NYU Langone Health

DEPARTMENT OF PATHOLOGY

Case of the Week

Breast Pathology: Fibrocystic Change, Proliferative Type, Including Sclerosing Adenosis, Associated With Microcalcifications and Microglandular Adenosis

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History

The patient is a 49-year-old Caucasian female who presents to the breast surgery department following a non-diagnostic fine needle aspiration of right breast microcalcifications. Previous mammography showed areas of clustered microcalcifications spanning 2 x 1 x 0.5 cm. Due to radiologic-pathologic discordance, a segmental excision with needle localization was performed. The past surgical history is notable for a prior benign breast biopsy 10 years prior and a family history of breast cancer.

Gross pathologic examination revealed no discrete mass with a 0.2 x 0.2 cm hemorrhagic area adjacent to the clip site.

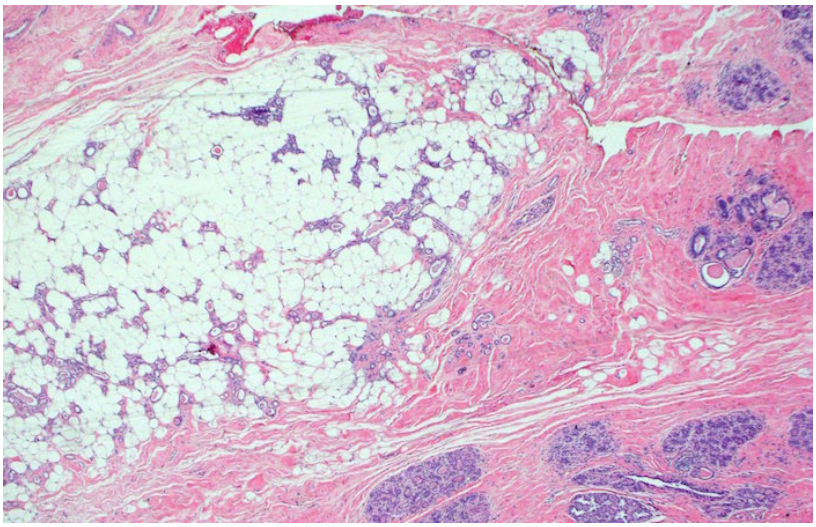

Figure 1: Segmental excision of the breast showing glandular structures infiltrating adipose tissue. (H&E, 40X magnification)

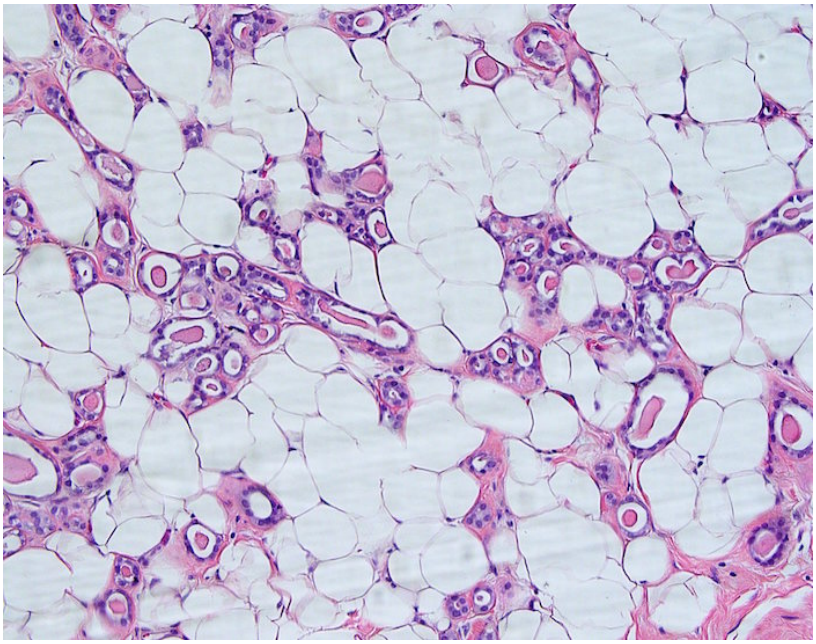

Figure 2: Infiltrating tubular structures with open and round lumina containing eosinophilic secretions. The tubules are lined by a monolayer of ductal cells (H&E, 400X magnification)

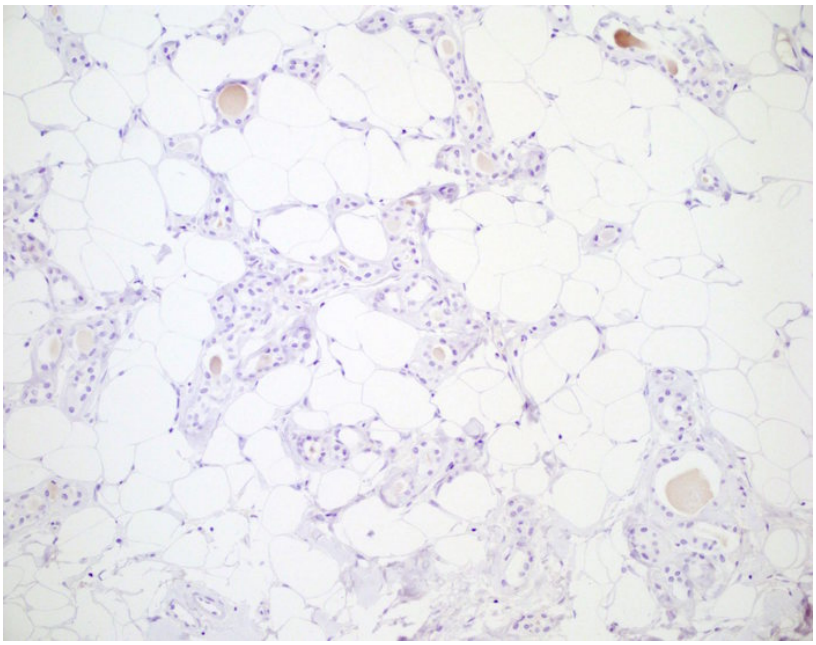

Figure 3: The tubules demonstrate non-reactivity for p63. p63 immunostain highlights the myoepithelial layer in background glandular tissue (H&E, 200X magnification)

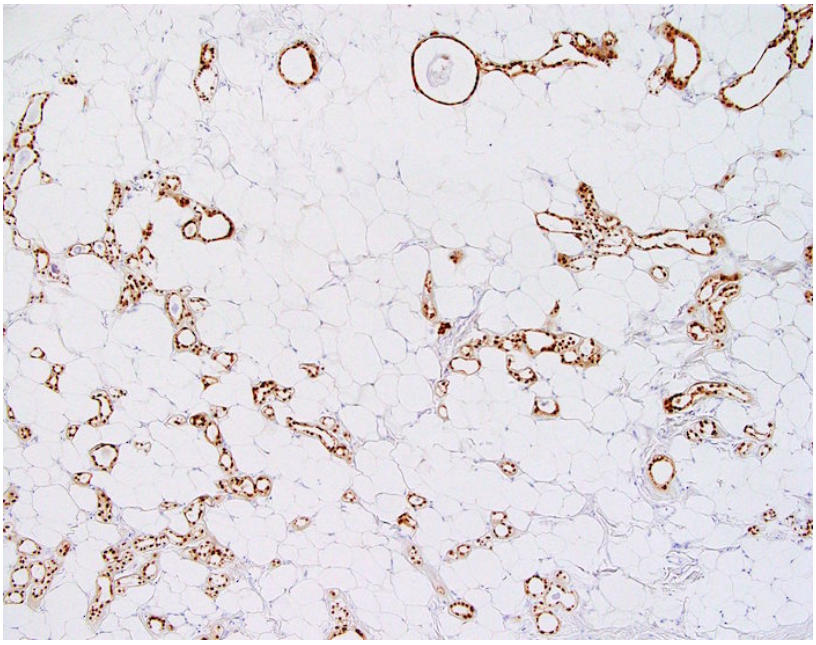

Figure 4: The lesional cells have diffuse nuclear reactivity for S100. (H&E, 200X magnification)

Diagnosis

Fibrocystic Change, Proliferative Type, Including Sclerosing Adenosis, Associated With Microcalcifications

Microglandular Adenosis

Discussion

Microglandular adenosis (MGA) is a rare disorder of the breast characterized by an infiltrative proliferation of small glands in a background of fatty or fibrous breast stroma. The clinical and radiographic findings can mimic carcinoma. Women can present with a palpable mass or "thickening" of breast tissue.[1] The radiographic findings are nonspecific and can be reported as "suspicious", or as clustered calcifications as in this case.[2]

The gross pathologic examination can reveal an ill-defined mass that typically ranges from 3 to 4 cm in greatest dimension. Fibrocystic change and other proliferative breast disorders can contribute to the size of the mass. In this case, there was no palpable mass and the MGA component was a focal, incidental finding, but this presentation is less common.

The characteristic histology of MGA is small round glands that are a lined by a single layer of flat or cuboidal cells. The nucleus is usually inconspicuous and eosinophilia can be seen in the cytoplasm and within intraluminal secretions. The secretions are usually positive for (PAS) and may calcify. However, there can be substantial variation in growth pattern, leading to confusion with other forms of adenosis, collagen spherulosis and carcinomas.[2]

Immunohistochemical stains are quite useful in discriminating MGA from secretory or invasive ductal carcinoma. The cells of MGA lack staining for myoepithelial markers (p63, calponin) but the cytoplasm and nuclei are diffusely positive for S100. S100 staining is a distinct marker for MGA and is negative in other small glandular proliferations.[3-4]

There is a strong association of MGA with invasive carcinoma (up to 20-30% of case), with some cases showing a direct morphologic transition.[1, 6] Interestingly, MGA has a molecular phenotype closely related to basal-type carcinomas (triple negative for ER, PR and Her2).[7]

References

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2. Khalifeh IM, Albarracin C, Diaz LK, et al. Clinical, histopathologic, and immunohistochemical features of microglandular adenosis and transition into in situ and invasive carcinoma. Am J Surg Pathol. 2008; 32(4):544-52.

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