Figure 1 T1 weighted magnetic resonance image shows a lobular tumour within the lacrimal sac.

Figure 2 Histological examination reveals an inverted squamous papilloma that originated from the wall of the lacrimal sac. (Haematoxylin and eosin staining $\times 13$.)

Figure 3 Micrograph of tumour cells. There is mitotic activity and koilocytosis, especially near the surface of the tumour. (Haematoxylin and eosin staining $\times 86$.)

Figure 4 Micrograph of tumour cells. Cells near the surface of the tumour are positive for anti-HPV antibody immunohistochemical staining ($\times 86$).

Figure 5 Micrograph of tumour cells ($\times 45$). The nuclei of the tumour cells near the surface are positive for a wide spectrum HPV fluorescein-labelled DNA in situ hybridisation probe.

lumen of the lacrimal sac. Histologically, we observed an inverted squamous cell papilloma with dysplastic change, marked mitotic activity, and koilocytosis in the cells near the tumour surface (Figs 2, 3). The superficial epithelial tumour cells were positive for anti-HPV antibody (Dako Corporation, USA) by immunohistochemical staining (Fig 4). Cells were also positive for a wide spectrum HPV fluorescein labelled DNA in situ hybridisation probe (Dako Corporation, USA) including types 6, 11, 16, 18, 30, 31, 33, 35, 45, 51, and 52 HPV (Fig 5). Cells were negative for a type 6/11 probe. Fluorescein staining of the nuclei of tumour cells was stronger in the superficial epithelial cells than the deeper cells. Follow up at 10 months showed no clinical or radiological evidence of any recurrence.

COMMENT

Primary tumours of the lacrimal sac are rare.¹ Most of them are benign, including adenomas and papillomas. The latter may be exophytic or inverted. Inverted papilloma can be readily transformed into carcinoma, even in a young adult. Anderson *et al* recently reported a 36-year-old patient with transitional cell carcinoma arising from an inverted papilloma.²

In our case, epithelial dysplasia that displayed cytoplasmic clearing along with nuclear pyknosis and koilocytosis suggested HPV infection as an aetiology, since koilocytosis in squamous papilloma is commonly found in lesions associated with HPV.³ Based on the histopathological findings in this case, we conducted an immunohistochemical and molecular biological investigation of HPV in the lesion, which revealed HPV DNA. Previous studies have shown that ocular conjunctival squamous papilloma may be related to HPV types 6 and 11,⁴ and squamous dysplasia or carcinoma to HPV type 16.⁵ HPV antigens and DNA types 16, 18, 31, 33, and 35 have been identified within squamous dysplastic changes or carcinomas affecting the female reproductive tract.⁶ Such findings suggest an oncogenic potential of HPV infection. In the present case, HPV was, thus, probably responsible for squamous papilloma with dysplastic changes of the lacrimal sac. The mode of transmission of HPV to the epithelium of the lacrimal sac is unknown, but it could occur during passage of a fetus through the infected birth canal.

Ophthalmologists should be alert to the possibility of HPV infection, especially in a young adult with lacrimal sac papilloma, as this disorder may have oncogenic potential.

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Multiple molluscum contagiosum lesions of the limbus in a patient with HIV infection

EDITOR,—In HIV infection, molluscum contagiosum of the eyelids is quite common, but limbal molluscum contagiosum is rare. We report a documented case of multiple bilateral molluscum contagiosum of the limbus in an HIV seropositive patient.

CASE REPORT

A 40-year-old African (Zaire) man presented with bilateral ocular foreign body sensation which had developed 1 month earlier, without redness of the eyes or loss of vision. The patient tested seropositive to HIV 4 years earlier and had not developed any AIDS defining illness so far. He had been treated by repeated curettage and cryotherapy for over a year for disseminated molluscum contagiosum lesions of the skin, localised mainly on the face, the trunk, and the genitalia. CD4 T lymphocyte count at the time of ophthalmic evaluation was $70 \times 10^6/\text{litre}$. Visual acuity was 20/20 in both eyes without correction. Slit-lamp examination revealed multiple, confluent, molluscum contagiosum lesions on the skin of the four eyelids. On the limbus of the left eye, two white multilobular lesions, 4 and 1 mm in diameter, were noted at 6 and 7 o'clock respectively (Fig 1). Another similar lesion, 2 mm in diameter, was present on the limbus in the right eye, at 3, 4, and 6 o'clock. The lobules of these lesions, encroaching on to the cornea, were dome-shaped with a slight central umbilication. There was a mild perilesional conjunctival injection around each limbal lesion. Anterior chamber, vitreous, and fundus examinations were normal in both eyes. An excisional biopsy of the largest lesion in the left eye was performed. Histopathological examination was consistent with the diagnosis of molluscum contagiosum (Fig 2). It showed a hyperacanthosis and hyperkeratosis of the epithelium, an oedema of the underlying intercellular space, and numerous swollen cells containing eosinophilic intracytoplasmic inclusions ('molluscum bodies'). Three months after the biopsy, the excised lesion had not grown back, while the other limbal lesions of both eyes remained unchanged despite no treatment. In both eyes, no new conjunctival, limbal, or corneal lesions were seen and the foreign body sensation was stable.

Figure 1 Multilobular lesions of the limbus, located at 6 o'clock, left eye.

Figure 2 Histological section of the lesion shows swollen cells containing eosinophilic viral inclusions in the hyperacanthosis epithelium (haematoxylin and eosin $\times 10$).

COMMENT

Molluscum contagiosum is an infection of the skin caused by a pox virus. Whereas molluscum contagiosum lesions are limited in number in immunocompetent patients, they tend to be prolific, disseminated, persistent, and recurrent in AIDS patients.¹ As no drug is effective against molluscum contagiosum, the treatment is limited to local cryotherapy and/or curettage.

Ophthalmic involvement is usually confined to the eyelids.² Conjunctival and corneal lesions are very rare. In immunocompetent patients, conjunctival involvement occurs mainly as a chronic follicular keratoconjunctivitis, secondary to molluscum contagiosum lesions of the eyelids.³ It was hypothesised to be a hypersensitivity reaction to the pox virus rather than a site of viral replication. Such a chronic follicular keratoconjunctivitis has already been reported in AIDS.² Only one case of a single lesion of molluscum contagiosum of the limbus has been reported in an AIDS patient.⁴ Our case is, to our knowledge, the first documented report of multiple bilateral molluscum contagiosum lesions of the limbus in a patient infected with HIV. We did not observe any sign of follicular conjunctivitis, although subepithelial infiltrates were noted in the right eye.

As the HIV epidemic extends, epibulbar molluscum contagiosum will tend to become more common and should be recognised.

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