INVASIVE SQUAMOUS CELL CARCINOMA OF THE CONJUNCTIVA

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SUMMARY

A 75-year-old man, known with Morbus Kahler, was referred with a history of uveitis and hypopyon at the left eye. The uveitis did not respond to any steroid treatment. It was complicated with high intraocular pressure. Anterior chamber punction showed atypical cells of epithelial origin. Several weeks prior to this presentation an atypical pterygium of the same eye was biopsied. Histopathologic examination at that time showed mild atypical actinic changes. The biopsy specimen was reviewed in our laboratory and revealed an invasive squamous cell carcinoma originating from the bulbar conjunctiva. The eye was eventually enucleated. Histologic examination of the enucleated eye showed invasion of the cornea, sclera, trabeculum, anterior chamber angle and choroid by a muco-epidermoid squamous cell carcinoma.

RÉSUMÉ

Un homme de 75 ans, atteint de maladie de Kahler, nous a été adressé avec une anamnèse d'uvéite avec hypopion au niveau de l'oeil gauche. Cette uvéite ne répondait pas à un traitement à base de stéroides. Cette affection fut compliquée par une hypertension intra-oculaire. Une ponction de la chambre antérieure a mis en évidence des cellules atypiques d'origine épithéliale.
Plusieurs semaines auparavant, l'examen histopathologique d'un ptérygion atypique au même oeil démontrait des changements minimes atypiques et actiniques. Un examen de contrôle de cette biopsie dans nos laboratoires a révélé un carcinome spinocellulaire invasif ayant son origine dans la conjonctive bulbaire.
Finalement, on a dû procéder à l'énucléation de l'oeil. L'examen histologique de l'oeil énucléé a mis en évidence une invasion de la cornée, de la sclérotique, du trabéculum, de l'angle camérulaire et de la choroïde par un carcinome spinocellulaire muco-épidermoïde.

SAMENVATTING

Een man van 75 jaar, gekend met Morbus Kahler, werd doorverwezen wegens uveïtis met hypopion, resistent aan behandeling met steroïden, en gepaard gaande met verhoogde intra-oculaire druk. Een voorkamerpunctie toonde atypische cellen van epitheliale oorsprong. Meerdere weken voordien werd aan hetzelfde oog een biopsie genomen van een atypisch pterygium. Het histopathologisch onderzoek toonde toen een lichte graad van atypische en actinitische veranderingen. Heronderzoek van deze biopsie in ons laboratorium toonde een spinocellulair carcinoma, uitgaande van de bulbaire conjunctiva. Het oog werd geënucleëerd en histologisch onderzoek toonde een spinocellulair carcinoma met invasie in de cornea en sclera en doorgroei in de kamerhoek en chorioidea.

KEYWORDS:

Uveitis, squamous cell carcinoma, conjunctiva, invasion.

MOTS CLÉS:

Uvéite, carcinome spinocellulaire, invasion, conjonctive.

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INTRODUCTION

We describe an unusual case of invasive squamous cell carcinoma of the conjunctiva in a 75-year-old man.

Invasive squamous cell carcinoma of the conjunctiva is uncommon, and intraocular extension is very rare (6,9). Epidemiological studies have shown that ultraviolet B radiation (290-320 nm) may play a role in this pathology (7,8). Point mutations in the p53 tumour suppressor gene induced by ultraviolet B have been reported in other squamous cell carcinomas (10).

Human papillomavirus (HPV) types 16 and 18 may also be important in the development of this tumour (10). Conjunctival squamous cell neoplasms are more frequent in immunocompromised patients. The incidence in AIDS patients is much higher than in the normal population (5,6,10).

Clinically, these tumours most commonly arise in the interpalpebral area of the perilimbal conjunctiva. They may present as localised, slowly growing lesions that mimic benign conjunctival degenerations and sometimes coexist with pinguecula and pterygia (1,6). Long term neglected invasive lesions may spread into the globe or orbit (10,11). Squamous cell carcinoma gives seldom regional metastases whereas distant metastases are extremely uncommon (9).

CLINICAL FINDINGS

In April 1999, a 75-year-old farmer was referred to our department with a history of uveitis in the left eye. He was diagnosed with Morbus Kahler in March 1998. At that time a plasmocytoma of the right sacrum was discovered and treated with radiotherapy and chemotherapy, and was currently in remission. In his past ophthalmologic history, the patient was treated several months for an atypical conjunctival lesion and redness of the left eye. He developed a high intraocular pressure that was not responsive to topical medications. Cyclocryotherapy was performed, subsequently a hypopyon was documented and the patient was referred to our department. At presentation the visual acuity was hand movements at 30 cm in the left eye and 10/10 in the right eye. Slit lamp examination showed conjunctival, episcleral and scleral injection.

Marked anterior segment inflammation was documented with flare and cells, hypopyon, posterior synechiae and congested iris vessels. There also was a fibrin coating on the front of the lens (fig.1). The intraocular pressure was 24 mm

Fig.1: Left eye at the moment of presentation at our department: anterior segment inflammation with deep and superficial dilatation of vessels, hypopyon, posterior synechiae and fibrin coating on the front of the lens.

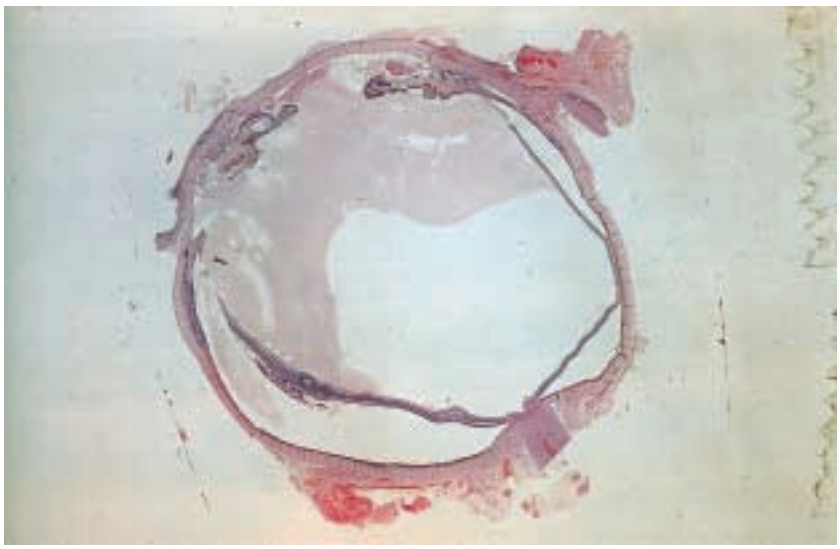

Fig. 2: Horizontal transpupillary section of the left eye. There is infiltration of epithelial tumor cells between the corneal lamellae and along the anterior chamber wall with floating cells in the anterior chamber. The tumor grows over the anterior surface of the iris and shows deep invasion of the ciliary body with muco-epidermoid differentiation. (Stain, hematoxylin-eosin).

Hg. Because of his Kahler disease the diagnosis of uveitis secondary to his plasmocytoma was considered and an anterior chamber punction was performed. Cytology showed atypical cells of epithelial origin with differentiation towards keratinisation. Iris biopsy revealed normal iris tissue covered by a multilayered squamous cell epithelium with mild atypical cells. Therefore, we investigated the past medical and ocular history. It appeared that several weeks before the onset of the uveitis an atypical pterygium was excised at the peripheral hospital at the same eye. It was a white, round, slightly elevated lesion, surrounded by dilated blood vessels and localised in the temporal upper quadrant of the left eye. The pathologist of the peripheral hospital described it as a lesion with mild atypical actinic changes. This biopsy specimen was reviewed and the histopathologic diagnosis of invasive squamous cell carcinoma was made. The eye was enucleated and histologic examination of the eyeball showed a large invasive squamous cell carcinoma of the bulbar conjunctiva, extending between the corneal lamellae and covering the corneal endothelium and the anterior and posterior iris surface. Free-floating tumour cells were present in the anterior chamber angle. The tumour extended posteriorly into the ciliary body and choroid and muco-epidermoid differentiation was documented with P.A.S. staining (fig. 2,3).

DISCUSSION

Although it is uncommon in clinical ophthalmic practice, conjunctival squamous cell carcinoma is the third most common ocular tumour after lymphoma and melanoma, and it is the most common primary malignancy of the conjunctiva (1,6). The tumour arises typically in the interpalpebral area of the perilimbal conjunctiva (2,6,10). The clinical appearance of squamous cell carcinoma of the conjunctiva can be either gelatinous, velvety, papilliform or leukoplakic (1). The most common misdiagnosis of this condition includes pterygium, pinguecula, papilloma, dyskeratosis and nevus or chronic unilateral conjunctivitis (1,6). Misdiagnoses often delay treatment and increase the morbidity, as in our case.

Conjunctival epithelial malignancies are more common in elderly white men (1,2,6,10). The male predominance is probably due to increased occupational exposure to sunlight and

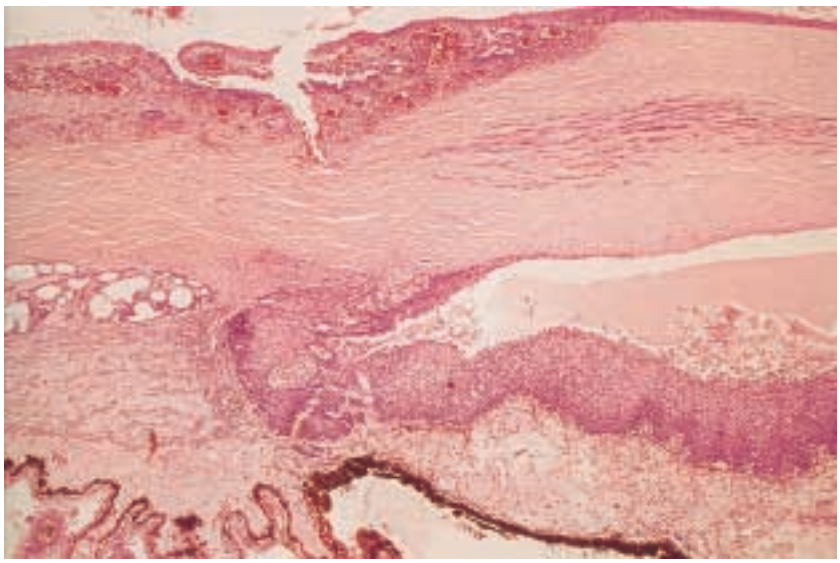

Fig.3: Detail of the anterior chamber angle: invasive squamous cell carcinoma with muco-epidermoid differentiation. (Stain, hematoxylin-eosin; original magnification x 330).

UV light as in our case (7,8). In almost half of the patients with squamous cell carcinoma other actinic eye changes were noted (10). The importance of human papilloma virus (HPV) types 16 and 18 in the pathophysiology of conjunctival carcinoma is uncertain (6,10). We did not examine our patient for HPV. It is also known that this carcinoma is more prevalent in AIDS and immuno-compromised patients (5,6), what can be another predisposing factor in our patient who had been treated for Kahler disease by alkylating agents.

Local invasion in the cornea and sclera is the most prevalent mechanism of tumour spread. Scleral involvement is a risk factor for both tumour recurrence and intraocular invasion (2,9,11). Intraocular invasion can present with iritis, glaucoma, retinal detachment or rupture of the globe and has been reported in between 2% and 8% of all cases (10). In the cases of neglected conjunctival lesion these can be the primary signs, as seen in our case. The first site of extraocular involvement are the regional lymph nodes (2,6,9,10).

All atypical conjunctival lesions should be biopsied and if the diagnosis of squamous cell carcinoma is posed, excision of the lesion is the most accepted method of treatment (3,4,5,6,9). Dissection of all abnormal tissue within a wide surgical margin of 3 mm is sufficient to ensure removal of the majority of lesions (6). Enucleation is required in instances of intraocular or intraorbital extension (6,4). Partially excised tumours tend to recur with a more aggressive behaviour (6). Single excision of conjunctival intraepithelial or invasive neoplasia is associated with a 24-50% recurrence rate (5,10). Even in cases with mild degree of atypia, careful assessment of histological margins is necessary and careful follow-up of patients can avoid recurrences (1,10).

CONCLUSION

This report describes a patient with a neglected inflamed conjunctival lesion who presented with the masquerading symptom of uveitis. Due to the postponed diagnosis of squamous cell carcinoma, intraocular invasion produced a hypopyon and ocular hypertension which was held for uveitis. It is mandatory to perform a biopsy in cases of an aspecific conjunctival lesion that does not respond to treatment, and to include conjunctival invasive carcinoma in the differential diagnoses of any atypical conjunctival lesion.

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