Case Report

Malignant skin adnexal tumor with eccrine differentiation– A rare case report with review of literature

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Introduction

Eccrine carcinoma of skin is very rare with a reported incidence of less than 0.005% of all tumor specimens resected surgically[(1)]. Many times, the clinical features are variable which makes diagnosis difficult[(2)]. Recent studies have classified sweat gland carcinomas into eccrine and apocrine tumors[(3,4)]. The purpose of this case is to discuss the most common problems encountered in the diagnosis of this rare skin adnexal tumor and how immunohistochemistry played a vital role in final diagnosis thus changing the management in this case.

Case report

A 52-year-old male patient presented to chest physician with mass near his right breast (near nipple and areola) retro areolar in location. The mass was tender and painful for six months. It was firm to hard in consistency with rapid increase in size in six months. No skin ulceration or nipple discharge was present. No axillary lymph nodes were palpable either clinically or on ultrasound. Wide local excision of mass was done and sent for histopathology. On gross examination, it was single encapsulated yellowish white mass measuring 3 x 2 cm. On cut section, it was homogenous, firm to hard in consistency with few dilated spaces. Microscopic examination from right breast mass showed a malignant tumor arranged in tubular glandular pattern. The tubular/ductular structures were lined by one-to-many layers of atypical dark baseloid cells. The cells had hyperchromatic, pleomorphic nuclei with scant cytoplasm. Few mitotic figures were noted. At places, the tumor showed syringomatous differentiation and papillary formations with clear to vesicular nuclei. The tumor infiltrated at the periphery into surrounding adipose tissue. The differential diagnoses given were:

1. Tubular carcinoma of breast
2. Primary skin adnexal tumor of breast of eccrine origin
3. Papillary carcinoma of breast

Immunohistochemistry was advised for final diagnosis. The immunohistochemistry done for ER and PR showed positivity. The total Allred score was 3 + 4 = 7 (Intensity + Proportional score) for both. The CK7 was strong positive while CK20 was negative. The above immunohistochemistry can be positive in both, skin and breast carcinoma, hence primary breast marker, mammaglobin was advised.

The mammaglobin was negative in the present case thus confirming the diagnosis as primary malignant skin adnexal tumor with eccrine differentiation (WHO classification 2018) over breast carcinoma.

Discussion

Eccrine carcinomas represent a rare group of tumors with potential for destructive local tissue infiltration and regional, as well as, distant metastasis. The diagnosis is many times difficult due to many overlying features between primary cutaneous and breast carcinoma. Microscopy alone is insufficient to establish eccrine lineage neoplasm because there are no specific microscopic features[(5)]. Immunohistochemistry plays a vital role in the pinpoint diagnosis of primary cutaneous

Histopathological observations

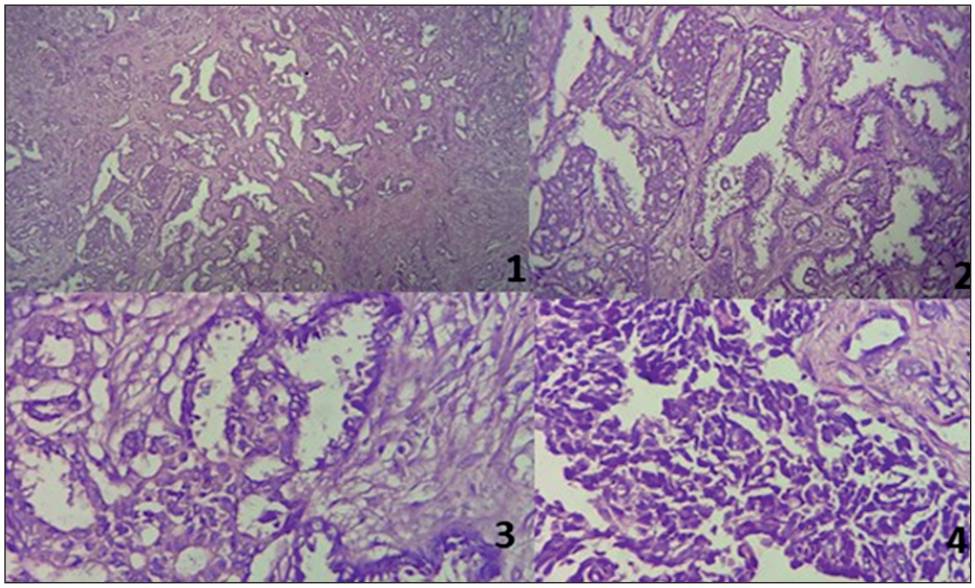

Figure 1 & 2 (H & E, 10x): Eccrine malignant skin adnexal tumor with cells arranged in glandular and cribriform pattern

Figure 3 & 4 (H & E, 40x): Tumor cells showing high N:C ratio, hyperchromatic pleomorphic nuclei with moderate cytoplasm

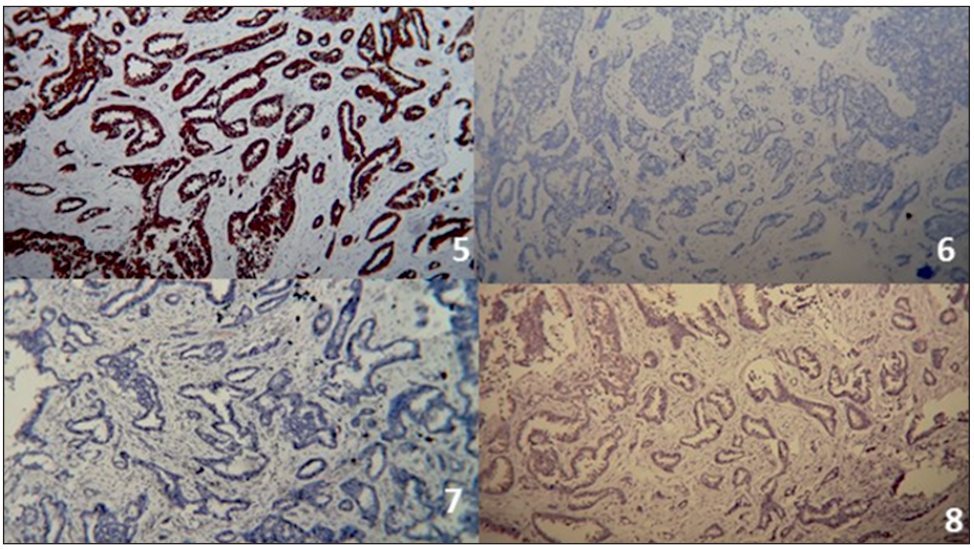

Figure 5: IHC (10x) CK 7 positive, Figure 6: IHC (10x) Mammaglobin negative, Figure 7: IHC (10x), CK 20 negative, Figure 8: IHC (10x) p 63 negative

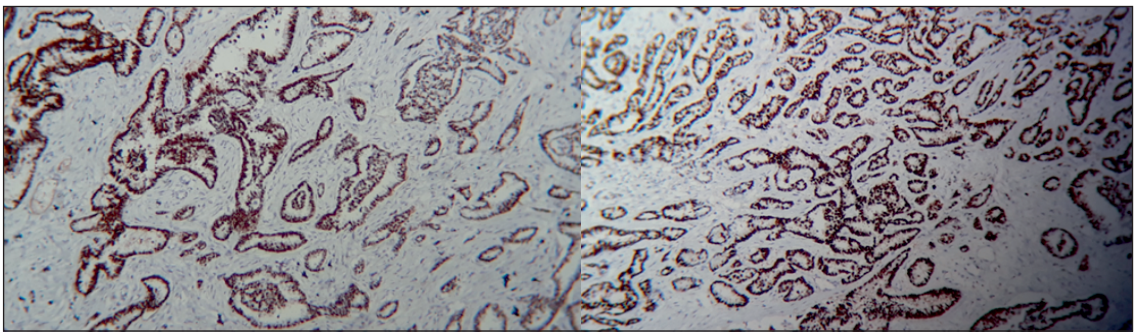

Figure 5: IHC(10x) ER and PR positive

carcinoma and helps in better management of the patient. It is known that apocrine-eccrine carcinomas often express estrogen receptors and progesterone receptors[6]. Mammaglobin-A (MGA), a protein first identified as being over-expressed in breast carcinoma, is a newer marker in common use for the identification of metastatic carcinomas of breast origin. MGA has been detected by IHC and PCR in 48–95% of primary breast carcinomas and in metastatic carcinoma derived from breast.3A Mammaglobin is more sensitive but less specific than GCDFP-15[7].

Recent studies have classified sweat gland carcinomas into eccrine and apocrine tumors[3,4]. In addition, no established authentic criteria are available for differentiation of an eccrine from an apocrine tumor[8]. Moreover, both eccrine and apocrine forms seem to exist in same categories. These tumors were originally reported as basal cell tumors with eccrine differentiation (eccrine epitheliomas). Subsequently, they have been reported as syringoid eccrine carcinomas. They are group of malignant eccrine tumors composed of varying numbers of tubular structures which may be basaloid at one end of the spectrum and syringoma-like at the other end. Eccrine carcinoma differs from microcystic adnexal carcinoma by having areas with a basaloid cell pattern, in contrast to the squamoid features of the others[9].

Conclusion

Eccrine carcinoma is an uncommon cancer that accompanies a poor prognosis. The clinical presentation of EC can be equivocal and result in misdiagnosis, which adversely affects patient outcomes. Correlation of molecular profiles to tumor responses would provide helpful data to identify efficacious treatment regimens in the future.

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ORCiD

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