malignancy. Immunohistochemical studies and special stains should serve as adjunctive tools to facilitate diagnosis in especially difficult cases. Because of the age of the patients, the risk of recurrence, and the possibility of multifocal disease (deceptively hidden in intraductal papillomatosis), a close clinical follow-up is warranted once a diagnosis of PAB is made.

References


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