Breast Pathology: Risk of Underdiagnosis in Breast Pathology:

Case 4: Presented by Alena Skalova, MD

Clinical History

53-year-old woman with no remarkable medical history presented with painful left breast mass that had enlarged during the past year. Physical examination revealed a palpable, large, ill-defined lesion in the central area of left breast. No nipple discharge was noted. Surgical excision specimen consisted of 7x 5.5x 2.5 cm fibrofatty tissue with ill-defined irregular pink-tan area that extended to the surgical margins and contained many microcystic spaces and dilated ducts filled with viscous, translucent mucoid material.

Histologically, the lesion was characterized by multiple cystic structures that contained abundant eosinophilic, PAS-positive secretory material resembling thyroid colloid. The cysts were lined by flattened epithelium with focal micropapillary proliferations. Some epithelial cell revealed large polymorphic nuclei and distinctive large nucleoli, but the overall appearance was bland, and myoepithelial layer adjacent to proliferating epithelium was intact.

Diagnosis
Cystic hypersecretory duct carcinoma of the breast

Discussion

Cystic hypersecretory duct carcinoma (CHDC) is a distinct, rare form of ductal carcinoma in situ of the breast first described by Rosen and Scott in 1984 (1). The usual clinical presentation of CHDC is a large, palpable mass with localized pain and, rarely, nipple discharge (2). These lesions are characterized by the presence of variably sized cysts containing homogeneous, gelatinous eosinophilic secretory product reminiscent of thyroid colloid, and by micropapillary intraductal carcinoma occurring within some, but not all of these cysts. Despite overall bland morphology, CHDC has potential for aggressive invasive growth and distant metastases (3).

Differential diagnosis of CHDC includes benign cystic intraductal lesions, such as fibrocystic disease, mucocele-like lesions (4) and juvenile papilomatosis (5). The multicystic
appearance and often bland cytological features of CHDC can cause underdiagnosis of benign fibrocystic changes. Cysts may occur in various ductal proliferative lesions, but are not associated with micropapillary epithelial protrusions with atypias seen in CHDC. Moreover, colloid-like secretory material is not seen in fibrocystic disease. Juvenile papillomatosis closely resembles CHDC grossly; however, it is more complex histologically with foci of sclerosing adenosis, papillomas, apocrine change and myoepithelial cell proliferations (5). This combination of features particularly in young patients argues against diagnosis of CHDC. Recently described mucocele-like lesions of the breast (4) are also included in differential diagnosis. The may be composed of multiple cysts lined by cytologically uniform bland flat epithelium with only focal micropapillary intraductal hyperplasia and leakage of secretory material into the stroma. In contrast to CHDC, mucocele-like tumors of the breast are characterized by coarse intraluminal microcalcifications and by lack of colloid-like secretions.

In summary, CHDC of the breast is a rare distinctive variant of ductal carcinoma in situ that behaves in a low-grade fashion for many years but nevertheless has potential for invasive growth and development of distant metastases (3,6). Underdiagnosis of CHDC as a benign lesion is a recognized phenomenon (3,6) and should be avoided by extensive sampling of the lesions.

Selected References
