A Metastatic or Metachrone Tumor: A Case Report of Bilateral Ocular Surface Squamous Cell Carcinoma

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Abstract

Cutaneous squamous cell carcinoma of the ear represents a high-risk tumor location with an increased risk of metastasis and local tissue invasion. However, a metastatic carcinoma of the conjunctiva is uncommon. We present an unusual case of an 80-year-old man who underwent a tumorectomy of a squamous cell carcinoma of the lobule of both ears, and present a bilateral ocular squamous neoplasia pathologically confirmed. Medical examination revealed a tumor recurrence in the right ear. A cervico-thoraco-abdomino-pelvic CT showed suspicious pulmonary nodular lesion with deep lymphadenopathy, and an iliac bone lysis. The patient declined adjuvant chemo-radiation therapy.

Keywords: Conjunctiva; Squamous cell carcinoma; Biopsy; Metastatic cancer; Photodynamic therapy

Introduction

The term of Ocular Surface Squamous Neoplasia (OSSN) is used to describe neoplastic epithelial abnormalities in the conjunctiva and cornea, ranging from squamous dysplasia to invasive squamous cell carcinoma [1]. For the first time, it was described by Lee and Hirst in 1995 as an umbrella covering the intraepithelial area that invades conjunctiva and cornea. The incidence of OSSN varies from 0.02 to 3.5 per 1,00,000 inhabitants and varies geographically, with greater frequency in equatorial regions and in older white men. Similar to squamous lesions of the skin, corneal and conjunctival squamous neoplasia is unlikely to metastasize systemically, but it can extend locally [2,3].

Bilateral OSSN is extremely rare. We report through the following case report the clinical presentation, histopathology of tumor proliferation of a patient diagnosed with bilateral OSSN.

Case Report

An 80-year-old man was referred for a bilateral ocular tumor. A year before his consultation, he had undergone a tumorectomy of a squamous cell carcinoma moderately differentiated of the lobule of both ears. The tumor resection was complete, without a residue, and without a metastatic disease (head MRI and cervico-thoraco-abdomino-pelvic CT confirm that the disease was not metastatic).

Our patient had no history of ocular penetrant or contusive traumaism, toxin exposure or tobacco use. An ophthalmic examination revealed a visual acuity of counting fingers at 1 m in the right eye, and light perception in the left eye (Figure 1). Biomicroscopic examination showed a suspicious lesion; an irregular nodular gelatinous elevation in the nasal conjunctiva invading cornea in the right eye (Figure 2) and invading the entire ocular surface in the left eye (Figure 3). Fundoscopy was normal in both eyes. The head and neck exam showed a recurrence of the ear cancer.

In the right ear; a nodular tumor measured 1 by 1.4 cm, clinically extended to the middle crus of the antihelix (Figure 4). In the left ear, the cicatrice of the lobule skin produced a considerable loss of substance (Figure 5). The patient didn’t have any lymphadenopathy palpable in the head and neck region.

The patient Karnofsky performance status scale was at 60%. An oculo-orbital CT showed a superficial lesion in the right eye at the bulbar conjunctiva. In the left eye, a tumor formation of the left internal canthus well limited with dimension of 14.3/24 mm, with extension to the lacrymo-nasal duct and without a lytic or a condensing bone reaction. The tumor came in contact with the insertion of the right internal muscle and laterally it pushed the eye with a slight deformation (Figure 6).

A cervico-thoraco-abdomino-pelvic CT showed suspicious pulmonary nodular lesion with deep lymphadenopathy, and an iliac bone lysis. The patient underwent a complete excisional removal of the conjunctival lesions in the right eye (Figure 7), and a biopsy of the lesions in the left eye. The patient received topical mitomycin 0.02%...
one drop three to four times daily for 15 days post operatively and a topical corticosteroid for the first week.

Histopathological examination of the specimen revealed acantholic epithelium with squamous metaplasia and abnormal acanthotic changes. The tumor cells were characterized by pleomorphism and hyperchromasia.

Figure 2: A nodular lesion invading the nasal cornea in the right eye.

Figure 3: A nodular lesion invading the entire ocular surface of the left eye.

Figure 4: Right ear; a nodular tumor measured 1 by 1.4 cm, clinically extended to the middle crus of the antihelix.

Figure 5: Left ear, the cicatrice of the lobule skin produced a considerable loss of substance.

Figure 6: Oculo-orbital CT: A superficial lesion in the right eye at the bulbar conjunctiva. In the left eye, a tumor formation of the left internal canthus well limited, with extension to the lacrimeo-nasal duct and without a lytic or a condensing bone reaction. The tumor comes in contact with the insertion of the right internal muscle and laterally it pushes the eye with a slight deformation.

Figure 7: A complete excisional removal of the conjunctival lesions in the right eye.
mitotic figures. These findings were consistent with a diagnosis of squamous cell carcinoma of the conjunctiva. A subsequent biopsy of the left conjunctiva revealed a squamous metaplasia of the epithelium with acanthotic and dysplastic changes, with an extensive chronic inflammatory cell infiltrate in the stroma. These findings were also consistent with a diagnosis of squamous cell carcinoma. This patient and his family declined adjuvant chemo-radiation therapy, and they planned for a regular follow-up visit.

Results and Discussion

The factors that are believed to contribute in the development of the ocular surface squamous cell neoplasia are ocular trauma, ultraviolet light exposure, predisposing genetic factors and infection with Human Papilloma Virus (HPV) [4,5]. The conjunctiva as a localization of metastatic carcinoma is uncommon and is not even alluded to in most major clinicopathological series of metastatic cancer to the ocular region [6-8].

Three cases of bilateral conjunctival tumors were documented. The first case was associated with HPV and multiple keratinizing and verrucous lesions of the bulbar and tarsal conjunctiva [9]. The other reported case was associated with neurodermatitis and the last case of bilateral conjunctival tumor was seen in a xeroderma pigmentosum patient [10,11]. The only reported case in Iranian journal was a primary SCC of the cornea which is reported by Hosseini et al. [12].

Hence, our case is not only a rare case of bilateral conjunctival, but to the best of our knowledge it is also the first reported bilateral case of a conjunctival metastatic SCC. Our case is a conjunctival metastatic SCC of a primary ear skin tumor, a cutaneous squamous cell carcinoma of the lobule of both ears, which is a high-risk tumor location with a high risk of metastasis and local tissue invasion [13]. Cutaneous squamous cell carcinoma with auricular involvement has a metastatic rate of approximately 15.5% and destruction of cartilage is a significant risk factor for metastatic disease [14,15]. The principal prognostic factors are tumor depth and diameter, for determining risk of local recurrence and metastasis [16]. Other conditions must be remembered in differential diagnosis of a bilateral conjunctival tumors like; pinguecula, pterygium, papilloma, conjunctival melanoma and paraneoplastic lesions [17,18].

The treatment of primary conjunctival squamous neoplasia consists on various modalities like; surgical removal, cryotherapy and photodynamic therapy. There are also non-surgical methods for treatment, consisting on delivering high drug concentrations [8,12]. Our patient has a multi-metastatic squamous neoplasia; the patient declined an aggressive systemic treatment.

Conclusion

Tumor size, tumor depth, poor histologic grade, high-risk location, perineural involvement and cartilage invasion are the high-risk features for CSCC. Our case report represents a rare example of a metastatic squamous cell neoplasia, a pathologically confirmed observation of a bilateral ocular surface squamous neoplasia.

References