Malignant transformation of a conjunctival keratoacanthoma requiring enucleation

A. L. Díaz Díaz¹, A. Tello¹, T. A. Chaparro Tapia¹, R. Secondi², J. C. Sánchez España³

¹Fundación Oftalmológica de Santander (FOSCAL), Cirugía plástica ocular, oncológica y órbita. Bucaramanga, Colombia; ²Ophthalmology Department. Sapienza University. Viale del Policlinico, 00185, Rome, Italy; ³Ophthalmology Department. Hospital General. Granollers, España

Abstract

Purpose. We report a rare case of rapid transformation of a conjunctival keratoacanthoma (KA) into a highly aggressive squamous cell carcinoma requiring enucleation. To our knowledge, this is the second such case reported in the literature.

Methods. Case report

Results. A 73-year-old man presented with a recurrent conjunctival lesion in the right eye. A slit lamp examination revealed a hyperkeratotic lesion in the limbar conjunctiva adhered to deep planes but with no ocular involvement. An incisional biopsy was performed because an area of scleromalacia was observed underlying the lesion. Histological findings were consistent with conjunctival KA. One week later, a raised lesion was observed invading the anterior chamber. Histological examination of another excisional biopsy specimen indicated conjunctival squamous cell carcinoma. The right eye was enucleated. Histological analysis confirmed intraocular tumor invasion. Complete clinical remission was observed over one year of follow up.

Conclusions. Although conjunctival keratoacanthoma is normally benign, it is important to correctly differentiate between KA and squamous cell carcinoma, and closely monitor the eye after surgery because of the rare possibility of recurrence or conversion to squamous cell carcinoma. Immunohistochemistry could help in the diagnosis and management of dubious cases. Clin Ter 2019; 170(2):e81-83. doi: 10.7417/CT.2019.2113

Key words: Conjunctival keratoacanthoma; conjunctival squamous cell carcinoma; ocular surface tumor; enucleation; keratoacanthoma.

Introduction

Keratoacanthoma is a common lesion that appears on sun-exposed skin as a raised nodule with a central keratotic crater. After rapid growth over a few weeks, it is often self-limiting within months (1). Although benign in most cases, invasion has been described (2) and some authors have described KA as a malignant variant of squamous cell carcinoma (3).

Keratoacanthoma of the conjunctiva is in contrast rare. Since its description by Freeman et al. (4) only a few isolated cases of conjunctival KA have been described (5-7).

As clinical signs do not serve to distinguish between KA and squamous cell carcinoma, the differential diagnosis is normally based on histopathological examination of an excisional biopsy specimen (8). As far as we know, this is the second case reported in the literature of malignant transformation of a conjunctival KA requiring enucleation.

Materials and methods

To report the case of a 73-year-old man with a histologically diagnosed conjunctival KA that rapidly recurred as a squamous cell carcinoma with intraocular involvement that required enucleation.

Case report

A 73-year-old man presented at our clinic complaining of intense pain and photophobia in the right eye of one week duration. The patient described that 6 months earlier he had undergone surgery plus cryotherapy to treat a suspected conjunctival lesion in that eye. The histological report diagnosed the lesion as conjunctival KA. The patient stated that, at one month postsurgery, no signs of recurrence had been detected.

In the ophthalmological exam, a 5 mm lesion was detected in the inferotemporal limbar conjunctiva, extending from 7 to 9 hours with a hyperkeratotic surface, surrounded by dilated vessels and adhered to deep planes; there were no signs of intraocular invasion, infiltration of orbital structures or modification of the globe contour (Fig. 1 a,b). Locoregional lymph nodes appeared normal and the rest of the ophthalmological examination was also normal.

Although an excisional biopsy was planned, during the procedure an area of scleromalacia underlying the lesion was noted, so an incisional biopsy was conducted. Histological findings were pseudoepitheliomatous hyperplasia with crateriform areas occupied by keratin suggestive of conjunctival KA (Fig. 1 c).
Surgery was programmed for tumour resection. However, one week later a further examination revealed a raised lesion in the inferotemporal limbar conjunctiva and new lesions in the anterior segment that looked like keratin pearls (Fig. 2 a,b). It was thus decided to perform another incisional biopsy. This time, histopathological findings were a squamous epithelium with clear atypia and an infiltrating appearance suggestive of conjunctival squamous cell carcinoma. Owing to the aggressiveness of this tumour, it was decided to enucleate the right eye, after performing a series of biopsies for freezing of the conjunctiva with intraoperative histological analysis until the conjunctiva turned out to be tumor free. This procedure made possible to spare as much conjunctiva as possible. The histological analysis of the eye confirmed keratinizing squamous cell carcinoma invasion of iris and ciliary body up to the equatorial region, without scleral compromise (Fig. 2 c). The patient was monitored closely during the following year. After one year of follow up, the patient showed no signs of local recurrence or metastasis.

**Discussion**

It is well known that conjunctival KA is a benign tumour (9). However, in exceptional cases it seems to show highly aggressive behaviour. As far as we are aware, only one case similar to the present has been reported in the medical literature. In this report, Grossniklaus et al. (10) described the case of a 65-year-old man diagnosed with a conjunctival KA which recurred 10 weeks after an excisional biopsy with the same clinical and histopathologic features. One month after its re-excision, the lesion recurred again, but this time showing massive intraocular invasion that required enucleation. The authors hypothesized that what they were seeing was a squamous carcinoma with the histological characteristics of KA rather than the transformation of KA into carcinoma, with mechanical manipulation inducing intraocular invasion. In our case, both the clinical features (rapid onset, hyperkeratotic surface, no intraocular invasion) and histopathologic characteristics were typical of conjunctival KA. Notwithstanding, the natural history of squamous cell carcinoma determines its development over
months to years, especially in its differentiated form (11). In the present patient, the tumour was so aggressive and invasive that he required enucleation. Sánchez-Yus et al. (12) reported that 25% of skin KA can undergo malignant transformation. These authors argued that transformation could occur at any stage of KA development, and took place more frequently in older patients and in sun-exposed skin. It therefore seems that transformation of benign conjunctival KA into malignant squamous cell carcinoma could be theoretically possible, especially in older patients. However, due to the exceptionality of its malignant transformation, it seems more plausible that the lesion in our patient and in the case reported by Grossniklaus et al. was a highly invasive squamous cell carcinoma from the beginning. In this case, the histological KA-like appearance of some areas of the tumour would explain the delay in its histopathological diagnosis. In addition, its highly invasive nature could have been enhanced by surgical manipulation. Because of its rare nature, there are scarce data available, so it is also important that all cases are reported. To better differentiate skin lesions, several immunohistochemical markers have been identified by the different authors. Corbalán-Vélez et al. (13) described the use of laminin-332 staining to differentiate between cutaneous KA and squamous cell carcinoma. In a study by Smoller et al. (14), involucrin also emerged as a useful diagnostic marker for this purpose. We propose that immunohistochemistry could play a valid role also in the differential diagnosis of conjunctival KA. These markers could be extremely useful, especially in dubious cases or in cases of recurrence within a short time after surgery. Our findings indicate that if faced with a conjunctival lesion with the appearance of KA, we need to make a careful differential diagnosis, especially in dubious or frequently recurring cases. It is important to identify lesions in which histological examination of the lesion alone may be insufficient. In this setting, immunohistochemistry could play an important role.

References


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