A Case of Primary Apocrine Adenocarcinoma Presenting With Axillary Mass

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Research Article

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Abstract

**Introduction:** Primary apocrine sweat gland adenocarcinoma is a very rare tumour. Apocrine carcinoma is a high incidence of local recurrence and lymph node metastasis. When the location of the tumor is axilla, it should be differentiated from occult breast cancer. Surgery is the first step in primary apocrine cancer treatment. However, there is no clear consensus about adjuvant part of treatment.

**Methods:** The case with axillary apocrine carcinoma was presentated diagnosis, differential diagnosis and treatment approach.

**Result:** Axillary localized apocrine carcinoma was differentiated from occult breast cancer by pathological findings. For this reason, the patient was operated only an axillary dissection operation. Operated patient with axillary apocrine carcinoma was treated with radiotherapy. As a result of pathological evaluation of the tumor, tamoxifen was added to the treatment when the hormone receptor was positive.

**Conclusions:** The patient with apocrine carcinoma was treated with sequential radiotherapy and tamoxifen, and disease-free follow-up to this day

**Introduction**

Primary apocrine sweat gland adenocarcinoma is a very rare tumor. It usually emerges in areas of high apocrine gland density such as the axilla and anogenital areas, but may also be seen on the fore head, wrists, ear canals, eye lids, trunk, feet, toes, and fingers. It often presents as painless, indurate, nodules, or plaques and a slow-growing mass, but sometimes it can progress aggressively. Apocrine carcinoma is mostly seen in the 6th decade, with a median age at diagnosis of 67 years and there is a high incidence of local recurrence and lymph node metastasis[1]. The primary treatment is wide local excision with a clear margin of 1–2cm, with or without axillary lymphadenectomy according to the node clinical status[2]. Adjuvant treatment is controversial, particularly chemotherapy, but adjuvant radiation therapy has been suggested for locally advanced tumors[3]. Anti-estrogen therapy was recommended by Seong et al. but there are no case reports in literature of the use of adjuvant endocrine therapy[3].

The case is here presented of a 60-year old female patient with primary apocrine sweat gland carcinoma of the axilla. To the best of our knowledge, this is the first case in literature to have to used combined adjuvant radiation therapy and anti-estrogen therapy.

**Case Presentation**

A 60-year old female patient presented with a slowly growing mass in the right axilla. The patient was examined by a surgeon and there was suspected to be metastasis from breast cancer diagnosed in September 2017. The mass in the right axilla was painless, mobile and subcutaneous. No palpable lesion was detected in the bilateral neck lymph nodes and left axilla region and the breast examination was
normal. On the initial ultrasonography (USG) examination conglomerate lymph nodes were observed in the right axillary region, the largest being 40 mm in size. The same findings were seen on T2-weighted sequences magnetic resonance imaging (MRI) [figure 1].

Fine needle aspiration biopsy was performed on the axillary mass. Microscopic examination showed large cytoplasmic, prominent nucleoli and vesicular nucleated cells. As a result of the immunohistochemical examination, pancytokeratine, cytokeratin−7 (CK−7), CEA, gross cystic disease fluid protein (GCFDP)−15 and estrogen expression were positive in tumor and CD−68, CK−20, TTF−1 and calretinin were negative. Ki−67 proliferation index were evaluated immunohistochemically. Ki−67 index were detected 50%. Human epithelial reseptor−2 (Cerb-B2) that Herceptest (Dako) was used to measure the expression of Cerb-B2 was negative. Estrogen receptor was 70% positive.

The final pathology report was of apocrine cancer and the pathologist recommended evaluation for primary or secondary axillary apocrine cancer. Positron emission tomography (PET / CT) was imaged to the patient for the differential diagnosis and staging. PET scan was detected right axillary conglomerate lymphadenopathy and SUV maximum units measured 15.5 [figure2]. With these results, the patient was diagnosed with apocrine gland cancer at an early stage and primary surgical excision was recommended. Wide excision of the axillary apocrin carcinoma was performed by the surgery department. Macroscopic examination of the surgical specimen taken revealed two different conglomerate lymph node materials. And there was no tumor at the surgical margin. The microscopic findings were the same as the first pathological examination, so the apocrin carcinoma was confirmed to originate from sweat gland. Adjuvant treatment was planned as radiation therapy and then tamoxifen. Adjuvant radiationtherapy was started in the supraclavicular and right axillary region in the fourth week after surgery. Radiation therapy was delivered with a total dose of 50 Gy in 25 fractions [figure 3]. The patient was received Tamoxifen at 20mg/day after radiationtherapy and was planned to using this medication for five years. No local or distant recurrence was detected during a 36-month follow-up period.

Discussion

This case presentation is the first case in the literature to have used combined adjuvant hormonotherapy and radiotherapy with along follow-up period without any recurrence.

Primary apocrine cancer is a rare cancer, but it is usually seen in the axillary region. In cases presenting with an axillary mass, differentiation from breast apocrine cancer is important. While breast apocrine cancer is generally a triple negative breast subtype, primary sweat gland apocrine cancer frequently expresses estrogen and progesterone receptors. [4, 5]. GCFDP−15 and PAS-positive diastase-resistant material in the cells or luminal positivity is an important immunohistochemical finding that supports a diagnosis of apocrine cancer[6]. However, it is necessary to verify that there is no other organ involvement with clinical imaging to definitively diagnose primary apocrine cancer.

Surgery is the first step in primary apocrine cancer treatment. However, there is no consensus about the adjuvant part of the treatment. There are cases in the literature where radiotherapy and chemotherapy
have been used in adjuvant therapy or followed up after surgery (2,3,7). Apocrine cancer is resistant to chemotherapy. Radiotherapy is recommended in local or regional advanced disease (2,3). Evaluation of Cerb-B2 expression is important especially in locally advanced and metastatic patients. Cerb-B2 expression positivity enables the use of targeted therapy (8). In a retrospective analysis of 186 patients, the median overall survival rate was reported to be 51.5 months for loco-regional disease and 14.5 months for distant metastatic disease (1). The poor survival and lack of treatment options in stage IV disease indicate the need for effective adjuvant treatment.

Conclusion

Apocrine cancer is a rare tumor, for which there is no clear consensus about treatment. The pathological features must be evaluated in detail for treatment, which should be applied with a multidisciplinary approach. Based on this case presentation and literature, adjuvant radiotherapy can be recommended to reduce the risk of local recurrence and hormonotherapy to reduce distant recurrence in patients with hormone-receptor positive primary apocrine carcinoma.

Declarations

Ethics approval and consent to participate:

Ethics committee approval is not required as it is a case report.

Consent for publication:

Consent form was taken from the patient to publish her own data.

Availability of data and material:

not applicable

Competing interests:

The authors declare that there is no conflict of interest.

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Authors' contributions:

GB supervised the treatment of patient; development of work, wrote manuscript and acted as corresponding author. RE was pathologically diagnosed and provided pathological images of the patient. SS planned radiotherapy treatment and applied it to patient and also wrote manuscript. All authors take full responsibility for the content of the final paper.
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Figures
Figure 1

Conglomerate lymph nodes in the right axillary region on T2-weighted sequences of MRI scan

Figure 2
Conglomerate lymph nodes in the right axillary region on PET/CT scan. SUV maximum units of lymph nodes measured 15.5.

**Figure 3**

Field of radiation therapy including right axillary and supra clavicular region
Figure 4

Tumor layers consisting of cells with granular euzophilic large cytoplasm, large round nucleus and prominent nucleolus, separated by a thin fibrous stroma, filling the entire lymph node 1.picture HE x 200 2.picture HE x 100 3.picture HE x 400 4.picture HE x 400 Cytoplasmic positive staining with Gross Cystic Disease fluid Protein-15 (GCDFP-15) in pictures 2 and 3nd