Topical Tazarotene for the Treatment of Ectropion in Ichthyosis

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**Importance:** Ectropion is a complication of certain subtypes of ichthyosis and is often associated with substantial medical and cosmetic consequences. At present there is no standard of care for the treatment of ectropion in this population. Retinoids cause dyshesion and thinning of stratum corneum, thereby reducing hyperkeratosis that likely underlies ectropion in patients with ichthyosis. As such, retinoids provide a potential effective treatment for ectropion in this group of patients.

**Observation:** We describe a patient with recessive ichthyosis for whom daily application of topical tazarotene produced rapid and persistent improvement of bilateral lower eyelid ectropion without adverse effects.

**Conclusions and Relevance:** Additional studies will be necessary to more fully and systematically address the safety and efficacy of topical retinoids for the treatment of ectropion in patients with ichthyosis; however, this case illustrates that topical tazarotene and other retinoids provide a potential treatment option for ectropion in this population. We encourage clinicians to explore medical therapies as alternatives to surgical intervention for the treatment of ectropion in patients with ichthyosis.


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ECTROPION IS CHARACTERIZED BY ABNORMAL EVERSION OF THE EYELIDS AND IS SEEN IN A SUBSET OF PATIENTS WITH ICHTHYOSIS AND ERYTHRODERMA. IT LIKELY RESULTS FROM EYELID HYPERKERATOSIS AND, VIA DRYING AND RADIAL SHRINKAGE OF THICKENED STRATUM CORNEUM, FROM SUBSEQUENT INCREASED TENSION ON THE EYELID MARGIN AND SLIGHTLY INCREASED WEIGHT. ECTROPION IS MOST PRONOUNCED IN NEONATES WITH AUTOSOMAL RECESSIVE CONGENITAL ICHTHYOSIS, PARTICULARLY IN THOSE WITH HARLEQUIN AND LAMELLAR ICHTHYOSIS CLINICAL SUBTYPES. ALTHOUGH ECTROPION ALMOST UNIVERSALLY IMPROVES BEYOND THE NEONATAL PERIOD, IT CAN PERSIST THROUGHOUT LIFE, AND MEDICAL CONSEQUENCES, INCLUDING KERATITIS, CONJUNCTIVITIS, AND EPIPHORA, CAN ENSUE. MANY AFFECTED INDIVIDUALS CITE ECTROPION AS ONE OF THE MOST COSMETICALLY DISPLEASING ASPECTS OF THEIR DISEASE. THERE IS CURRENTLY NO STANDARD OF CARE FOR THE TREATMENT OF ECTROPION, AND ALTHOUGH SURGICAL INTERVENTION IS OFTEN ATTEMPTED, RESULTS ARE VARIABLE, WITH FREQUENT RECURRENCE OF ECTROPION OR UNSATISFACTORY COSMETIC OUTCOMES.

With the recognition that abnormal keratinization likely underlies ectropion, however, it is unsurprising that surgical intervention often fails.

In the course of using oral retinoids to treat patients with ichthyosis, they and we have noticed that improvement in their ectropion is often dramatic. Several years ago we evaluated a 45-year-old man with severe lamellar ichthyosis and inflammatory bowel disease whose ectropion led to tearing, which interfered with his work. Because he was reluctant to take oral retinoids, we opted to try topical retinoids applied to the lower eyelids. The use of both topical tretinoin cream and later tazarotene cream resulted in significant improvement in ectropion and diminished tearing. We present herein a case of another patient with autosomal recessive congenital ichthyosis for whom topical tazarotene cream, 0.1%, was effective in the treatment of bilateral ectropion of the lower eyelids.

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**REPORT OF A CASE**

A 77-year-old woman with recessive ichthyosis presented to our disorders of keratinization clinic for evaluation of long-standing bilateral lower eyelid ectropion. The patient had previously received ophthalmologic follow-up and been treated with several topical therapies for expo-
sure keratitis, subepithelial corneal scarring, and chronic punctate keratitis. At the time of presentation she was using loteprednol etabonate ophthalmic suspension, cyclosporine ophthalmic emulsion, and 2 varieties of artificial tears. She was considering surgical correction of the ectropion but was also interested in alternative treatment options. On examination, erythroderma with generalized platelike scaling and bilateral pronounced ectropion of the lower eyelids was present (Figure 1A and Figure 2A).

The patient was instructed to apply tazarotene cream, 0.1%, daily to both lower eyelids, which improved eye discomfort symptoms and degree of the ectropion within 2 weeks. Continued improvement in the ectropion and associated symptoms of eye irritation and dryness was noted at 4 months, at 1 year (Figure 1B and Figure 2B), and at 30 months (Figure 1C) without any adverse effects.

**DISCUSSION**

Ectropion is a common complication of ichthyosis and is associated with substantial medical and cosmetic consequences. Given limited treatment options, surgical repair is often attempted and results are frequently short lived because surgery fails to correct pathologic hyperkeratinization. Retinoids are vitamin A analogues that modulate keratinocyte differentiation and proliferation. Retinoids and vitamin A are potent inducers of epidermal hyperplasia, but they also display “antikeratinizing” effects, which are likely responsible for their therapeutic effect in ichthyosis. For example, retinoids and vitamin A cause dyshesion, or “loosening,” as well as thinning of the stratum corneum. It is likely these effects on the stratum corneum that mitigate hyperkeratosis in patients with ichthyosis. Tazarotene, a topical retinoid, works via binding of retinoic acid receptors in the skin. Whereas tazarotene has been efficacious in the treatment of congenital ichthyoses, to our knowledge, its effect on ectropion has not been reported. Because the use of topical tazarotene and other retinoids leads to a less cohesive and thinner stratum corneum, topical tazarotene and other retinoids provide a potential effective treatment and alternative to surgical intervention for ectropion. In our patient, tazarotene cream, 0.1%, applied once daily produced rapid and sustained improvement in bilateral lower eyelid ectropion without adverse effects. Although the results in this patient support the use of tazarotene for ectropion, clinical trials will be necessary to more fully and systematically address the safety and efficacy of tazarotene and other retinoids in the treatment of ectropion in patients with ichthyosis. In the interim, we encourage clinicians to consider medical therapies as alternatives to surgical intervention for treatment of ectropion in patients with ichthyosis; however, we caution that the concentration, amount, and frequency of tazarotene used successfully by our patient may not be appropriate for all.

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REFERENCES