Epithelioid Hemangioendothelioma: An unusual presentation

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Introduction

Epithelioid hemangioendothelioma (EHE) represents a borderline or intermediate grade malignant vascular tumor in a spectrum of vascular proliferations between the hemangioma and conventional angiosarcoma.1-2 Owing to the different clinicopathological features of a subgroup, EHE was recognized as an entity by Weiss and Enzinger in 1982. It was earlier classified in a group of neoplasms known as “histiocytoid hemangiomas.”3

This angiocentric vascular neoplasm has metastatic potential and is composed of epithelioid endothelial cells arranged in short cords and nests placed in a distinctive myxohyaline stroma. The neoplasm may occur at any age but it is rare during childhood and affects both sexes equally.2 Nearly one half to two-thirds of cases originate from a vessel, usually a small vein and rarely from a large vein or artery.10

Case report

This is the case of a 26 year old male with history of a seizure disorder who visited the ophthalmologist for evaluation of what he thought was a wart. The lesion was a painless violaceous nodule located on the left medial lower lid. He had no systemic complaints.

The lesion was removed on initial evaluation and sent for pathologic examination. The specimen consisted of a fragment of skin with an elevated surface and subcutaneous tissue measuring 0.7 x 0.5cm and 0.3cm in thickness.

Histology showed a dermal nodule with irregularly infiltrating borders. It had vaguely nests epithelioid cells with abundant eosinophilic cytoplasm and intracytoplasmic vasculation (Figure 1). There was moderate atypia and mitotic activity with scattered dilated vascular channels at the periphery. The tumor extended to the skeletal muscle and into the deep margin of resection. A melanotic lesion was suspected. Immunostains were positive for cytokeratin AE1/AE3 (Figure 3), CD31 (Figure 2), focal CD34 with a moderately high index (up to 25% in some areas), Chromogranin, synaptophysin, desmin, myosin, actin, HMB-45, MART-1, HHV-8, S100 were negative. In general, the prognosis of isolated cutaneous lesions after simple complete surgical excision seems good compared to systemic EHE. However, local cutaneous recurrence has been described.11 Long term follow up studies are needed to evaluate metastatic potential. Complete excision, further evaluation to rule out the possibility of additional lesions, as well as clinical follow up is recommended.

Discussion

Epithelioid vascular neoplasias such as epithelioid hemangioendothelioma, epithelioid hemangioendothelioma and epithelioid angiosarcoma have been well described. Cutaneous epithelioid hemangioendothelioma is extremely rare. They may be of primary or secondary origin. Cases of skin metastasis from thoracic EHE (e.g. pleura) and bone have been described.7,11

Clinical presentation is variable. Some cases present as a dome shaped slightly erythematous nodule, which is sometimes painful, or as multiple erythematous nodules or plaques. The main cutaneous locations are the extremities (including palms and soles), head and trunk.1,2,11

Histologically, cutaneous EHE is similar to soft tissue lesions. Lesions usually affect superficial or deep (60%of cases) soft tissue, although similar lesions have exceptionally been reported in the skin and oral cavity. The most common sites of occurrence are the extremities (two-thirds of cases), followed by the head and neck region (10-15%), trunk and mediastium (15%). Lungs and liver represent the most commonly affected internal organs. Metastases are noted in 20% to 30% of cases.3-11

Here we describe the rare occurrence of an epithelioid hemangioendothelioma that presented as a peribulbar skin lesion in a 26 year old male. Knowledge and a high degree of suspicion are required to diagnose this neoplasm in such an unusual location, as seen in this case.

Approximately 90% of EHE are characterized by a reciprocal t(1;3)(p36;q25) translocation. The translocation results in WWTR1- CAMTA1 gene fusion, which is absent from all other vascular neoplasms, demonstrating it to be a disease defining genetic alteration.4

Establishing a diagnosis may be assisted by the use of immunohistochemistry stains. Morphologically EHE may be confused with other lesions, from hemangiomata to a squamous cell carcinoma and thus immunohistochemical analysis is required. Most cases are positive for CD31, CD34, and factor VIII with focal CK7 positivity.11 EHE can have strong diffuse positivity for CD31 present in tumors of soft tissue, viscera, and skin metastasis, but not primary skin tumors.5 The role of Podoplanin (seen in other vascular neoplasms) in the identification of this tumor has also been studied.6 It is usually negative for epithelial markers such as EMA, AE1/AE3, CAM 5.2 and for S100. In contrast, our case was positive for the Pan(-)keratin (AE1/ AE3) antibody.

In general, the prognosis of isolated cutaneous lesions after simple complete surgical excision seems good compared to systemic EHE. However, local cutaneous recurrence has been described.11 Long term follow up studies are needed to evaluate metastatic potential. Complete excision, further evaluation to rule out the possibility of additional lesions, as well as clinical follow up is recommended.

Figure 1: Vaguely nodular group of epithelial cells with eosinophilic cytoplasm, some with intracytoplasmic lumens, arrow (H&E, 200x)

Figure 2: CD31 immunostain in tumoral cells infiltrating muscle (200x)

Figure 3: Pan-keratin stain positive in some tumoral cells (200x)

Figure 4: Phosphothione H3 showing a high mitotic activity (200x)

References