APOCRINE CARCINOMA OF BREAST- A RARE CASE REPORT

Utpala Uday[1], Mallikarjuna N. Managi[2]

[1]Junior Resident, Department of General Surgery, Bangalore Medical College and Research Institute, Bengaluru, Karnataka.
[2]Assistant Professor, Department of General Surgery, Bangalore Medical College and Research Institute, Bengaluru, Karnataka.

HOW TO CITE THIS ARTICLE: Uday U, Managi MN. Apocrine carcinoma of breast- a rare case report. J. Evolution Med. Dent. Sci. 2017;6(72):5177-5178, DOI: 10.14260/Jemds/2017/1124

BACKGROUND

Apocrine carcinoma is a rare variant of breast carcinoma, accounting for ~0.4% of invasive breast tumours.[1,2] The clinical profile of apocrine carcinoma is indistinguishable from infiltrative ductal carcinoma- no special type (IDC-NST). It is characterised by the distinct microscopic appearance of abundant eosinophilic granular cytoplasm and multiple prominent nucleoli[3,4]; and oestrogen/progesterone negative, androgen positive (ER-/PR-/AR+) receptor profile.[5]

PRESENTATION OF CASE

A 58-year-old female initially presented to the surgery department with the complaint of lump in the left breast since last 6 months, which had been gradually increasing in size. She denied any complaints of swelling in the axilla. On local examination, a solitary hard mass of 8 x 7 cm was noted in the upper outer and inner quadrant of left breast with concomitant nipple retraction. There was no evidence of axillary lymphadenopathy.

PATHOLOGICAL DISCUSSION

On evaluation, mammography showed an ill-defined irregular opacity graded as BIRADS VI and axillary sonography revealed few subcentimetric lymph nodes, largest measuring 10 x 8 cm. FNAC was suggestive of carcinoma of breast and showed high cellularity with pleomorphic cells showing high N:C ratio. The patient underwent 4 cycles of Docetaxel-based neoadjuvant chemotherapy with only minimal-to-modest response, followed by modified radical mastectomy. The histopathology showed presence of 4.5 x 4 x 4 cm lesion with microscopic presence of oval-polygonal cells with abundant eosinophilic cytoplasm and pleomorphic nuclei. Metastasis was present in 8 regional lymph nodes. The patient was triple receptor negative (ER-/PR-/HER-2/neu-) and androgen receptor positive. She completed the course of chemotherapy and local radiotherapy and was disease free at 1 year of followup.

Financial or Other, Competing Interest: None.
Submission 31-07-2017, Peer Review 23-08-2017,
Acceptance 30-08-2017, Published 07-09-2017.
Corresponding Author:
Dr. Utpala Uday,
House No. 25,
Reliance Greens,
Motikhavdi,
Jamnagar-361142,
Gujarat.
E-mail: 4u.utpala@gmail.com
DOI: 10.14260/jemds/2017/1124

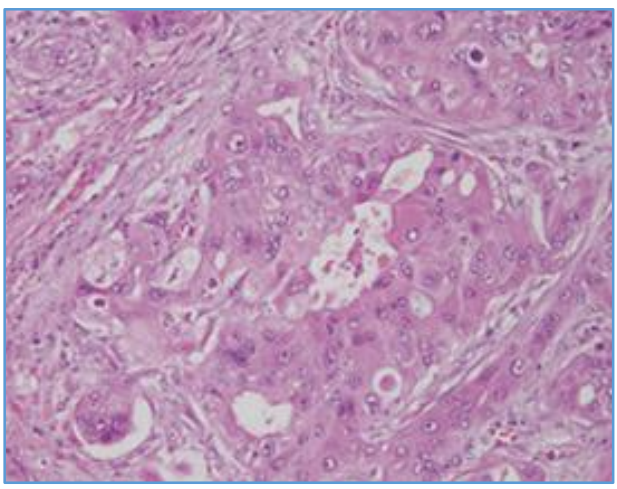

Figure 1. Photomicrograph showing Large Nuclei with Eosinophilic Cytoplasm and Prominent Nucleoli consistent with Apocrine Differentiation

DISCUSSION

Invasive carcinoma of the breast is a heterogeneous disease with more than 20 different variants described based on morphologic, molecular and clinical terms.[6] The reported incidence of invasive apocrine carcinoma is between 0.3 and 4%.[7] The mean age at presentation is in the 6th and 7th decade[1,8,9] with only female cases described in literature.

The significant variations in incidence noted may be attributed to the lack of consistent and accepted diagnostic criteria. In 2005 Japaze et al[8] proposed the morphologic criteria for the diagnosis of apocrine carcinoma, which is the current standard. It consists of five mandatory patterns as-

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 non-mandatory criteria include prominent nucleoli in > 50% of fields and apical cytoplasmic snouts into luminal spaces. O'Malley et al[10] defined invasive apocrine carcinoma as the presence of malignant apocrine cells in more than 90% of the tumour population.

Vranic et al[11] concurred that these are molecularly diverse cancers. They defined pure apocrine cancer (PIAC) by its characteristic profile of oestrogen and progesterone negativity and androgen receptor positivity (ER−/PR−/AR+). On the other hand, apocrine-like tumours do not have the characteristic steroid receptor expression profile and are more likely to have a luminal phenotype. Reported incidences of HER-2 overexpression vary from 33% to 54%.[1,9,11] Gross cystic disease fluid protein 15 (GCDFP-15) has been identified as a marker for apocrine differentiation in breast; however, its expression appears to be decreased in advanced apocrine carcinomas.[12]

Clinical and radiological presentation of apocrine carcinoma is no different from that of invasive ductal carcinomas (NST).[10,12] The mean tumour size is greater, 2 cm.[1,9] It tends to be unilateral, but multifocality multicentricity is seen frequently.[13] Apocrine carcinoma is associated with a lower frequency of axillary nodal involvement and less lymphovascular involvement.[1,9] Our case, probably owing to the late presentation showed both these features.

Nagao et al[14] in their study have indicated a poor response to chemotherapy in patients with apocrine carcinomas, although HER-2/neu enriched carcinomas tend to have the highest rate of complete response to neoadjuvant chemotherapy. However, according to Tsutsumi[5] there appears to be a potential unique response to androgen (fluoxymesterone) administration as a part of treatment which is under investigation.

The available prognostic data for apocrine carcinoma is contradictory with most studies showing no difference from stage matched invasive breast carcinoma- NST.[8] However, some recent studies have shown significantly better prognosis of pure apocrine carcinoma (PIAC) with overall six-year survival of 72% as against 52% for IDC-NST.[8] PIAC may be regarded as an independent clinico-pathological prognostic factor in early breast cancer.

CONCLUSION

Invasive apocrine carcinoma of breast is a distinct, albeit rare clinico-pathological entity. Its characteristic steroid receptor expression profile might be a route for targeted therapy as well as a guide for management and prognosis. It thus justifies identifying apocrine carcinoma as a unit different from the common invasive ductal carcinoma.

FINAL DIAGNOSIS

Breast carcinoma- apocrine type.

REFERENCES

[1] Matsuo K, Fukutomi T, Hasegawa T, et al. Histological and immunohistochemical analysis of apocrine breast carcinoma. Breast Cancer 2002;9(1):43-9.

[2] Mossler JA, Barton TK, Brinkhous AD, et al. Apocrine differentiation in human mammary carcinoma. Cancer 1980;46(11):2463-71.

[3] Yerushalmi R, Hayes MM, Gelmon KA. Breast carcinoma - rare types: review of the literature. Annals of Oncology 2009;20(11):1763-70.

[4] Durham JR, Fechner RE. The histologic spectrum of apocrine lesions of the breast. The American Journal of Clinical Pathology 2000;113(5 Suppl 1):S3-S18.

[5] Tsutsumi Y. Apocrine carcinoma as triple-negative breast cancer: novel definition of apocrine-type carcinoma as estrogen/ progesterone receptor-negative and androgen receptor positive invasive ductal carcinoma. Japanese Journal of Clinical Oncology 2012;42(5):375-86.

[6] Weigelt B, Geyer FC, Reis-Filho JS. Histological types of breast cancer: how special are they? Mol Oncol 2010;4(3):192-208.

[7] Vranic S, Schmitt F, Sapino A, et al. Apocrine carcinoma of the breast: a comprehensive review. Histol Histopathol 2013;28(11):1393-409.

[8] Japaze H, Emina J, Diaz C, et al. 'Pure' invasive apocrine carcinoma of the breast: a new clinicopathological entity? Breast 2005;14(1):3-10.

[9] Tanaka K, Imoto S, Wada N, et al. Invasive apocrine carcinoma of the breast: clinicopathologic features of 57 patients. Breast J 2008;14(2):164-8.

[10] O'Malley FP, Pinder SE, Mulligan AM. Breast Pathology. 2nd edn. Saunders Elsevier 2011.

[11] Vranic S, Tawfik O, Palazzo J, et al. EGFR and HER-2/neu expression in invasive apocrine carcinoma of the breast. Mod Pathol 2010;23(5):644-53.

[12] Lakhani SR, Ellis IO, Schnitt SJ, et al. WHO classification of tumours of the breast. Lyon, France: IARC 2012.

[13] Unal E, Firat A, Gunes P, et al. Apocrine carcinoma of the breast: clinical, radiologic and pathologic correlation. Breast J 2007;13(6):617-8.

[14] Nagao T, Kinoshita T, Hojo T, et al. The differences in the histological types of breast cancer and the response to neoadjuvant chemotherapy: the relationship between the outcome and the clinicopathological characteristics. Breast 2012;21(3): 289-95.