Case Report

# Apocrine carcinoma of breast: a case report

G Meenakumari[1*], N Sharmila Thilagavathy[2], L Muthumani[3]

Professor and Head of Department of Pathology, Madurai Medical College, Madurai, Tamil Nadu, INDIA.
**Email:** meenakumariilango1971@gmail.com

**Abstract**

Apocrine carcinoma is a very rare form of breast malignancy with an incidence of less than 1% of female invasive breast carcinoma. We report a case of apocrine carcinoma in a 56 year old female and discuss the criteria to diagnose apocrine carcinoma including its distinct androgen receptor positivity making the patients with apocrine carcinoma eligible for targeted therapy.

**Keywords**: Breast cancer, special type, androgen receptor.

[*]**Address for Correspondence:**
Dr. G Meenakumari, Professor and Head of Department of Pathology, Madurai Medical College, Madurai, Tamil Nadu, INDIA.
**Email:** meenakumariilango1971@gmail.com

Received Date: 02/04/2015 Revised Date: 10/04/2015 Accepted Date: 14/04/2015

| Access this article online | |
|---|---|
| Quick Response Code: | Website: www.statperson.com |
| | DOI: 16 April 2015 |

## INTRODUCTION

Apocrine carcinoma is a very rare form of breast malignancy with an incidence of less than 1%offemale invasive breast carcinoma. It shows distinct morphologic and immunohistochemical features. Apocrine carcinoma has a charecteristic steroid receptor profile that is estrogen and progesterone receptor negative and androgen receptor positive. Androgen receptor positivity makes patients with apocrine carcinomas eligible for targeted therapies. We report a case of apocrine carcinoma as it is a very rare morphologic entity.

## CASE REPORT

A 56 year old female presented with lump in the right breast. FNAC was done and a diagnosis of apocrine carcinoma was made. Patient underwent modified radical mastectomy with axillary clearance. (Figure1). Modified radical mastectomy specimen measuring 16x15x4 cm was received and serially sectioned. Cut surface showed a greyish white tumour measuring 10.5x5.5x4 cm, Firm in consistency involving the upper outer quadrant. The axillary pad of fat revealed 16 lymphnodes. Representative bits were processed and H and E sections were obtained. Microscopic examination showed tumour cells arranged in nests and sheets with the tumour cells having distinct cell margins, abundant eosinophilic cytoplasm, pleomorphic vesicular nuclei and prominent nucleoli. (Fig - 2, 3) The intervening stroma showed lymphocytic infiltrate and necrosis. Axillary lymphnodes were free of tumour involvement. Immunohistochemical studies were done and the tumour cells were estrogen and progesterone receptor negative and androgen receptor positive. Final diagnosis of invasive apocrine carcinoma was made.


**Figure 1:** Cut section of mastectomy specimen showing:greyish white tumour.

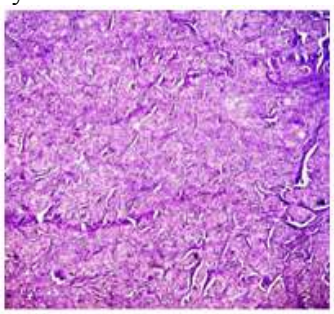

**Figure 2:** Low power view showing tumour cells arranged in sheets (H and E)

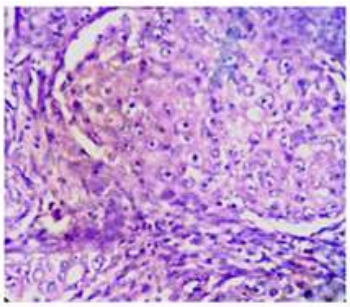

**Figure 3:** High power view showing tumour cells having eosinophilic cytoplasm, vesicular nuclei and prominent nucleoli. (H and E)

How to site this article: G Meenakumari, N Sharmila Thilagavathy, L Muthumani. Apocrine carcinoma of breast: a case report. *International Journal of Recent Trends in Science and Technology* April 2015; 14(3): 571-572 http://www.statperson.com (accessed 18 April 2015).

## DISCUSSION

Apocrine glands are normal appendages of the skin in the axilla, anogenital region and eyelids. Apocrine differentiation occurs in a subset of normal mammary glandular cells and apocrine proliferative lesions found in the adult breast may arise by expansion of this constituent rather than through metaplastic alteration of nonapocrine cells[1]. Apocrine carcinomas are very rare. The frequency of apocrine carcinoma varies from 0.5% to 4%.[2]. This variability is probably due to inconsistent diagnostic criteria. When the diagnosis is limited to carcinomas that have apocrine morphology in more than 90% of the tumour, no more than 1%of breast carcinomas can be classified as apocrine carcinoma. The reported age at diagnosis of apocrine carcinoma ranges from 19 to 90 years. Data on risk factors for breast carcinoma such as family history are very limited in women with apocrine carcinoma. There are no striking differences in the clinical or mammographic features of patients with apocrine and nonapocrine duct carcinomas[3]. Apocrine carcinomas has no specific gross morphologic features. They tend to be structurally poorly differentiated although they can have the usual growth patterns of infiltrating ductal carcinoma. The criteria proposed by Japeze *et al*, 2005 for the diagnosis of apocrine carcinoma are

1. apocrine features consisting of 75% of cells,
2. large cells with eosinophilic granular cytoplasm,
3. nucleus to cytoplasmic ratio of 1 : 2 or more,
4. nucleus large, round, and vesicular may be pleomorphic,
5. Sharply defined borders.

Minor and nonmandatory criteria include prominent nucleoli in more than 50% of fields and apical cytoplasmic snouts into luminal spaces[4]. Our case fulfilled all the criteria. Immunohistochemical studies reveal that most apocrine carcinoma are triple negative, Gross cystic disease fluid protein positive with androgen receptor positivity[5,6]. Differential diagnosis include metastatic renal carcinomas, on cocyticcarcinoms and granular cell tumor but all these tumours show different immunohistochemical profile. Apocrine carcinoma have prognosis similar to Infiltating ductal carcinoma – Not otherwise specified type when matched for grade and stage[7,8]. Though there are no diagnostic or prognostic differences between apocrine and nonapocrine invasive carcinomas, androgen receptor positivity in apocrine carcinomas lead to different management protocol[9]. Hence this justifies identifying apocrine carcinomas as a separate entity.

## CONCLUSION

Apocrine carcinoma of breast is a rare and distinct morphological type of invasive breast carcinomas. Though clinically and prognostically it does not differ much from Infiltrating ductal carcinoma - not otherwise specified, it should be diagnosed as separate entity because the different hormonal profile in apocrine carcinomas may show different clinical behaviour with a unique response to targeted therapy with androgen receptor antagonist.

## REFERENCES


1. Eusebi V, Betts C, Haagensen DE Jr, *et al*. Apocrine differentiation in lobular carcinoma of the breast: a morphologic, immunologic, and ultrastructural study. Hum Pathol1984; 15:134-140.
2. Matsuo K, Fukutomi T, Tsuda H, *et al*. Apocrine carcinoma of the breast: Clinicopathological analysis and histological subclassification of 12 cases. Breast Cancer 1998; 5:279-284.
3. G. Gilles R, Lesnik A, Guinebretiere JM, *et al*. Apocrinecarcinoma:clinical and mammographic features. Radiology 1994; 190:495 – 497.
4. G. Gayatri, B. Mondita, B. Asha, and A. Vishal, "Study on apocrine carcinoma of breast: histomorphologic features and immunohistochemical behavior," International Journal of Basic and Applied Medical Sciences, vol. 2, no. 3, pp. 190–193, 2012.
5. J..R. Durham and R.E. Fechner, the histological spectrum of apocrine lesions of breast. The American Journal of Clinical Pathology, vol.113, supplement 1, no s3, p.s18, 2000.
6. Y. Tsutsumi, Apocrine carcinoma as triple negative cancer:novel definition of apocrine type carcinoma as estrogen/ progesterone receptor negative and androgen receptor positive invasive ductal carcinoma. Japanese Journal of Clinical Oncology, vol.42, no.5, pp.375 -386, 2012.
7. Abati AD, Kimme M, Rosen PP. Apocrine mammary carcinoma:Aclinicopathological study of 72 cases. Am J ClinPathol 1990; 94:371- 377.
8. D Amore ES, Terrier-Lacombe MJ, Travagli JP, *et al*. Invasive carcinoma of the breast: a long term follow up study of 34 cases. Breast Cancer Res Treat 1988; 12:37 - 44.
9. SemirVranic, fFernando Schmitt, Anna Sapino *et al*. Apocrine carcinoma of the breast:A comprehensive review. HistolHistopathol (2013)28:1393-1409.


Source of Support: None Declared
Conflict of Interest: None Declared