

chronic inflammation, stromal scarring and reduced visual acuity.<sup>4,5</sup> Impression cytology, with immunocytochemistry for CK expression, can be used to examine the phenotypic changes associated with 'conjunctivalisation'.<sup>6,7</sup> A change from CK3 expression to CK19 expression over the cornea suggests change from corneal to conjunctival phenotype.<sup>6,7</sup> These two populations normally meet at the limbus.<sup>7</sup>

The limbal stem cell population can be restored by limbal stem cell grafting.<sup>8-10</sup> Autologous grafting is generally preferred over allogenic grafting, which may suffer rejection without the use of immunosuppressive agents.<sup>9</sup> This has traditionally been achieved by taking two free limbal grafts (60 mm<sup>2</sup>) from the healthy eye.<sup>8,9</sup> However, our patient was unprepared to take the risk of decompensating the normal left cornea. Recently a new technique using cells cultivated *in vitro* from 1 mm<sup>2</sup> biopsies of healthy limbal stem cells have generated enough epithelium to cover the entire corneolimbal surface.<sup>10</sup> These cells have been shown to retain their corneal phenotype for at least 2 years.<sup>10</sup> This technique offers another option for patients with bilateral stem cell deficiency or where the patient is unwilling to risk decompensating the unaffected eye.

#### References

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Sir,

#### Allergic contact fingertip dermatitis secondary to proxymetacaine in an ophthalmologist

We report a case of allergic contact fingertip dermatitis secondary to proxymetacaine sensitivity. This is a rare and infrequently reported problem, which can cause difficulties in clinical practice. Specialists with chronic hand eczema should consider seeking specialist dermatology advice.

#### Case report

In January 1999 a right-handed 45-year-old female consultant ophthalmologist began to suffer itching of the middle fingertip on her left hand. The problem progressed and caused thickening of the periungual skin and onycholysis of the distal nail plate. The fingertip became increasingly erythematous with painful fissuring, crusting and occasional bleeding (Fig. 1). Scrubbing the hands for theatre and wearing surgical rubber latex gloves exacerbated the symptoms. The affected finger was used to hold down the lower eyelid whilst applying drops to patients' eyes (Fig. 2). The symptoms worsened in the evening after working in the ophthalmology clinic.

The ophthalmologist began using her index finger for holding the eyelid down whilst applying eye drops, because of increasing pain in the middle finger. Similar symptoms started to develop on this finger within 7 days. The patient had no prior dermatological history, except for a past history of allergic contact dermatitis to epoxy resin, which developed from exposure occurring in tissue processing for electron microscopy. There was no personal or family history of atopy. The condition continued to worsen and use of the fingers was severely limited because of the intermittent bleeding and pain.



Fig. 1. Right middle fingertip showing allergic contact dermatitis secondary to topical proxymetacaine eye drop application.



**Fig. 2.** Eye drop application technique using the right middle finger to hold the lower eyelid down.

During a holiday the signs and symptoms began to resolve, recurring and progressing rapidly on returning to work, which suggested an allergy to a work product.

She consulted a dermatologist, who confirmed an allergic contact dermatitis. Patch testing showed a 1+ result to proxymetacaine eye drops 0.5% at days 2 and 4. She had regularly used these since 1994. Positive allergic responses were also found to neomycin 20% in petrolatum (pet.), gentamicin 20% pet., thiomersal 0.10% pet. and isoeugenol 2.0% pet. in the fragrance mix. These were felt to be either of past or unknown relevance. Patch tests to other local anaesthetics including amethocaine 5.0% pet., lignocaine 5.0% pet. and oxybuprocaine eye drops 0.4% were negative.

She stopped using the proxymetacaine eye drops and treatment with betamethasone valerate ointment (Betnovate) was commenced. She changed to using oxybuprocaine eye drops as a first choice, which she had used regularly since 1979 with no problems. The skin had significantly improved within 2 weeks, although 12 months after the first symptoms the finger remains sensitive and prone to breaking down and the skin at the nail bed remains swollen. There is persistent deformity of the nail.

#### Comment

Fingertip allergic contact dermatitis secondary to eye drops occurring in an ophthalmologist has very rarely been reported. March and Greenwood<sup>1</sup> and more recently Liesegang and Perniciaro<sup>2</sup> have previously reported fingertip allergic contact dermatitis to proxymetacaine (proparacaine). In the latter report it took almost 3 years to diagnose the problem, because the allergen was not included in the original patch test series. The ophthalmologist affected was subjected to treatment with oral prednisolone, methotrexate and ultraviolet B phototherapy in an attempt to treat the condition before the nature of the allergen was recognised.

In this case the diagnosis was delayed for 4 months, because the association with the frequently used proxymetacaine eye drops was not immediately recognised. The ophthalmologist had been using the eye drops for over 4 years without any problems, but since

the underlying pathogenesis is one of delayed hypersensitivity, previous continued exposure is a prerequisite. Proxymetacaine is an ester-type local anaesthetic and fortunately no cross-reacting or coexisting allergy to the other ester- or amide-type local anaesthetics has been elicited in this case. Allergic contact dermatitis to the active ingredients and preservatives in ophthalmic solutions is not uncommonly seen affecting the eye and eyelids of patients.<sup>3-5</sup> It appears to occur very rarely in practising ophthalmologists. Specialists with chronic hand eczema should have patch testing performed, otherwise the diagnosis of allergic contact dermatitis will be delayed and this may affect clinical practice.

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Sir,

#### **Brimonidine tartarate 0.2% (Alphagan) associated granulomatous anterior uveitis**

Brimonidine tartarate is a new topically acting  $\alpha_2$  adrenergic receptor agonist used in the management of primary open angle glaucoma and ocular hypertension. Here we report a case of granulomatous anterior uveitis following its use as an adjunctive therapy in a patient with ocular hypertension who was treated with betaxolol and pilocarpine for 3 years.