Malignant Epithelioid Hemangioendothelioma of the Lip: A Case Report and Comprehensive Literature Review

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Malignant epithelioid hemangioendothelioma (MEH), also known as high-risk epithelioid hemangioendothelioma, is a low- to intermediate-grade vascular malignancy originally described by Weiss and Enzinger in 1982 as a vascular neoplasm of endothelial origin. This very rare vascular neoplasm has been described mainly in soft tissue, but also in various organs and locations, including the liver, lung, brain, colon, lymph nodes, peritoneum, spleen, bone, skin, heart, soft tissues, and vascular system. Several cases have been described in the head and neck, including the submandibular gland, parotid gland, nasal cavity, parapharyngeal space, maxilla, maxillary sinus, occipital bone, oral cavity, thyroid gland, neck, scalp, larynx, and mandible. This case report is the first description of MEH presenting as an exophytic lower-lip lesion.

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Report of Case

A 52-year-old woman presented to the oral and maxillofacial surgery outpatient clinic for evaluation. The

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patient reported a 3-week history of an ulcerated 2.7-cm pedunculated growth to the left lower lip. She denied any trauma or irritation to her face or lip. Her medical history was significant for hypertension, hyperlipidemia, and stable angina, which was controlled with sublingual nitroglycerin. The patient denied any history of similar lesions. At clinical examination, the lesion was firm, movable and crossed the vermillion border (Fig 1). The patient did not complain of pain on palpation or paresthesia.

Physical examination showed no intraoral lesions, lymphadenopathy, or hepatosplenomegaly. The differential diagnosis included reactive inflammatory conditions, such as pyogenic granuloma or irritation fibroma, condyloma, melanoma, and squamous cell carcinoma.

The patient was scheduled for an excisional biopsy under local anesthesia in the outpatient clinic. She was anesthetized with bilateral mental nerve blocks and local infiltration. An elliptical incision was
made at the base of the lesion, the tissue was undermined, and the lesion was excised without difficulty. The surgical site was closed primarily with 3-0 silk sutures with emphasis on approximating the vermillion border. The patient was seen for a 1-week follow-up and suture removal appointment. The incision site displayed a delay in healing that led the authors to suspect something unusual (Fig 2). The patient returned to the clinic 2 weeks later with complete closure of the wound.

On microscopic examination (Fig 3), sections of the 2.3- × 1.6- × 1.4-cm skin nodule showed polypoid masses of tissue partly covered by hyperkeratotic squamous epithelium with no evidence of squamous dysplasia. There were areas of ulceration covered by fibrinopurulent exudate and ulcer crust in which many staphylococci were embedded. There was substantial edema and widely separated capillary-type vessels beneath the epithelium. These displayed nuclear variation in size and shape, with some nodular excrescences extending into the lumens. These sometimes blended with a more hemorrhagic zone. In the more deep-seated areas, there were a distinctly spindle-shaped cellular proliferation, and many cells with epithelioid features and cytoplasmic vacuoles were present. There was considerable nuclear pleomorphism and a distinctly increased mitotic rate. There also were small areas of hemorrhagic necrosis. The tumor was present throughout all portions of the specimen, including the deep skeletal muscle biopsy margin. The histologic grade varied among well, moderately, and poorly differentiated.
Initially, the general pathologist considered the following possible diagnoses: composite hemangioendothelioma, malignant epithelioid hemangioendothelioma, sarcomatoid squamous cell carcinoma, Kaposi sarcoma, epithelioid angiosarcoma, and bacillary angiomatosis. To finalize the diagnosis, the oral and maxillofacial pathologist was consulted and various immunohistochemistry stains were performed (Fig 4).

Immunohistochemistry stains were positive for CD34, CD31, and smooth muscle actin. Keratin AE1/AE3, S-100, vimentin, human herpesvirus 8, and Gomori-Grocott methenamine silver stains were negative in the cells of interest. A diagnosis of MEH was made.

Owing to the rare nature of MEH, there were several discussions among pathology, oncology, and oral and maxillofacial surgery in regard to the surgical and medical management of this patient. Because the lesion was isolated to the lower lip, with no lymphadenopathy a normal chest radiograph, and the clinical course of MEH is intermediate between hemangioma and angiosarcoma, it was determined that the best course of definitive treatment would be a full-thickness V-shaped wedge resection of the lesion with 8-mm margins. Primary closure was obtained with close attention to approximating the vermillion border (Figs 5, 6). The patient will be followed monthly for 6 months, every 6 months for 2 years, and yearly thereafter.

Discussion

MEH is a rare vascular tumor of endothelial cell origin with a clinical course intermediate between hemangioma and angiosarcoma. It is most often described in the soft tissue of the lungs, liver, lymph nodes, bones, brain, or skin, specifically over the extremities. There are roughly 20 documented cases in the head and neck, and this is only the second documented case on the lower lip. The first case of lip MEH was described by Polk and Webb in 1997. In their case, the lesion was located at the upper lip vermillion of a 30-year-old woman. The lesion was present for 2 months and was described as a slowly enlarging, 5-mm, violet-brown, soft, moveable, dome-shaped, rubbery papule that was treated with wide local excision. It showed no residual tumor, and there was no evidence of recurrence or metastasis 4 months later. The second reported lip case was in the lower lip. This 18-year-old patient presented with a 6-month history of a slowly growing painless swelling in her lower lip that was excised with a tumor-free margin but reoccurred 4 months later with metastatic disease in the sentinel node biopsy found during wide local excision of the recurrence. A functional neck dissection was completed on the affected side, but no further tumor was identified in any lymph nodes. In the present case, this lesion also presented as a relatively rapidly growing lesion (as per patient report) and the patient did not exhibit any lymphadenopathy. However, in light of the recurrence noted in the case described by Anderson et al., the present patient will continue to be followed by oncology and the authors’ clinic on a monthly basis for at least 6 months and twice a year for at least 2 years thereafter. Unfortunately, the rarity of this lesion on the lips makes it difficult to determine the risk of metastasis. It can be assumed that the intermediate nature of MEH would place it at low risk of recurrence and metastasis, similar to low-
and intermediate-grade squamous cell carcinomas of the lip. With regard to surgical treatment of the residual lesion, wide local excision was considered the treatment of choice, with a minimum 8- to 10-mm margin of normal tissue, which is generally recommended for carcinomas of the lip.
For this lesion, various vascular lesions were considered, but MEH and composite hemangioendothelioma had a high level of suspicion. Composite hemangioendothelioma, a low-grade malignant vascular tumor, was considered because the predominant histologic components normally consist of a mixture of the patterns found in epithelioid and retiform hemangioendothelioma. In low-power field, it appeared to be a pyogenic granuloma (lobular capillary hemangioma) because of the intradermal spindled cell and vascular proliferation with focal central ulceration and symmetrical appearance of the tumor. However, in the high-power view of the rest of the tumor, there were areas that appeared to be epithelioid hemangioendothelioma because the cells were plump, epithelioid, and spindles with cytoplasmic vacuoles. Other areas resembled the epithelioid variant of angiosarcoma in which sheets of tumor cells have greater atypia and areas of necrosis. Because of the apparent variation in the present lesion and the rarity of these 2 diagnoses in the lip, it was decided to treat the lesion as the more aggressive MEH to ensure proper treatment and follow-up for this rare entity.

References
