

BRIEF REPORT

Periorbital allergic contact dermatitis resulting from topical retinoic acid use

Austen Anderson and Kurt Gebauer

Fremantle Hospital, Alma St, Fremantle, Western Australia, Australia

ABSTRACT

Contact dermatitis to topical tretinoin or retinoic acid is rarely described. We outline the case of a 20-year-old woman presenting with bilateral periorbital dermatitis against the background of longstanding use of retinoic acid for the ocular complications of toxic epidermal necrolysis. Patch testing confirmed a contact allergy to retinoic acid and the symptoms of the dermatitis resolved after the cessation of retinoic acid.

Key words: tretinoin, retinoic acid, dermatitis, allergic, contact, ophthalmology.

INTRODUCTION

Skin irritations as a result of the use of topical retinoic acid (tretinoin) have been well described; however, allergic contact dermatitis from retinoic acid is less commonly described. We report the case of a 20-year-old woman presenting with periocular dermatitis and a history of topical ocular retinoic acid use.

CASE AND DISCUSSION

A 20-year-old woman presented with a several month history of bilateral periocular dermatitis (Fig. 1). The patient had a history of toxic epidermal necrolysis (TEN) at 4-years of age secondary to cefaclor, from which she was left with significant ocular sequelae including corneal stem cell deficiency, bilateral pannus formation and trichiasis. Management of her ocular condition had necessitated several previous surgical procedures and she was prescribed several topical preparations including polyvinyl alcohol, povidone (Refresh [Allergan Australia, Sydney, New

South Wales, Australia]) eye drops thrice daily, fluorometholone ointment twice daily and a compounded preparation of retinoic acid 0.05% in simple eye ointment (wool fat 10%, liquid paraffin 10%, made up to 100% with yellow soft paraffin) at night to the inner lower eyelids. The patient had remained on a similar treatment regime for many years.

The patient was otherwise well, with the only other prescribed medication being the ethinyloestradiol-levonorgestrel (Microgynon 30 ED [Bayer Australia, Sydney, New South Wales, Australia]) contraceptive pill.

Patch testing was performed to the wool fat and to a commercial preparation of retinoic acid cream (ReTrieve cream [Valeant Pharmaceuticals Australia, Sydney, New South Wales, Australia]). A patch test reading at 48 h revealed a significant reaction to the retinoic acid cream with no reaction to the wool fat (Fig. 2). An allergic contact reaction rather than an irritant reaction was supported due to the finding of an indurated, swollen lesion that extended beyond the borders of the original allergen placement. There was no epidermal loss. The compounded preparation was subsequently ceased and the symptoms resolved.

The cornea and conjunctiva require vitamin A and its active derivatives to maintain integrity.¹ Severe dry eye disorders, such as those induced by TEN and ocular pemphigoid, cause ocular surface epithelial squamous metaplasia manifested by a loss of goblet cells, mucin deficiency and keratinization. Topical tretinoin treatment has been shown to reverse this metaplasia.²

Skin irritation as a result of topical retinoic acid is commonly reported; however, allergic contact dermatitis from retinoic acid is rarely described. While it is infrequent, there have been several reported cases of allergic contact dermatitis developing after the topical use of retinoic acid.

One case of allergic contact dermatitis to tretinoin was reported in a study of 204 patients being treated with topical acne treatments.³ In a previous case described by the same authors, a 19-year-old woman developed dermatitis 2 months after commencing topical tretinoin treatment for acne vulgaris. Patch testing was positive to tretinoin and negative to other elements of the cream.⁴

Correspondence: Dr Austen Anderson, Dermatology Department, Fremantle Hospital, Alma Street, Fremantle, 6160, Western Australia, Australia. Email: austenkanderson@gmail.com

Austen Anderson, MBBS (Hons). Kurt Gebauer, FACD.

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Abbreviation:

TEN toxic epidermal necrolysis

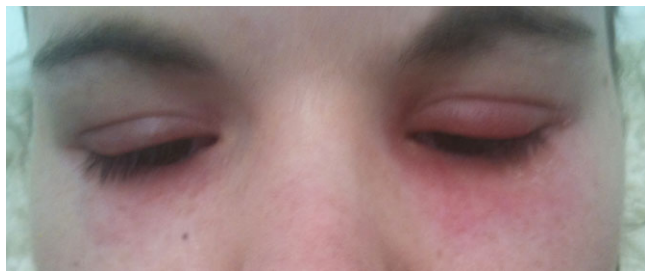


Figure 1 Presentation of bilateral periocular dermatitis.



Figure 2 Test site 48 hours after application of retinoic acid cream.

Tomb and colleagues describe a single case of contact allergy to tretinoin in a 34-year-old man, and patch testing was positive to tretinoin and isotretinoin.⁵ Earlier case reports of allergic contact dermatitis to retinoic acid have

also been described.^{6–10} To our knowledge, there have been no reported cases of allergic contact dermatitis after the ocular use of retinoic acid.

CONCLUSION

While uncommon, allergic contact dermatitis to topical retinoic acid has been described. To our knowledge this is the first reported case of contact dermatitis from the ophthalmic use of retinoic acid resulting in periorbital dermatitis.

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