



## APOCRINE CARCINOMA OF BREAST: A RARE CASE REPORT

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### ABSTRACT

Apocrine carcinoma of breast is a very rare form of breast malignancy represent about 0.4% of all invasive ductal carcinoma (IDC). Though clinical presentation and gross appearance are indistinguishable from classic IDC, they have distinct cytological, histopathological and immunohistochemical features. Tumor cells are characterized by typical apocrine features large cells with abundant eosinophilic granular cytoplasm and large pleomorphic vesicular nuclei and prominent nucleoli. It tends to show estrogen, progesterone receptors and her2/neu negativity and show positivity for Gross Cystic Disease Protein Fluid -15 (GCDPF-15). We report a case of 65 year old female presenting clinically as lump in right breast in upper inner quadrant since four months and having similar cytological, histopathological and immunohistochemical features.

**KEY-WORDS:** Apocrine carcinoma, Breast malignancy, Immunohistochemistry

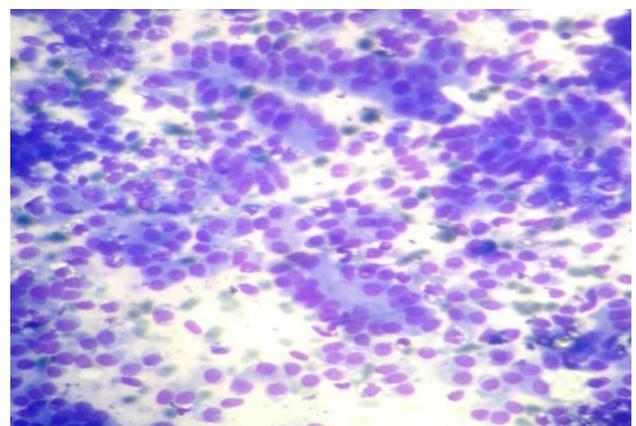
### INTRODUCTION

Apocrine carcinoma of breast is a very rare form of breast malignancy represent about 0.4% of all invasive ductal carcinoma (IDC)<sup>[1]</sup>. Clinical presentation and gross appearance are indistinguishable from classic IDC differing only in their cytological appearance. Tumor cells are characterized by typical apocrine features large cells with abundant eosinophilic granular cytoplasm and large vesicular nuclei.<sup>[2]</sup> It tends to show estrogen, progesterone receptors and her2/neu negativity and expression of Gross Cystic Disease Protein Fluid -15 (GCDPF-15).<sup>[3,4,5]</sup> We report a case of invasive apocrine carcinoma of breast as it is a very rare histological entity.

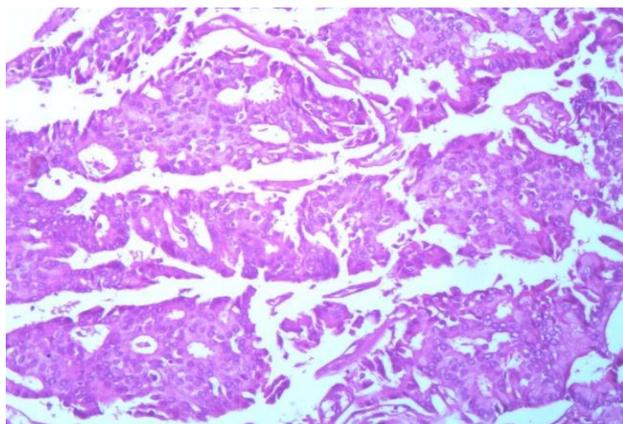
### CASE REPORT

A 65 years old female presented with a right breast lump in upper inner quadrant since four months, gradually increased in size. On clinical examination of breasts, overlying skin showed puckering. There was no nipple retraction and any discharge. No axillary lymphadenopathy. Fine needle aspiration was done which show marked cellular smear, having large pleomorphic nuclei with prominent nucleoli and eosinophilic granular cytoplasm with probable diagnosis of apocrine carcinoma.(Fig.1) In view of cytological report, modified radical mastectomy was done and specimen sent for histopathological examination. Cut section showed tumor of

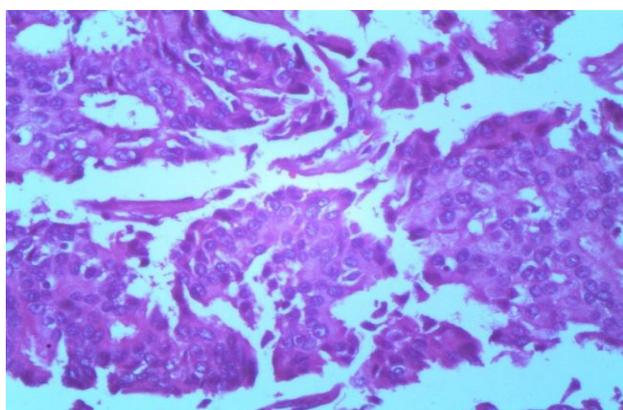
size 7×6×5 cm, fleshy along with axillary and apical lymph nodes. Haematoxylin and eosin stained sections examined under light microscopy showed large cells arranged in tubules, glandular pattern and sheets having abundant eosinophilic granular cytoplasm with distinct cell borders along with large round to oval nuclei with vesicular chromatin and prominent nucleoli. (Fig 2 & 3) The case was labelled as apocrine carcinoma of right breast. All axillary and apical lymph nodes, surgical margin, pectoral fascia, skin, nipple and areola were free from tumor infiltration.



**Fig1:** Cytology (FNAC) shows hypercellular smear, cluster, sheets, and isolated cells having abundant granular cytoplasm (MGG, 40X)

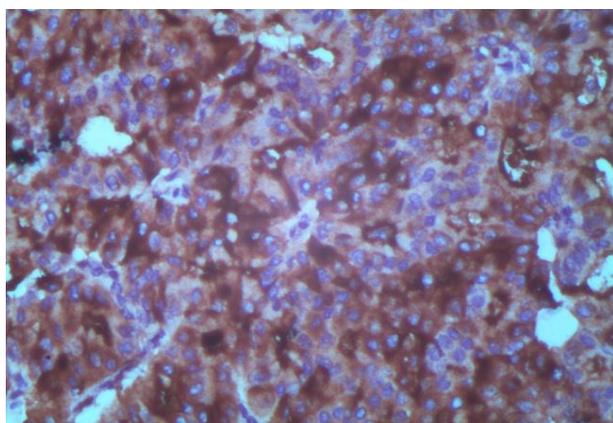


**Fig 2: Microphotograph shows tubules and glandular cells having abundant granular cytoplasm (H& E, 10X)**



**Fig 3: Microphotograph shows large cells having abundant granular cytoplasm with distinct cell borders & large vesicular nuclei (H& E, 40X)**

Immunohistochemistry was done which showed negativity for Estrogen Receptor (ER), Progesterone receptor (PR) and her2/neu. GCDFP-15 positivity reported on molecular analysis. (Fig 4)



**Fig 4: Immunohistochemistry microphotograph shows positivity for Gross Cystic Disease Protein Fluid -15 (GCDFP-15). (IHC)**

## DISCUSSION

As apocrine carcinoma is a very rare category of breast carcinoma, very less frequently encountered and so less often studied.

The definition and consequently the reported incidence of these tumors varies considerably included this entity under the group of “relatively rare carcinomas”.<sup>[6]</sup> Frable and Kay (1968) in a survey which covered a 16 years period stated that apocrine carcinoma account for 1% of mammary carcinomas.<sup>7</sup> Azopardi reported an incidence of apocrine carcinoma between 0.3 – 0.4% of all breast carcinomas.<sup>[1]</sup>

Japaze *et al.*, 2005 proposed criteria are (1) Apocrine features should consist of 75% of cells (2) Large cells with eosinophilic, granular cytoplasm (3) Nucleus to cytoplasm ratio of 1:2 or more (4) Nucleus large round and vesicular, may be pleomorphic (5) Sharply defined cell borders. Minor criteria includes prominent nucleoli in >50% of fields and apical cytoplasmic snouts into luminal spaces.<sup>[3,8]</sup> In this case fulfill all the criteria by Japaze *et al.*<sup>[8]</sup>

Apocrine carcinoma should be differentiated from other histological types of breast carcinoma that is oncocytic carcinoma, secretory type, lipid rich type, histiocytoid type and which we have done in our study. From our observation it can be said that Japaze criteria could be reasonably helpful in differential diagnosis.

Apocrine carcinomas always show moderate nuclear pleomorphism and tubule formation is rarely greater than 75%. Mitotic count is variable. -Therefore most apocrine carcinomas are Scarff-Bloom-Richardson grade 2-3.<sup>[5]</sup> Our case belonged to grade 1 as moderate nuclear pleomorphism and low mitotic count seen. Ongoing studies about apocrine carcinoma revealed estrogen, progesterone receptors and her2/neu negativity and GCDFP-15 protein positivity.<sup>[3,5]</sup>

Apocrine carcinoma has a prognosis similar to classic IDC as staging and grading.<sup>[2]</sup> However there seems to be a potential unique response to androgen administration as a part of treatment; that may justify identifying apocrine carcinoma as an entity different from usual ductal carcinoma which was emphasized by Tsutsumi.<sup>[4]</sup>

## CONCLUSION

Apocrine carcinoma is a rare and distinct morphological type of invasive breast cancer & have unique respons for androgen administration .

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