

Allergic Eyelid Dermatitis as the Sole Manifestation of Gold Hypersensitivity

Lindsey M. McDaniel, M.D.* and Steven M. Couch, M.D., F.A.C.S.†

Abstract: Gold hypersensitivity is a cause of periorbital dermatitis that often presents as a diagnostic challenge for many ophthalmologists. Six female patients are described as presenting with isolated bilateral periorbital dermatitis. Main symptoms included itching (3/6), eyelid redness (3/6), and drooping eyelids (3/6) for an average duration of 16.8 months prior to referral. All 6 patients failed conservative management. Recurrence of symptoms necessitated allergic patch testing, revealing a severe hypersensitivity reaction to gold in all cases. By discontinuing contact with gold, specifically gold jewelry, the allergic periorbital dermatitis completely resolved. No patients required surgical intervention for eyelid malposition. Increased awareness of this reversible cause of allergic periorbital dermatitis may improve patient outcomes.

Periorbital dermatitis is an inflammatory reaction that may be caused by many conditions, including allergic contact dermatitis, irritant dermatitis, atopy, seborrhea, dermatomyositis, rosacea, and infections. Allergic contact dermatitis is the most common etiology of periorbital dermatitis.^{1,2} Eyelids are commonly affected by allergic contact dermatitis, presumably due to the extremely thin nature of the periorbital skin (0.55 mm compared with 2.0 mm in other parts of the face) allowing for easy penetration of contact allergens.²⁻⁴ Causal contact allergens may be transferred in many ways, including direct contact exposure via spouses, partners, or friends who transmit the allergen (“consort dermatitis”) or from one body site (fingers) to a more sensitive site (face, eyelids) (“ectopic dermatitis”).^{2,5}

Common causes of allergic periorbital dermatitis include fragrances, nickel, and multiple components of cosmetic products.⁵ Gold hypersensitivity is a less common cause of isolated allergic periorbital dermatitis that, despite being recognized as such in the dermatology literature, has been unexplored in ophthalmology literature. Here, the authors report a series of 6 patients who presented with inflammation of the eyelid skin due to exposure to gold jewelry at sites distant from the eyelids.

CASE REPORTS

Following institutional review board approval, a retrospective review was performed. Six female patients are treated. Mean patient age was 49.5 years (range, 32–61 years). Three patients (1, 2, and 5) were referred for eyelid dermatitis

specifically, while the remaining 3 were referred for other ocular complaints, including droopy eyelid (patients 3 and 6) and epiphora (patient 4). The average duration of symptoms prior to referral to the oculoplastic clinic was 16.8 months (range, 4–36 months).

On examination, bilateral, predominantly upper eyelid cutaneous erythema, edema, and desquamation were noted in all patients (Fig. A). Two patients had mild involvement of lower eyelids and simultaneous conjunctival papillary reaction. All patients were free of rashes elsewhere.

Given the lack of other obvious causes, the initial etiology was presumed to be either cosmetics (patients 1, 3, and 5) or face wash/lotion (patients 2, 4, and 6). Initial management included topical loteprednol etabonate ophthalmic ointment 0.5% (Lotemax; Bausch & Lomb, Bridgewater, NJ, U.S.A.) and discontinuation of a single makeup product or facial product. Patients were then re-evaluated after at least 1 month (average length of initial treatment, 1.25 months; range, 1–2 months). Four patients underwent cyclical therapy with abstinence from other products and additional ointment. After all conservative causes of allergic contact dermatitis were excluded, partial improvement in original presenting symptoms was seen in 5 patients and no improvement in 1 patient (patient 5).

Due to incomplete resolution of symptoms, each patient was continued on Lotemax ointment twice daily and referred to dermatology for patch testing. Five patients (patients 2–6) developed severe delayed hypersensitivity reactions to gold. Patient 1 initially had negative patch testing and was started on tacrolimus. Her symptoms resolved while on the medication; however, she relapsed on discontinuing the tacrolimus. The initial allergist did not test for gold sensitivity, so she was sent for repeat patch testing, which revealed a positive reaction to gold. All 6 patients were instructed to discontinue wearing gold jewelry. This resulted in full resolution of the periocular dermatitis in 4 of 6 patients (patients 1, 3, 4, and 6). Patients 2 and 5 required their spouses to also stop wearing gold to achieve full symptom resolution. All 6 patients experienced full resolution after abstaining from gold. No patients required surgery for eyelid malposition.

DISCUSSION

Hypersensitivity reactions to gold have been documented in the Ophthalmology literature dating as far back as the 1940s when Forster and Dickey reported a sensitivity reaction to a gold ball implant in a 29-year-old woman, whose inflammatory reaction resolved after removal of the implant.⁶ More recently, gold hypersensitivity has been noted in response to gold-weighted implants used in patients with paralytic lagophthalmos⁶; however, the idea of gold hypersensitivity as a cause of periorbital dermatitis has been unexplored in the Ophthalmology literature.

Hypersensitivity reactions to gold have been thought to be uncommon because of the inert property of gold, which helps in resisting attack from air and water.⁷ This topic became of interest in the dermatology literature starting in the 1990s, with case reports of gold causing inflammation at the site of the jewelry contact.^{3,8,9} Multiple studies went on to report the frequency of positive patch testing to gold to be anywhere from 0.8% to 13%.⁶ Fowler et al.¹⁰ reports a prevalence of 9.5% in his North American study; however, it should be noted that a positive patch test to gold does not necessarily indicate the patient has a clinically relevant allergic reaction to gold.⁷ Presently, gold is not included in either the National American Contact Dermatitis Group Standard Tray or the North American Extended Series of allergens.

*Mason Eye Institute, Department of Ophthalmology, University of Missouri; and †Department of Ophthalmology and Visual Sciences, Washington University, School of Medicine, St. Louis, Missouri, U.S.A.

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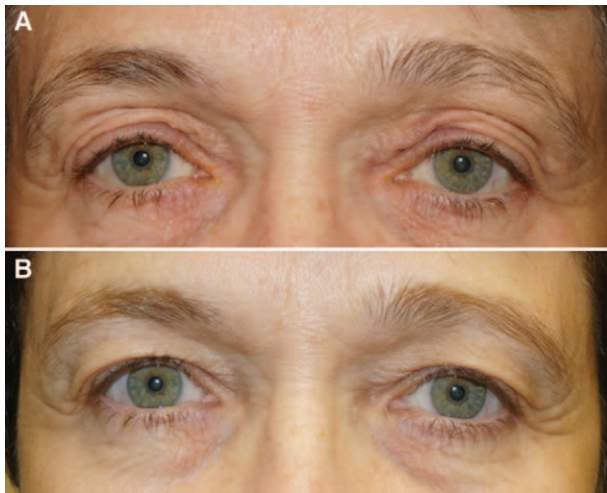
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Address correspondence and reprint requests to Steven M. Couch, M.D., F.A.C.S., 660 South Euclid Avenue, Campus Box 8096, St. Louis, MO 63110. E-mail: couchs@vision.wustl.edu

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Periocular dermatitis due to gold hypersensitivity. **A**, Bilateral, predominantly upper eyelid erythema, edema, and desquamation due to gold hypersensitivity. **B**, Periocular dermatitis fully resolved after abstaining from gold contact.

This is because of the prevalence of gold allergies identified in patch testing that were not clinically significant. Therefore, it may be sufficient to reserve allergic patch testing for patients with refractory allergic periorbital dermatitis after other, more common causes have been excluded. In patients where gold is thought to be a possible cause, it is important that gold patch testing is specifically requested to make the diagnosis. Most of those sensitized to gold are women (~90%), presumed to be secondary to increased frequency of ear piercing and wearing gold jewelry.^{5,7,9–11}

Unlike other metals found on routine patch testing, gold has a higher propensity for involvement in facial and eyelid dermatitis.^{7,9} In 1988, Fowler⁸ reported 2 cases of isolated eyelid dermatitis due to gold hypersensitivity, both of which resolved after discontinuing contact with gold jewelry. Later, Ehrlich and Belsito⁷ reported that 7 of 17 patients with gold allergy had eyelid blepharitis, with 46.7% attaining symptom resolution by abstaining from contact with gold. Here, the authors report a series of 6 women who presented with isolated bilateral upper eyelid dermatitis, who each experienced significant morbidity for many months while their conditions went undiagnosed. These 6 patients also achieved full symptom remission after contact with gold was discontinued.

Although gold is not the most common cause of periorbital dermatitis, it remains an important topic of discussion. Chisholm et al.¹² recently reported on 8 of 61 patients with allergic periorbital dermatitis who did not respond to initial therapies and were sent for patch testing. Four of these patients were found to be allergic to gold and achieved symptom resolution when they stopped wearing gold jewelry. More common causes of allergic periorbital dermatitis in this series included glaucoma eye drops, facial creams/lotions, and cosmetics, which commonly resolve with removal of those agents.¹²

In conclusion, common causes of periorbital dermatitis have been reviewed in the dermatology literature, but there is a gap in this knowledge in the ophthalmology literature and many ophthalmologists are still unaware of this condition. Gold as a cause of allergic contact dermatitis, specifically of the periorbital region, can initiate significant morbidity for patients. Knowledge of this and other causes of periorbital inflammation remains important in determining how ophthalmologists evaluate and treat patients with refractory allergic periorbital dermatitis.

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