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Case Report Open Access

Squamous Cell Carcinoma Metastatic to the Choroid

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Abstract

We describe a 64-year-old caucasian man with squamous cell carcinoma of the base of the tongue that metastasized to the choroid. The primary tumor was known to be high risk HPV positive and initially diagnosed as T3N3M0 stage IVB two years prior to presentation. Funduscopy revealed an 18 x 17 x 8.9 millimeter mushroom shaped amelanotic tumor with intrinsic vascularity. Ultrasonography revealed medium to high internal reflectivity with echolucent pockets and a positive angle kappa. Marked intrinsic vascularity and associated retinal detachment was also observed. Fine needle aspiration biopsy was performed and 40cGy where delivered via plaque brachytherapy. Histopathologic and cytologic findings of the primary tumor and of the choroidal tumor, respectively are discussed in detail.

Keywords: Metastasis; Choroid; Cytology; Fine needle aspiration

Case Presentation

A 64-year-old caucasion man with a ten-day history of a superior scotoma on the right eye was initially seen by his optometrist who referred him to ophthalmic oncology clinic at Cole Eye Institute for evaluation of a mushroom shaped choroidal tumor (right eye). The patient had no other ophthalmic complaints. His past medical history was significant for recurrent high risk type humanpapillomavirus squamous cell carcinoma (SCC) of the oropharynx (base of the tongue) (Figure 1A and B). Two years prior to presentation the patient had noted a neck mass that on workup was found to be SCC with extensive cervical lymphadenopathy and absent distant metastatic disease (T3N3M0). At that time he was treated with surgery and 7350cGy in 35 fractions with concurrent cisplatin. Left facial nerve palsy with exposure keratopathy required upper eyelid gold weight placement. His last chemotherapy dose was seven months prior to presentation of visual symptoms. Metastatic disease to the lung and left ear was noted at this time and because of this he was scheduled to re-start chemotherapy. Family history and social history where not contributory. He had no known allergies and was on a multivitamin and levothyroxine 100 micrograms once a day.

Ophthalmic examination revealed best corrected visual acuity of 20/125 OD and 20/25 OS with pressures of 10 and 11 mmHg respectively. No afferent pupillary defect was observed. Visual fields by confrontation confirmed a scotoma of the superior visual field of the right eye. External examination revealed left sided partial facial paresis with minimal lagophthalmos. On anterior segment slit lamp examination of the right eye, inferior feeder vessels were noted (Figure 2A). Fundus examination of the right eye revealed a mushroom shaped amelanotic cilio-choroidal mass measuring approximately 18 x 17 x 9 mm in size. An overlying serous retinal detachment from 3 to 9 o´clock was present. Intrinsic vascularity was observed within the tumor (Figure 2B). Ultrasonography revealed a lobulated lesion at 6:00 o ´clock posterior to the equator. The tumor was irregularly structured with medium to high internal reflectivity anteriorly and low reflectivity posteriorly. Echolucent pockets and a positive angle kappa was observed. The retina was shallowly detached over portions of the lesion (Figure 2C and 2D). No extraocular extension was detected. Left eye examination was unremarkable.

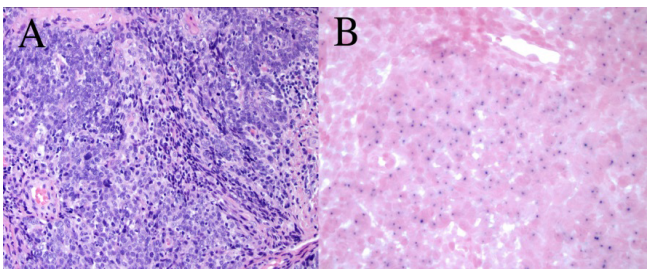

Figure 1: Sheets of non-keratinizing squamous carcinoma infiltrate fibrovascular tissue in this base of tongue biopsy specimen. The high nuclear to cytoplasmic ratio and the lack of keratinization are characteristic of human papillomavirus associated oropharyngeal squamous carcinoma (Hematoxylin and eosin) (A) .Chromogenic in situ hybridization for high risk human papillomavirus types illustrates the characteristic punctate pattern of positive staining in carcinoma nuclei (B).

These findings where suggestive of metastatic disease versus choroidal melanoma. Following discussion of risks, benefits, alternatives and complications of fine needle aspiration biopsy followed, enucleation, and plaque radiation, the patient opted for biopsy followed by radiation. Fine needle aspiration biopsy was performed under monitored anesthesia care with retrobulbar block. The patient was returned to the postop care unit while the sample was being processed. The sample was read as squamous cell carcinoma and the decision was made to proceed with immediate plaque brachytherapy with a total of 40 Gy to the apex of the tumor (Figure 3). The patient tolerated the insertion and removal of the plaque without any complications.

Discussion

The choroid, with its abundant blood supply is often the site for metastatic disease [1]. While breast, lung and gastrointestinal malignancies are the most common primary sites, metastatic squamous cell carcinoma is extremely rare [2]. A review of the

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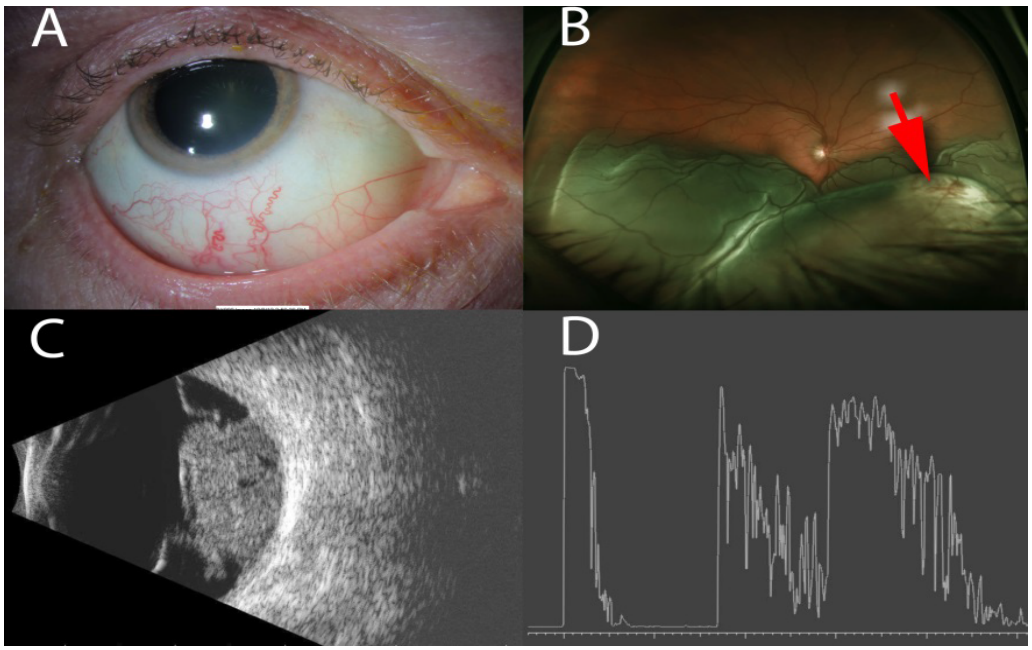

Figure 2: External photograph of the right eye. Engorged corkscrew vessles are present along the inferior aspect of the globe (A). Wide field fundus image reveals a serous retinal exudate from 3-9 o´clock. A large mass with intrinsic vasculature (arrow) is visualized under the detached retina (B).). Ultrasonography revealed a lobulated lesion with medium high internal reflectivity anteriorly and low reflectivity posteriorly. The retina was shallowly detached over portions of the lesion. Echolucent pockets and a positive angle kappa was observed. (Figure 3C-D).

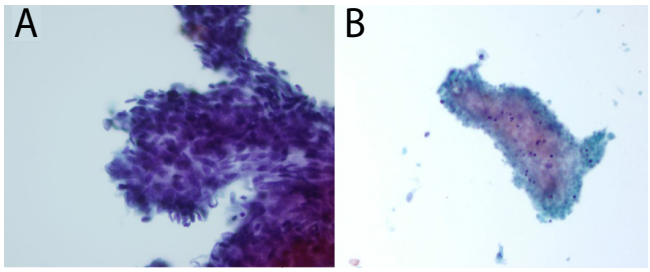

Figure 3: The aspirate sample contains relatively large, thick, syncytial aggregates of squamous cells with nuclear pleomorphism. This pattern is characteristic of squamous carcinoma (Papanicolaou stain, intermediate magnification) (A). The aspirate sample has abundant necrosis (B).

English literature revealed only one published case of oropharyngeal SCC (gingival) metastatic to the choroid [3]. Our case represents a high risk human papillomavirus associated oropharyngeal squamous carcinoma metastatic to the choroid. Human papillomavirus is a well established cause of oropharyngeal squamous carcinoma, increasing in incidence recently [4]. Rare cases of squamous cell carcinoma with non-oropharyngeal, non-pulmonay primary sites such as esophagous, uterus and thyroid have been published [5-8]. Our case presented as a large amelanotic mushroom shaped tumor with intrinsic vasculature. Ultrasonography revealed medium to high internal reflectivity anteriorly and low reflectivity posteriorly Echolucent pockets and a positive angle kappa were observed. Marked vascularity was also observed. Clinical findings and ancillary testing all suggested the diagnosis of choroidal melanoma, clinical history however was more consistent with that of metastatic squamous cell carcinoma.

Recently, fine needle aspiration biopsy has become popular for prognostication of choroidal melanoma. Diagnostic fine needle aspiration biopsy is rarely indicated. This case illustrates the use of this technique in providing adequate diagnosis and treatment planning. The diagnosis was made within minutes of the biopsy and the treatment was initiated same day. If biopsy results would have confirmed choroidal melanoma; the treatment duration would have been extended to deliver usual 85 Gy to the apex as described by the Collaborative Ocular Melanoma Study [9]. Early treatment with brachytherapy provides effective and rapid palliation and prevent the need for subsequent enucleation.

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