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A CASE REPORT OF A RARE CASE OF APOCRINE ADENOCARCINOMA OF THE EYELID

Ophthalmology

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ABSTRACT

Purpose: To study a case of Sweat Gland Carcinoma of Eyelid **Result:** Ocular sweat gland carcinoma is a rare entity. Arising from the Gland of Moll, they are of Apocrine or Eccrine origin. The apocrine tumor cells have apical decapitation while the eccrine tumors have secretory units with tubules. We report a 49years old female with swelling in the right upper eyelid for 1 year which started bleeding for 1 month. Incisional biopsy suggested sweat gland carcinoma. Right eyelid sparing orbital exenteration with lesion excision was done. Surgical margins were assessed intraoperatively with frozen sections. HPE of the specimen showed diffused sheets of cells with vacuolated cytoplasm, frequent mitosis, extensive apoptosis with no squamous, basal or sebaceous cell differentiation. Immunohistochemistry was positive for Pancytokeratin/ CK7 and CEA. The patient had a good postoperative evolution. **Conclusion:** Sweat gland carcinoma can clinically and histopathologically mimic other lesions of the same site. This adds to the difficulty in diagnosing such lesions. Immunohistochemistry serves as a valuable tool for diagnosing lesions with apocrine differentiation. Differentiating eyelid apocrine carcinoma from breast metastatic carcinoma is a challenge and the clinico-pathologic correlation is mandatory.

KEYWORDS

Apocrine, Eccrine, Gland of Moll

INTRODUCTION

Sweat gland carcinoma, which arises from apocrine glands of the eyelid cilia, is a very rare entity. [1] Traditionally, these lesions are classified as either of eccrine or apocrine origin. The cardinal feature of apocrine tumors includes having apical decapitation secretions from the cells rather than forming simple secretory units with tubules, such as the case with their eccrine counterpart[2]–[4]. Both the types share a common immunohistochemistry panel, both being positive for Protein 15 and Glycoprotein Carcinoembryonic Antigen (CEA). Apocrine lesions can be both benign and malignant. Metastases are common in apocrine gland carcinoma and prognosis is generally very poor [4]. We treated a patient with apocrine gland carcinoma that arose from the superior eyelid with a broad morphological spectrum and with extensive immunohistochemical analysis.

Apocrine adenocarcinoma typically arises in areas populated by apocrine glands, the most common site being axilla, others being the eyelid, ear, scalp, anogenital region, chest, foot, lip, and breast. [5]. A confirmed clinical diagnosis can rarely be made alone. A cytological diagnosis followed by histopathology is necessary for confirmation. There are only a handful of cases describing the cytological features of this neoplasm. [6]

In the eyelids, the tumour arises form the glands of Moll. It is more commonly seen in males, especially in the older age group. The lesions closely resemble a chalazion. Thus, a thorough investigative workup of recurrent chalazion is recommended. The other differential diagnosis include apocrine hidrocystoma, apocrine cytadenoma, primary cutaneous mucinous carcinoma and endocrine mucin producing sweat gland carcinoma. The apocrine hidrocystoma show Unilocular/multilocular cyst which are dark blue in colour. These are lined by single or double cuboidal-columnar epithelium located above outer myoepithelial cell layer. They also contain PAS positive granules. Apocrine cystadenoma shows cysts demonstrating papillary growth of columnar cells with fibrovascular stroma. They show positivity for Cytokeratin and human milk fat globulin 1. Primary cutaneous mucinous carcinoma is a pink to flesh coloured, slow growing, mucinous sweat gland tumour, most commonly located on the eyelid. It may show apocrine differentiation and is positive for PAS, CK7 (Cytokeratin), estrogen receptor, progesterone receptor and negative for CK 20. The endocrine mucin producing sweat gland carcinoma is a low grade, skin coloured, sweat gland cancer commonly located on the eyelid with neuroendocrine differentiation. It has papillary, solid and cystic components.

The typical histological feature of Apocrine adenocarcinoma include strongly eosinophilic cytoplasm, PAS positivity, decapitation secretion, presence of iron positive intracellular pigment. The tumour has small acini with a cuboidal epithelium. The epithelium contains large nucleated cells with granular chromatin. However, all features may not be present due to poor differentiation. Immunohistochemistry further helps in confirming the diagnosis in suspected cases. GCDFP 15 (Gross cystic disease fluid protein) is a helpful marker for staining apocrine tumours. CK 7 (Cytokeratin 7), Mammaglobin, Adipophillin are good for distinguishing primary from metastatic apocrine adenocarcinoma. CEA (Carcinoembryonic Antigen) supports apocrine or eccrine origin.

CASE REPORT

A 49years old female, with no previously medical disease came with history of progressively increasing nodule in the upper eyelid of the right eye, the size of which being approximately 10 mm with progressive growth occurring over 9 months. On physical examination on the upper right eyelid a nodule of 5 x 4 x 4 cm dimension was found which had started bleeding 1 month back. The lesion was of a firm consistency and was associated with pruritus and pain. The right upper eyelid was remarkably swollen and the tumour invaded the intraorbital fossa. The conjunctiva was hyperemic, edematous, and hyperlacrimal. There was right exophthalmos, and orbital movement was limited. The skin around the right eyelid was neither red nor swollen. A swelling over pre auricular area on the right side was noted.

Insicional biopsy was done subsequently with histopathological report of moderately differentiated squamous cell carcinoma. Microscopic analysis of the tumor revealed dysplastic stratified squamous lining epithelium with cells forming tubules and papillary structure with a tumour arising from it and invading the subepithelium. At higher magnification, the cells were large and polygonal with eosinophilic cytoplasm showing apical decapitation, round to oval nuclei with vascular chromatin, irregular nuclear membrane and prominent nucleoli; brisk mitotic activity, atypical mitosis was noted. The infiltrative tumor border reached the margins of the biopsy and vascular invasion was observed.

Right eye lid sparing orbital exenteration was done and the the lesion was then excised and the surgical margins were assessed intra-operatively with frozen sections. Microscopic examination of this specimen showed an epithelial tumor composed of tubules and pseudopapillary structures showing similar cytological characteristics

as the incisional biopsy. The margins were free of neoplastic involvement. Transoperative study confirmed negative margins. No evidence of metastasis in the section of orbital fat was noted. The intervention performed was without any complications. The patient had a good postoperative evolution. She was sent to medical oncology, who considers leaving in observation not offering adjuvance until today without recurrence data

An immunohistochemical panel was performed on formalin-fixed paraffin-embedded (FFPE) tissue and showed positivity for Pancytokeratin (CK)-7 and showed focal cell immunoreactivity for GCDPF 15 (Gross cystic disease fluid protein) supporting the sweat gland nature of the lesion, and carcinoembryonic antigen (CEA), supporting the malignant nature of the cells.

Tumour was immunonegative for androgen receptor/podoplani/ BER-EP4/CK20/Syneptophysin/S100 Protein/GCDFP 15/Oestrogen receptor.

No recurrence of the lesion has been documented after 6monthly follow up.

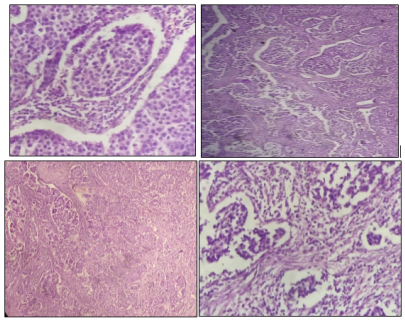

Figure: 1 HPE Report: moderately differentiated squamous cell. Microscopic report: dysplastic stratified squamous cells with tumor invading the sub-epithelium. At higher magnification, cells were large, polygonal with eosinophilic cytoplasm with characteristic apical decapitation and atypical mitosis. The infiltrative tumor reached the margins of the biopsy and vascular invasion was observed

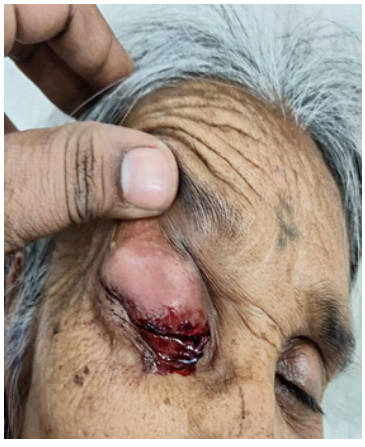

Figure 2: Preop picture of patient showing proptosis and bleeding from the mass

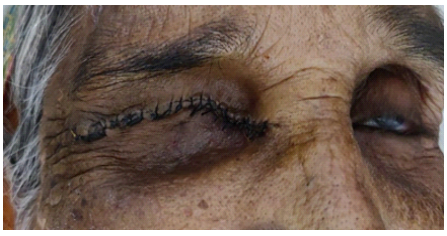

Figure 3: Postop picture of the patient after orbital exenteration

DISCUSSION

The sweat gland tumour arising from the eyelids such as we experienced is even more rare [7]. The sweat gland tumours are classified as eccrine gland and apocrine gland tumours. Usually, the eccrine glands secrete serous fluid, while the apocrine glands secrete viscous fluid such as mucin [7,8]. Moll's gland is the proper term for the apocrine glands of the eyelid. Because the apocrine glands exist mainly at the axilla, anus, genitalia, external ear meatus and eyelid; most of the apocrine gland tumours occur in these locations. This local frequency of occurrence is important to consider in diagnosis and treatment [9]. Another criterion for diagnosis is pathological findings. Hyper eosinophilic matrix inside the tumour cells and decapitation secretion are characteristic findings for apocrine glands. Decapitation secretion is an interesting secretion style. The secretory process of secretory cells leads into the secretory duct and produces a hyper viscous liquid. Furthermore, positive PAS staining is found inside the tumour cells and lumen because mucous fluid secreted from the apocrine glands involves a large quantity of mucin [10]. Moreover, apocrine gland tumours stain with anti-GCDFP15 antibody, which is a specific marker for apocrine gland and breast cancer [10]. In addition, we made sure that these tumour cells did not stain with anti-estrogen and anti- progesterone antibodies, to avoid mismanaging such a tissue as a metastatic mammary carcinoma in our institute. As mentioned above, the apocrine gland tumour is diagnosed from pathological findings and the existence of apocrine glands in the region from which the tumour arises. Our patient's tumour fulfilled all these conditions.

CONCLUSION

Sweat gland carcinoma can clinically and histopathologically mimic other lesions of the same site. This adds to the difficulty in diagnosing such lesions. Immunohistochemistry serves as a valuable tool for diagnosing lesions with apocrine differentiation. Differentiating eyelid apocrine carcinoma from breast metastatic carcinoma is a challenge and the clinico-pathologic correlation is mandatory.

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