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Editorial

Aflush and Rubicund - Apocrine Adenoma Breast

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Apocrine adenoma breast is configured of an adenoma comprehensively constituted of proliferating epithelial elements as apocrine cells. The exceptionally discerned, benign neoplasm is singularly and homogenously constituted of apocrine cells with minimal quantities of circumscribing stroma. Initially scripted by Hertel et al in 1976, pure breast adenoma with apocrine differentiation may represent as a nodular sclerosing adenosis with apocrine differentiation.

Tumefaction is sharply defined and appears distinct from circumscribing breast tissue. The nodular tumour mass is exclusively comprised of apocrine cells devoid of cytological atypia.

Morphological features as cytological atypia, focal necrosis or tumour invasion into circumscribing soft tissue appears to indicate atypical hyperplasia or malignant neoplasms of apocrine cells as ductal carcinoma in situ (DCIS) or invasive ductal carcinoma breast.

Thus, meticulous assessment of the neoplasm in entirety is recommended.

Neoplasm may represent as a distinct tumour mass arising within various breast quadrants [1,2].

Cytological smears expound a dual population of tumour cells as cuboidal epithelial cells or flattened epithelial cells. Tumour cells are incorporated with intensely eosinophilic, granular cytoplasm and supra-nuclear vacuoles imbued with yellow brown pigment preponderantly composed of iron or hemosiderin. Alternatively, tumour cell cytoplasm is distinctly foamy and impregnated with miniature vacuoles which may coalesce and exhibit intracytoplasmic lipofuscin pigment [1,2].

Tumour cell nuclei appear centric, globoid and pale and are pervaded with singular or dual, prominent nucleoli. Flattened epithelial cells may be permeated with hyperchromatic nuclei, as observed within tension apocrine cysts.

Foci of necrosis, cellular or nuclear atypia and mitotic figures may indicate lesions as apocrine ductal carcinoma in situ (DCIS) or invasive apocrine carcinoma, which necessitate exclusion [1,2].

Upon microscopy, neoplasm is singularly composed of benign apocrine cells. The homogeneous tumefaction is sharply segregated from encompassing breast tissue. Singular proliferation of epithelial elements appears commingled with minimal supportive stroma within circumscribing breast tissue [3,4].

Neoplasm may configure localized tumour nodules demonstrating tubular, papillary or cystic architecture composed of apocrine metaplastic cells. Benign mammary glands are layered with ductal epithelial cells impregnated with abundant granular, intensely eosinophilic cytoplasm, apical luminal blebs and decapitation secretion. Tumour cells aggregates may be pervaded with focal calcification [3,4].

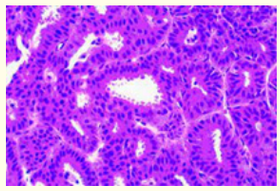

Figure 1: Apocrine adenoma delineating tubules and papillae layered by apocrine cells pervaded with abundant granular, eosinophilic cytoplasm, apical blebs and minimal supportive stroma circumscribing the neoplasm [7].

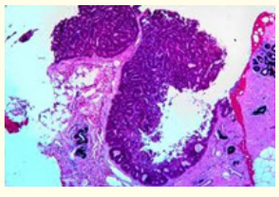

Figure 2: Apocrine adenoma demonstrating tubules and papillae lined by apocrine cells permeated with abundant granular, eosinophilic cytoplasm, apical blebs and minimal supportive stroma surrounding the neoplasm [7].

Staging of carcinoma breast as per American Joint Committee on Cancer (AJCC) 8th edition [2,3]

- Stage 0 constituted of non-invasive or in situ carcinoma wherein disease is confined to breast tissue ducts. Invasion into surrounding breast tissue is absent (Tis, N0, M0).
- Stage IA wherein tumour is miniature, invasive and devoid of regional lymph node metastasis (T1, N0, M0)
- Stage IB is comprised of tumour dissemination into regional lymph nodes > 0.2 millimetre and < 2 millimetre magnitude. Tumour confined to breast tissue is absent or tumour within breast tissue is ≤20 millimetres diameter (T0 or T1, N1mi, M0)
- Stage IIA describes lesions demonstrating
    - Absence of tumour within the breast although tumour disseminates into one to three axillary lymph nodes. Distant metastasis is absent (T0, N1, M0)
    - Tumour is ≤ 20 millimetre diameter and disseminates into one to three axillary lymph nodes (T1, N1, M0)
    - Tumour >20 millimetres and <50 millimetres and devoid of metastasis into axillary lymph nodes (T2, N0, M0)
- Stage IIB is constituted of
    - Tumour > 20 millimetres and < 50 millimetres and disseminates into one to three axillary lymph nodes (T2, N1, M0)
    - Tumour is > 50 millimetres and devoid of axillary lymph node metastasis (T3, N0, M0)
- Stage IIIA is comprised of tumour of variable magnitude with dissemination into 4 to 9 axillary lymph nodes or into internal mammary lymph nodes. Distant metastasis is absent. (T0, T1, T2, or T3, N2, M0) OR tumour > 50 millimetres with dissemination into one to three axillary lymph nodes (T3, N1, M0)
- Stage IIIB is comprised of tumour demonstrating swelling or ulceration of breast or tumour dissemination into chest wall OR tumour may configure as an inflammatory breast cancer. Tumour dissemination into up to 9 axillary or internal mammary lymph nodes may or may not occur. Distant metastasis is absent (T4, N0, N1 or N2, M0)
- Stage IIIC is comprised of tumour of variable magnitude with dissemination into ≥10 axillary lymph nodes, internal mammary lymph nodes and/or supraclavicular lymph nodes. Distant metastasis is absent (any T, N3, M0)
- Stage IV (metastatic) is constituted of tumour of variable magnitude with distant metastasis into diverse organs as bones, pulmonary parenchyma, brain, hepatic parenchyma, distant lymph nodes or chest wall (any T, any N, M1). de novo metastatic breast cancer upon initial representation occurs in ~6% instances within preceding lesions or upon therapeutic intervention of preliminary stages of breast carcinoma.

Recurrent carcinoma breast is constituted of breast carcinoma which relapses following therapy. Tumour is denominated as local, regional, and/or with distant lesions and mandates additional evaluation.

Apocrine adenoma appears immune reactive to epithelial membrane antigen (EMA), CK8/CK18, androgen receptor (AR), gross cystic disease fluid protein 15 (GCDFP15), gross cystic disease fluid protein 24 (GCDFP24) or apolipoprotein D or gross cystic disease fluid protein 44 (GCDFP44) or zinc alpha2 glycoprotein.

Tumour cells appear immune non reactive to oestrogen receptors (ER) and progesterone receptors (PR) [5,6].

Apocrine adenoma breast requires segregation from neoplasms as apocrine ductal carcinoma in situ (DCIS), atypical apocrine hyperplasia, fibroadenoma, prominent apocrine change as a component of fibrocystic disease and well differentiated apocrine carcinoma [5,6].

Apocrine adenoma may be appropriately alleviated by comprehensive surgical resection of the neoplasm.

Neoplasm is optimally treated with cogent surgical excision which is beneficially employed with curative intent.

Although apocrine adenoma is contemplated to be a benign neoplasm, possible occurrence of malignant metamorphosis within the exceptionally discerned lesion remains undocumented [5,6].

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7. Image 1 and 2 Courtesy: Tandonline.com.