



COLLAGEN SPHERULOSIS : A RARE INCIDENTAL FINDING IN PROLIFERATIVE BREAST LESIONS

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INTRODUCTION:

Collagen spherulosis is an unusual, incidental finding in proliferative breast lesion which is characterized by collagen rich spherules made up of basement membrane material. It can be associated with other benign proliferative breast lesion. Carcinoma may be present coincidentally, but they are neither associated with malignancy nor they are precancerous.

CASE DETAIL:

We came across a case of 35 year old female, who noticed swelling in right breast since 15 days. Occasional pain was there. Menstrual and obstetric history was not significant. Lump was 1 x 1 cm in diameter, well defined, firm, nontender and mobile. Smears yielded high cellularity, showing ductal epithelial cells in sheets and groups. Cells showed mild to moderate degree of anisonucleosis and pleomorphism, moderate amount of cytoplasm, occasional nuclear overlapping and bland nuclear chromatin. Background showed bipolar-bare nuclei, myoepithelial cells, stromal fragments and hyaline globules surrounded by cells.(Score 11). She was stamped as having 'Proliferative breast lesion without atypia with collagen spherulosis.'

DISCUSSION :

It is an infrequent incidental microscopic finding seen in 1- 2 % cases of hyperplastic duct lesions of breast. Because of its resemblance to rare adenoid cystic carcinoma of breast, its alternative name is adenoid cystic hyperplasia. Seen mostly in benign ductal hyperplasia¹, but can also be seen in other benign proliferative breast disease like – intra ductal papilloma^{10,11}, papillary duct hyperplasia, atypical ductal hyperplasia & sclerosing adenosis². It is seen more commonly in ducts than in lobules. Carcinoma may be present coincidentally, but these usually are incidental processes³. There is no evidence to indicate that the presence of collagen spherulosis is associated with any precancerous lesion⁴ or that it is associated with adenoid cystic carcinoma of breast. Rarely carcinoma in situ is found colonizing & replacing the epithelium of collagen spherules. E-cadherin reactivity is present when collagen spherulosis occurs in ductal hyperplasia or intra ductal carcinoma, but it is absent when lobular carcinoma in situ involves it. Most of the time it is found incidentally, but may rarely present as palpable breast mass⁵.

Histologically, acellular spherules are surrounded by small uniform myoepithelial cells with cribriform pattern⁶. Hyperplastic epithelium forms the true glands & acellular spherules create an adenoid cyst like arrangement. But lumens are irregular than adenoid cystic carcinoma. On cytology^{7,8}, smears are moderately cellular. Epithelial cells are in clusters and few dispersed singly. Myoepithelial cells are present. Spherules appear magenta in MGG stain, light pink in H & E, while light green in PAP stain. They are surrounded by crescentic myoepithelial cells or clusters of epithelial cells. Fibrillary quality may be detected in spherules with Diff-quick stain. Generally, spherules measure 20 – 200 micrometers in diameter. Actually collagen spherules are a stromal reaction consisting of

resembling hyaline globules of adenoid cystic carcinoma^{7,8}. Calcification in collagen spherulosis may lead to its identification on mammography. More often stellate fibrils radiate from a central nidus towards periphery (which may be appreciated on Masson trichome staining). Degenerative changes may occur in spherules creating myxoid appearance. Cytologically, it has to be differentiated from adenoid cystic carcinoma of breast^{9,1}. Adenoid cystic carcinoma is seen in older women. Cytologically, smears show cohesive cell groups and some scattered singly. Magenta coloured hyaline globules are seen in MGG, measuring 10-80 microns. Cells are fairly bland nonetheless malignant epithelial cells with nuclear over crowding, overlapping, mild anisonucleosis, slightly hyperchromatic nuclei and small nucleoli are easily appreciated. Bipolar bare nuclei are absent. It shows PAS positive material within duct like spaces and Alcian blue positive material within pseudocyst. While in collagen spherulosis, variable positivity for both stains. On histology, adenoid cystic carcinoma ,cribriform variety of ductal carcinoma and intraductal carcinoma having signet ring cells¹² may resemble it. Immunohistochemistry & electronmicroscopy identifies several constituents in spherules like elastin, PAS positive polysaccharides, basement membrane material^{4,10} with mineral deposition in it.

CONCLUSION :

COLLAGEN SPHERULOSIS IS AN UNCOMMON INCIDENTAL FINDING IN BENIGN BREAST DISEASES. IT SHOULD BE DIFFERENTIATED FROM ADENOID CYSTIC CARCINOMA OF BREAST.

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