Short communication

Conjunctival keratoacanthoma. Diagnosis, treatment and monitoring by conjunctival impression cytology

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ABSTRACT

Case report: We present a case report of a 28-year-old patient with a lesion that is compatible both clinically and histopathologically with conjunctival keratoacanthoma (KA). The treatment given was complete excision and 0.04% mitomycin C (MMC) eye drops in the postoperative period. The outcome was a complete clinical remission during the follow-up period (6 months).

Discussion: It is important to make a correct differential diagnosis between keratoacanthoma and squamous cell carcinoma, as well as carrying out close monitoring after surgery due to the possibility of relapse and conversion to squamous cell carcinoma. For this reason, we propose the use of conjunctival impression cytology as a non-invasive method for monitoring such patients.

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Queratoacantoma conjuntival. Diagnóstico, tratamiento y control mediante citología de impresión conjuntival

RESUMEN

Caso clínico: Se presenta el caso de un paciente de 28 años con una lesión compatible clínica e histopatológicamente con queratoacantoma conjuntival. Fue tratado mediante excisión completa, y colirio de mitomicina C al 0.04% en el posoperatorio. El resultado ha sido la remisión clínica completa durante el tiempo de seguimiento (6 meses).

Discusión: Es importante hacer un correcto diagnóstico diferencial entre queratoacantoma y carcinoma de células escamosas, así como un estrecho seguimiento posoperatorio por la posibilidad de recidiva o conversión a carcinoma de células escamosas. Para ello proponemos la citología de impresión conjuntival como un método no invasivo para el seguimiento de estos pacientes.

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**Introduction**

KA is a benign epidemic tumor characterized by a nodular lesion exhibiting rapid and painless growth. At the histological level it is characterized by a central keratin deposit surrounded by acanthotic epithelium in the form of a crater. It is relatively common in elderly patients in skin areas exposed to the sun.\(^1\) However, the appearance of this pathology in the mucosa is infrequent\(^2\) and its clinical importance derives from the need of carrying out an exact differential diagnostic against squamous cells carcinoma (SCC).

This paper presents a clinic case of a patient diagnosed at the clinical and histopathological level with a potential KA treated with excision and topical MMC after surgery.

**Clinic case**

A construction worker, age 28, referred due to an inflamed nasal pinguecula in treatment with topical fluorometholone prescribed at an emergency service. The patient did not refer previous conjunctival disorders or relevant personal history. The best corrected visual acuity was of 1.0 and intraocular pressure of 13 mmHg in both eyes. The ophthalmological assessment gave normal results. The patient referred a rapid progression of the injury (2–3 weeks) which greatly increased in size, causing ocular hyperemia and foreign body feeling.

The exploration identified a protruding lesion in the nasal conjunctiva measuring 5 mm × 5 mm × 4 mm with an avascular whitish central area which invaded the left eye limbus (Fig. 1). The differential diagnosis was performed between conjunctival granuloma, inflamed pinguecula and conjunctival carcinoma.

The injury was treated with complete excision and sent for histological and cytological analysis. The histological report described an acanthotic proliferation of the squamous epithelium with inflammatory infiltrations at the base of the injury and in the keratin-filled central crater (Figs. 2 and 3). Topical fluorometholone was prescribed for the immediate post-surgery period, which did not present complications. Weekly follow-ups were scheduled. After the second week, biomicroscopy revealed a protruding lesion with a central keratin deposit on the site of the previous tumor (Fig. 4). Additional treatment was prescribed with 0.04% MMC for 5 weeks combined with occlusion of the upper and lower lachrymal tips with silicone stoppers during said period.

After the topical MMC treatment the keratin nodules disappeared and the conjunctival surface reorganized itself at the surgery site, with only hyperemia persisting (Fig. 5). Due to the apparent good progress of the patient, conjunctival impression cytology was utilized to assess the degree of underlying changes in the conjunctiva. The report indicated the existence of large altered epithelial cells with intracellular union changes and a nucleus/cytoplasm ratio of 1:20 (Fig. 6). The diagnosis was grade 4 squamous metaplasia.

At present the patient does not exhibit signs of relapse and the residual hyperemia has disappeared. A second series of conjunctival impression cytology tests carried out 3 months after the first tests and without patient treatment during the period gave the same findings as the first tests.

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**Fig. 1** – Macroscopic appearance of the injury.

**Fig. 2** – Injury morphology. Central crater full of keratin (20×).

**Fig. 3** – (A) Acanthotic homogeneous squamous epithelium, with large cells and transparent cytoplasm; (B) part of the keratin crater; (C) external edge of the injury, conjunctival mucosa with squamous metaplasia.
Discussion

Since Rook and Whimster in 1950 and Freeman in 1961, very few cases of KA\textsuperscript{3} have been reported. The danger of these lesions is that they can become invasive SCCs at the local level. Some authors define KA as a variant of SCC. The behavior of KA has been discussed in the literature. It can be easily confused with SCC and in addition 3 different explanations have been proposed about the transformation of SCC.\textsuperscript{4} In fact, the literature reported one case of KA transforming into SCC with rapid recurrence after excision and with intraocular infiltration that required enucleation.\textsuperscript{5} The pathogenesis of KA is unknown although various activation factors have been proposed, including excessive exposure to the sun, carcinogenic agents, previous traumatism and viral infections such as the human papilloma.\textsuperscript{6}

Our patient exhibited a rapidly growing mass similar to KA. Even so in these cases the possibility of SCC must also be histologically discarded because it is much more frequent than KA in the conjunctiva and much more aggressive. In our case, after excision and the administration of topical MMC, conjunctival impression cytology indicated the existence of squamous metaplasia and the conjunctiva exhibited normal biomicroscopic characteristics. The patient was followed up in our hospital without treatment or signs of relapse.

We recommend complete excision and topical treatment with MMC, carrying out follow-up in the subsequent months with biomicroscopy and conjunctival impression cytology due to the possibility of recurrence as well as conversion into SCC. Particularly, we believe that the utilization of conjunctival impression cytology is an adequate method to follow the progress of the ocular surface even in cases such as the present one in which it is possible to observe the complete clinical remission of the lesion.

Conflict of interests

No conflict of interests has been declared by the authors.

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