Case Report

Cyclosporin-induced trichomegaly of accessory lashes as a cause of ocular irritation

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Introduction

Cyclosporin A, a cyclic endecapeptide and T-cell-specific immunosuppressant, has proved to be highly effective in the prevention of rejection following organ transplantation and is increasingly used in the management of disorders ranging from ulcerative colitis to posterior uveitis and Graves' ophthalmopathy [1]. Hypertrichosis and trichomegaly (hypertrichosis of the eyelashes) have been documented in the literature as side-effects of systemic cyclosporin A therapy [2,3]. We report the case of a patient with distichiasis (the presence of accessory lashes situated in or near the openings of the Meibomian glands and therefore distinct from trichiasis) who developed cyclosporin-induced trichomegaly associated with disproportionate enlargement of the accessory lashes which resulted in recurrent ocular irritation.

Case report

A 54-year old man who had no history of cicatrizing eye disease had been maintained on cyclosporin, prednisolone, and azathioprine following renal transplantation for glomerulonephritis in 1987. He had suffered recurrent episodes of ocular discomfort for several years and was found on ophthalmological examination to have bilateral distichiasis, with rows of accessory lashes on all four lids (Figure 1). All his lashes, but in particular his accessory lashes, were noted to be unusually long and thick, resulting in contact between the accessory lashes and the globe.

Two eyelashes which appeared representative of the lash line were plucked from the centre of each of the lower lids of our subject and two healthy sex and age-matched controls and mounted on aluminium stubs with adhesive tape. They were covered with a 10-μm layer of gold and their morphology, diameter and cuticular periodicity and regularity evaluated using the scanning electron-microscope. All the lashes from the subject were found to be unusually long and thick. His accessory lashes were largest, with a mean lash length and mid-shaft diameter respectively of 5 mm and 102 μm, but his normally situated lashes were still larger than normal at 4.5 mm by 70 μm when compared to a mean of 3.9 mm by 54 μm in the controls.

Under the scanning electron-microscope, the surface morphology of the lashes from the cyclosporin-treated patient also differed from that of the control subjects. The cuticle of the control lashes consisted entirely, as expected, of a regular arrangement of overlapping keratin plates (Figure 2). However, the plates covering the accessory lashes were larger, variable in size, and poorly adherent, resulting in folding back of the keratin, multiple areas of fissuring and irregularity of the surface of the lashes, and adherence of large amounts of debris (Figure 3). The morphology of the normally situated lashes of the patient was intermediate between that of the accessory lashes and that of the control lashes, with large but fairly regular keratin plates

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Fig. 2. Scanning electron-micrograph of a normal eyelash showing regular arrangement of cuticular keratin plates. (x 1260)

Fig. 3. Scanning electron-micrograph of cyclosporin-induced trichomegaly of accessory lash showing large, irregular cuticular keratin plates with fissuring and adherence of debris. (x 1970) showing some tendency to fold back and fissure (Figure 4).

Discussion

Distichiasis may be congenital or acquired as a result of cicatricial eye disease affecting the lid margins, and may result in contact between the accessory lashes and the globe, which is generally of little consequence as these lashes tend to be shorter and softer than those of the normal lash line. Hypertrichosis has been reported in a variety of conditions such as hypothyroidism, pregnancy, and advanced human immunodeficiency type 1 infection, and as a result of systemic treatment with various drugs including cyclosporin A [4–6].

We report on the case of a patient maintained on long-term cyclosporin A following renal transplantation who was found to have both trichomegaly and distichiasis. As would be expected, all the lashes were unusually long and thick and showed abnormally large, irregular, and poorly adherent keratin cuticular plates when compared to the lashes of healthy control subjects. However, the accessory lashes were found to be larger than those of the normal lash line and to be producing ocular irritation from contact with the globe. Distichiasis as a complication of cyclosporin treatment has not been reported in the literature and it is probable that our subject had at least some degree of congenital distichiasis, which only became symptomatic when his cyclosporin-induced trichomegaly increased contact with the cornea.

The factors regulating the growth cycle of the hair follicle remain obscure. The hair growth stimulating effects of cyclosporin A are observed in both normal and pathological conditions of hair growth such as alopecia areata [6]. Recent evidence suggests that cyclosporin A induces resting (telogen) follicles to enter an active (anagen) growth phase [7] but the exact mechanism of the hair-growth-stimulating effect of cyclosporin A is unknown. Scanning electron-microscopy of the lashes of our subject show obvious differences in surface morphology compared to the lashes of controls, but the reason that these changes should be more marked in the accessory lashes is not clear.

Trichomegaly alone is a cosmetic rather than a clinical problem, but ocular irritation due to contact between abnormally thickened anomalous lashes and the globe may indicate significant abrasion of the cornea and the risk of corneal infection and scarring. Patients on long-term cyclosporin A therapy should therefore be advised to inform the physician of any ocular discomfort so that an early ophthalmological opinion can be sought.
Cyclosporin-induced trichomegaly

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