

Apocrine Carcinoma of Breast: Case Report

Meme Apokrin Karsinomu

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ABSTRACT Breast cancer is one of the leading cause of cancer death all over the world. It is a heterogeneous disease and encompasses different morphologic variants. Invasive ductal carcinoma of no-special-type is the most common type while special histologic types including invasive apocrine carcinoma of the breast are rare. The incidence of apocrine carcinoma of breast is less than 1% of female invasive breast carcinoma. Morphologic features of this tumor is distinctive. The diagnosis is mainly pathological as it's difficult to differentiate from other forms of breast cancer on imaging. We hereby present a case of invasive apocrine carcinoma of breast as it is a very rare morphological entity.

Key Words: Breast neoplasms; apocrine glands; cytology

ÖZET Meme kanseri dünya üzerinde kanser ölümlerinin önde gelen sebeplerinden birisidir. Bu kanser heterojen bir hastalıktır ve hastalığın farklı yapısal çeşitleri vardır. Memenin apokrin karsinomunu da içeren özgün tipler nadiren görülürken özgün olmayan tip invaziv duktal kanser en sık görülür. Memenin apokrin karsinomunun insidansı kadın meme kanserlerinin % 1' inden azdır. Bu tümörün yapısal özellikleri ayırıcıdır. Görüntüleme yöntemleri ile diğer meme kanserlerinden ayrımı zor olduğundan tanı esasen patolojik yöntemlerle konur. Çok nadir bir konu başlığı olduğundan bir invaziv apokrin karsinom olgusunu sunuyoruz

Anahtar Kelimeler: Meme neoplazileri; apokrin bezler; sitoloji

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Breast cancer is the most common cancer diagnosed nowadays and the second most common cause of cancer related mortalities among women in Western world. Breast cancer is not a single disease and diagnostic and prognostic descriptions of subtypes of breast cancer have become increasingly sophisticated over the past decades.^{1,2} Apocrine carcinoma accounting 0.3-0.4% of all invasive cancer in women is a rare variant of invasive ductal carcinoma with distinctive morphologic, immunohistochemical and molecular genetic features. We hereby present a case of invasive apocrine carcinoma of breast.

CASE REPORT

A 69-year-old postmenopausal woman visited the outpatient clinic, complaining of a firm painless lump in the left breast. She denied any history of

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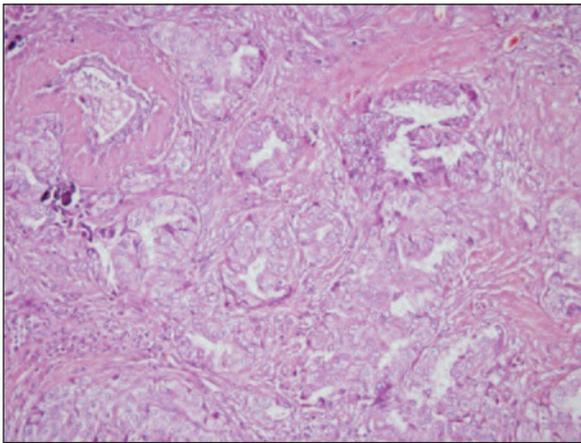


FIGURE 1: Photomicrograph showing large tumor cells having abundant granular eosinophilic cytoplasm and large round nuclei (H&E; 200x).

tumors in other sites. Physical examination confirmed the tumor mass in the lower outer quadrant of the left breast. Radiologic evaluations demonstrated a hypo-echoic mass (14 mm) with a speculated margin in ultrasonography and a focal asymmetric density in the upper medial portion in mammography. Tru-cut needle biopsy was performed with the diagnosis of apocrine carcinoma. The patient underwent partial mastectomy with sentinel lymph node biopsy. The sentinel lymph node was free of metastasis. The tumor was estrogen receptor (ER)-negative, progesterone receptor (PgR)-negative, and androgen receptor-positive, Gross cystic disease protein fluid-15 (GCDPF-15)-positive, human epidermal growth factor receptor (HER)-2-positive. The final pathological diagnosis was the same as the preoperative diagnosis (Figure 1). She has been followed with chemotherapy for 3 months for adjuvant treatment and has remained disease-free.

DISCUSSION

Apocrine carcinoma of the breast is clinically indistinguishable from invasive breast cancer (IBC), although it is reported to be more common at an older age and at postmenopausal status.³ Pure apocrine carcinoma or one that is composed mainly of apocrine cells is rare and the incidence is less than 0.5% of all breast carcinomas.⁴ IBC of the breast has a similar prognosis to infiltrating ductal carcinoma

not otherwise specified.⁵ While some studies show a slightly better prognosis for apocrine carcinoma, overall there is no statistical advantage when matched by stage and grade.^{3,4,6}

O'Malley and Bane cite two studies that compared invasive apocrine carcinomas with matched no special type tumors and found no difference in survival outcomes. The 6-year survival rate for moderate-to-high grade apocrine breast cancer is thought to be between 70% and 80%. There is some evidence to suggest that lymphatic invasion and lymph node metastasis is less likely for apocrine carcinoma than for non-specific invasive ductal carcinoma, but this is a relatively new finding, which has not been broadly confirmed.⁶ The gross appearance of an invasive apocrine carcinoma is similar to that of a ductal carcinoma, no special type. The distinctive appearance of apocrine carcinomas is evident on microscopic examination. Cytologically, the tumor cells have cytoplasm that is abundant and eosinophilic, with obvious granularity in some cases. The nuclei vary in grade, but typically show prominent nucleoli. According to emerging evidence, apocrine carcinomas tend to show estrogen and progesterone receptor negativity and androgen receptor positivity (ER-/PR-/AR+); and expression of Gross cystic disease protein fluid-15 (GCDPF-15).^{7,8} This combination of morphologic and immunohistochemical characteristics is essential for the proper recognition of carcinomas.

Japaze has proposed the following criteria.⁵ At least 75% of microscopic fields must demonstrate the following features: Large cells with abundant eosinophilic cytoplasm, usually granular; nucleus to cytoplasm ratio of 1:2 or more; nuclei round, large and vesicular, may be pleomorphic; and sharply defined cell borders. Minor (non-mandatory) criteria include: prominent nucleoli in >50% of fields; and apical cytoplasmic snouts into luminal spaces. Japaze reported significantly improved survival when apocrine carcinomas were defined as above. Clinically significant criteria have not generally been agreed upon. Clinical and mammographic features, size and site of apocrine car-

cinomas do not differ from those of invasive ductal carcinoma.^{1,2,8}

Historically, the studies of apocrine carcinoma comparing them with nonapocrine tumors failed to show any significant differences between the two entities.^{3,4,9,10} One recent report has shown somewhat different prognosis for pure invasive apocrine carcinoma.⁵ Although the prognosis does not differ from that of classical infiltrating ductal carcinoma, understanding the molecular changes that result in this morphologically unique tumor, may be helpful in development of better therapeutic options such as the unique response to androgen (fluoxymesterone) administration as a part of treatment.⁷ The main differential diagnoses include ductal carcinoma with apocrine changes, secretory carcinoma, histiocytoid carcinoma, lipid-cell rich

carcinoma and oncocytic carcinoma, all of which are relatively uncommon. Pure IBCs need to be differentiated from invasive ductal carcinoma with focal apocrine features. The keyword is 'focal'. The sections from our case showed widespread presence of apocrine cells with malignant features and diffuse positivity for GCDFP-15, thus effectively helping with the diagnosis.

In conclusion apocrine carcinoma is a rare and distinct molecular and morphological type of invasive breast cancer. Although prognostically same as invasive ductal carcinoma of no-special-type, apocrine carcinoma should be diagnosed as separate entity, as there are growing bodies of evidence that apocrine carcinoma may have different hormonal profile and may show different clinical behavior with a unique response to androgens.

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