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BREAST IMAGES

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Invasive apocrine carcinoma of the breast: Myth or fact?

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An 88-year-old woman presented a palpable lesion of the left breast for 10 months with an increasing diameter. Local examination revealed a 5-cm, mobile, and hard mass in the upper-outer quadrant of the left breast. Mammography showed opacity with regular edges (diameter 5.5 cm) and on-site microcalcifications of clinical sign. US image confirmed the cystic lesion with irregular and hypervascular wall thickening and a solid intracystic floating lesion. Core needle biopsy of solid intracystic mass was performed, and histology demonstrated an invasive not specified type (NST) carcinoma. Left mastectomy and sentinel lymph node dissection were performed, negative at intraoperative histology. Macroscopic examination identified a cystic growth with intraluminal floating proliferation and hematic content, measuring 7 × 6 × 5 cm. Histology demonstrated a cystic apocrine infiltrative carcinoma (IAC) with eosinophilic cytoplasm cells and prominent nucleoli (Figure 1A). Immunophenotype showed estrogen receptor (ER; 90%), progesterone receptor (PR; 80%), androgen receptor (AR; 80%), and gross cystic disease protein fluid-15 (GCDFP-15) positivity (Figure 1A,B, C, D), as well as human epidermal growth factor receptor type 2 (HER 2) negativity; Ki-67 labeling index was 15%.

According to the literature, "pure" IAC of the breast is a rare subtype (0.3%-4%) of invasive breast cancer, presenting ER-/PR-/AR+/

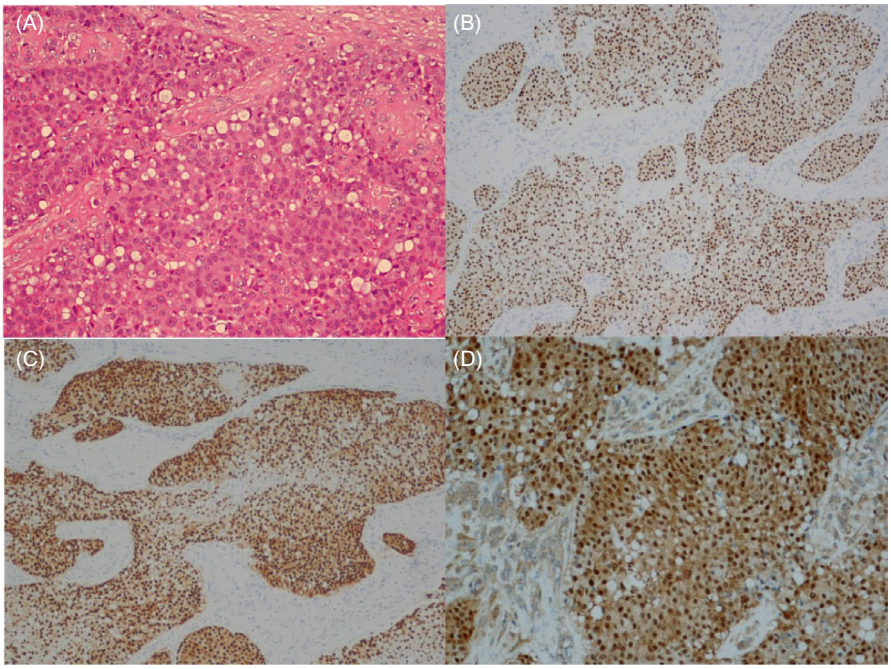

FIGURE 1 A, Neoplasia is composed of cells characterized by abundant eosinophilic and granular cytoplasm, centrally to eccentrically located nuclei with prominent nucleoli and distinctive cell borders. Hematoxylin and eosin 200× original magnification. B-C-D, Diffuse immunohistochemical expression of ER (100×), PR (100×), and AR (200×)

Her2 +. IAC is characterized by analogous architectural growth patterns of invasive ductal cancer NST, changing only in their cytological appearance, but it is at high risk of recurrence compared with one. It is composed of apocrine cells (more than 80-90%) with abundant eosinophilic and granular cytoplasm, large nuclei with prominent nucleoli, and distinctive cell membrane. The characteristic hormone receptor profile is ER and PR double-negative, and AR- and HER2-positive.

This case shows an apocrine differentiation with an unusual immunophenotype (ER+PR+AR+HER2-) that delineates a NST breast cancer with prevalent apocrine differentiation. Nowadays, the reasons for this discrepancy in receptor differentiation are unclear. The treatment for patients with special histologic types of breast cancer has rarely been studied, and current guidelines had few specific recommendations for patients with apocrine cancer.

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