

Periorbital Dermatitis

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Case Report

A 90-year-old woman presented with severe bilateral erythematous and edematous periorbital dermatitis of 1 month's duration (Fig 1). Her ophthalmologist had been treating her with tobramycin 0.3% ophthalmic solution and ointment (Tobrex, Alcon Pharmaceuticals, Fort Worth, TX) for bilateral bacterial conjunctivitis. She began to notice the rash after approximately 1 month of use. She continued to use the medication and subsequently developed increased ocular discomfort and worsening of the periorbital eruption. After reevaluation by the ophthalmologist, she began using fluorometholone 0.1% ophthalmic ointment (FML, Allergan, Inc., Irvine, CA) in addition to the ocular antibiotic preparations. The dermatitis persisted despite treatment with the topical corticosteroid.

Past medical and surgical history included hypertension and right corneal transplantation 6 years prior to presentation. The patient denied any history of contact allergies.

Patch testing was performed with our screening patch-test series of 58 allergens (Chemotechnique Diagnostics, Malmö, Sweden), selected cosmetic allergens, and the patient's ophthalmic medications, according to the North American Contact Dermatitis Group's guidelines. Positive reactions were noted to Tobrex ophthalmic solution and ointment at 48 and 96 hours. There was no reaction to neomycin, FML ophthalmic ointment, corticosteroid markers, benzalkonium chloride, or the other vehicle ingredients of the Tobrex preparations.

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Contact Puzzle features brief case reports that illustrate dramatic and/or unusual examples of contact dermatitis. Submitted manuscripts should be a maximum of six pages printed in 12-point font, double spaced. Format includes Case Report, Diagnosis, Discussion, and References (six or less). A color photograph(s) of the clinical problem is required; color photograph(s) of patch-test results or ancillary test is optional.



Figure 1. Severe bilateral periorbital dermatitis.

What is your diagnosis?

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DOI 10.2310/6620.2006.05018

Diagnosis

Allergic contact dermatitis from tobramycin in an ophthalmic preparation.

Discussion

Tobramycin, an aminoglycoside antibiotic commonly used in ophthalmic and otic preparations, is a known cause of contact allergy, and cases of dermatitis of the periorbital and periauricular areas have been reported. Cross-reactivity between aminoglycoside antibiotics and neomycin is well documented.¹⁻³ A cross-sensitivity rate of 25 to 65% has been noted for tobramycin and neomycin.⁴ Neomycin is a common allergen used in most standard patch-test series. Tobramycin's chemical structure (4,6-di-O-substituted deoxystreptamine and 3-deoxyneostamine) is similar to that of neomycin.⁵ Our patient did not react to neomycin, and her allergy to tobramycin was detected only by testing with the ophthalmic preparations.

While potential cross-sensitivities may be relevant in terms of sensitization and for avoidance purposes, patch testing with the suspected agent in addition to known cross-reactors is necessary to determine the causative allergen. In this case, reliance on neomycin cross-sensitivity would have failed to elucidate the etiology of our patient's allergic contact dermatitis.

References

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