Amelanotic corneally displaced malignant conjunctival melanoma: a case report evaluated with impression cytology

Melanoma amelanótico conjuntival maligno deslocado sobre a córnea com citologia de impressão: relato de caso

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INTRODUCTION
Conjunctival melanoma shows considerable clinical variability. This lesion usually presents as a pigmented or tan elevated lesion that can be located in any area of the conjunctiva. It may arise spontaneously (de novo), in a pre-existent nevus, or in association with primary acquired melanosis. Impression cytology aided in the initial diagnosis. The patient underwent surgical treatment. Histopathology and immunohistochemistry revealed an amelanotic melanoma limited to the cornea and exhibiting S-100, Melan A, and HMB-45 positivity. The absence of pigmentation delayed early clinical detection and treatment. Awareness of this nonpigmented melanoma is important for early recognition and appropriate management.

Keywords: Melanoma/pathology; Conjunctival neoplasms; Eye neoplasms; Cytological techniques; Diagnostic techniques; Ophthalmological; Humans; Female; Aged; Case report

CASE REPORT
The authors describe the case of a 65-year-old Caucasian female from Curitiba (Parana, Brazil). In June 2013, she was referred to one of the authors (M.M.) in São Paulo because of unresponsiveness to topical steroid treatment for a nonpigmented lesion located over her left cornea since 1 year. Although the lesion disturbed her blinking reflex, her vision remained unchanged because her left eye had amblyopia secondary to an untreated congenital cataract. She reported a history of Herpes simplex keratitis of the same eye since 2005, which had recurred several times, with the last episode in December 2012. On examination, the visual acuity of her left eye was count fingers. On examination, the complete absence of intrinsic pigmentation is even more rare16.
vessels to the temporal limbus. The conjunctiva appeared normal without thickening or pigmentation. The right eye was normal, revealing an uncorrected distance visual acuity of 20/20 according to the Snellen chart. The intraocular pressure was 12 mmHg in both eyes. There were no other abnormal findings, and no history of systemic disease was recorded. The patient was not undergoing any systemic or topical treatment, but she reported a positive family history of skin cancer. On the basis of slit-lamp examination, anterior segment ultrasound biomicroscopy, and the suspicion of a neoplastic lesion limited to the cornea, impression cytology (IC) was performed to confirm the diagnosis. Following induction of anesthesia with topical 0.5% proxymetacaine hydrochloride (Anestalcon® 0.5%, Alcon, São Paulo, Brazil), a membrane filter (Millipore HAWG01300, Bedford, EUA) was placed onto the corneal surface, gently pressed for 5 s, and peeled off. Sampling was performed 3 consecutive times to increase the sensitivity of IC and access the deeper layers. The filters were immediately fixed in a solution containing glacial acetic acid, 37% formaldehyde, and ethyl alcohol in a 1:1:20 volume ratio. All strips were processed with periodic acid-Schiff and Gill’s hematoxylin stains. Glass slides were mounted with Entellan (Merck, Darmstadt, Germany) and cells were analyzed under light microscopy by an experienced professional (J.N.B).

IC samples (Figure 2) obtained from the nodule surface and the corneal opacities revealed abundant clusters of pleomorphic, atypical, tumor-dissociated cells of different sizes and with anisokaryosis characterized by large and irregular nuclei in a cytomorphology not resembling epithelial cells (hematoxylin and eosin staining; original magnification, ×200).

**Figure 1.** Clinical images obtained before surgery. A) Anterior segment photograph of the corneally displaced conjunctival melanoma obtained before surgery. B) A clinical image showing the temporal nodular amelanotic lesion and the corneal opacities in the inferior and nasal regions.

**Figure 2.** Findings of impression cytology. Impression cytology demonstrating clusters of pleomorphic, atypical, tumor-dissociated cells of different sizes and with anisokaryosis characterized by large and irregular nuclei in a cytomorphology not resembling epithelial cells (hematoxylin and eosin staining; original magnification, ×200).
A melanoma is an often aggressive neoplasm belonging to the group of skin tumors and is characterized by the disordered accumulation and migration of melanocytes from the epidermis to the dermis. As a result, the skin is covered with brown or black pigments. Different colors and sizes of pigments may appear on the skin, including white and red hues. Melanin is a pigment produced by melanocytes, the key cells of the skin, which are responsible for the skin’s color. The presence of melanin in the skin is influenced by genetic factors and environmental factors. Melanoma is a disease in which the skin is covered with brown or black pigments. Different colors and sizes of pigments may appear on the skin, including white and red hues. Melanin is a pigment produced by melanocytes, the key cells of the skin, which are responsible for the skin’s color. The presence of melanin in the skin is influenced by genetic factors and environmental factors. melanoma that is amelanotic can arise as a result of the loss of pigmentation.