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TO STUDY CHARACTERISTICS OF OCULAR FINDINGS OF PATIENTS AND EYE LID DERMATITIS

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ABSTRACT

Allergic contact dermatitis is considered one of the most common causes of eyelid dermatitis. In addition to metals and topical antibiotics, fragrances have emerged as a leading source of contact allergy for individuals with this condition. The objective of this study was to determine characteristics of ocular findings of patients and eye lid dermatitis.

Keywords : Eye lid, Ocular findings



INTRODUCTION

Although the focus of this article is eyelid dermatitis, there are other skin conditions that may also occur in the periorbital region. These include seborrhoeic dermatitis, psoriasis, vitiligo and viral and bacterial infections. Clinical photographs of some these conditions have been included (Figs 1-9). Although eyelid dermatitis is common in atopic patients, one needs to exclude allergic and irritant contact dermatitis by history, clinical examination and patch testing. Most eyelid dermatitis occurs against a background of atopy and there is a female preponderance. Although atopic dermatitis may occur on both the upper and lower eyelids, involvement of the upper eyelid alone is usually suggestive of atopic dermatitis. Contributory factors include exposure to environmental elements such as dry weather and wind. Exposure to irritants may compound the problem. Because skin on the eyelid is extremely thin, percutaneous permeability is enhanced. This results in increased sensitivity which makes the eyelid prone to dermatitis. In patients with chronic eyelid dermatitis, the stratum corneum barrier is breached and oedema and lichenification occur. In some patients, severe lichenification and oedema may cause ectropion and constant tearing. Rarely atopic dermatitis may be associated with ocular complications such as vernal conjunctivitis, keratoconus and cataract. Atopic eczema patients are prone to infection with herpes simplex (eczema

herpeticum) and this may involve both the skin and eye. Ocular involvement can lead to corneal scarring and blindness. Prompt treatment with antiviral agents can prevent serious sequelae. When a patient presents with eyelid dermatitis, the history provides important clues in differentiating the types of dermatitis. The following questions help us in our assessment: 1. What is the duration of the dermatitis? Longstanding eyelid dermatitis which is intermittent is usually atopic. The longer the duration of the eyelid dermatitis, the more unlikely it is to be allergic contact dermatitis. Severe, sudden-onset (short-duration) eyelid dermatitis is usually due to allergic contact. However, weak allergens (e.g. fragrances in cosmetics) may cause long-term rashes. 2. Where did the dermatitis begin? Although involvement of the upper eyelid alone is usually due to atopic dermatitis, atopic patients can have both upper and lower eyelid dermatitis. Allergic contact dermatitis usually occurs on both the upper and lower eyelid. 3. Are there any other body areas affected by dermatitis? Dermatitis on the flexures such as the antecubital region corroborates the diagnosis of atopic dermatitis. Many patients with atopic dermatitis have sparing of the nasal region (head-lamp sign). 4. Is there any history of atopy such as atopic dermatitis, asthma or hay fever? 5. What ocular preparations has the patient been using? If there is recent history of application of eye products such as contact lens solution, antibiotics or local anaesthetic, this may suggest allergic

contact dermatitis. Also, has the patient used any new cosmetic products? Irritant contact dermatitis may occur from new cosmeceuticals containing alpha hydroxy acid, and vitamin A or retinoid cream. 6. What environmental factors could be involved? The patient should be questioned about his or her total environment: house, work and hobbies. Eyelid dermatitis in a patient with hobbies such as carpentry (use of glues) or painting may be due to exposure to epoxy resin. Occupational history is important, e.g. allergic contact dermatitis on the eyelids in a dentist may be due to Caine mix. Eyelid dermatitis due to contact allergy Allergens affecting the face may initially produce an eyelid dermatitis, as the skin of the eyelids is thin, sensitive and may be contaminated by the fingers (e.g. nickel), by airborne droplets (e.g. fragrance sprays), or by volatile substances (e.g. epoxy resin). On the face allergic contact dermatitis often presents around the eyes with erythema, scaling and peri-orbital oedema. Allergic contact dermatitis from permanent and semipermanent hair dyes is usually localised on the face (including the eyelids) rather than on the scalp itself. The peri-orbital oedema may be profound and may be mistaken for angioedema (urticaria). However angioedema is not associated with any cutaneous scaling or eczematous changes. This clinical picture may also follow exposure to poison ivy. The sources of allergens which cause eyelid dermatitis include eye cream, eye shadows, mascara and eye make-up removers, as well as face and hair products. The formaldehyde releasers

include quaternium 15, imidoazolydine urea, Kathon G and bronolol. The nonformyldehyde releasers include parabens and thiomersal (eye products). Chemicals such as 5-chloro-2- methyl-4-isothiazolin-3 (Kathon G) is one of the most commonly used preservatives found in shampoos and household products. Eyelid dermatitis may be caused by sensitizers found in eye drops and ointments. These include local anaesthetics, antihistamines, beta-blockers, anticholinergics, neomycin and sulphonamide antibiotics. Neomycin sulphate is a broad-spectrum antibiotic often used in combination with corticosteroids. Because of its combination with a topical steroid, the allergic reaction may be suppressed and go unrecognised. Eyelid dermatitis may also occur as a result of contact lens fluid containing benzalkonium chloride and thiomersal. Cosmetics Eyelid dermatitis caused by nail varnish may be due to direct contact with the nails or due to the volatile nature of the nail varnish. Contact allergens found in nail polish and nail hardeners include toluenesulphonamide and formaldehyde resin. Sesquiterpene lactone found in composite flowers (arnica, chrysanthemum and camomile) used in cosmetics and skin ointments is another possible irritant. In addition primin may cause airborne contact allergy involving the eyelids. Recently the cosmetic industry has tried to eliminate known sensitizers and irritants. However, preservatives have a role in preventing the overgrowth of bacteria in waterbased products. These preservatives may occasionally cause allergic contact dermatitis. Patch testing Patch testing for

contact allergens is essential for specific identification of positive agents. 'Leave-on' products such as cosmetics and perfumes may be applied full strength. Cleansing products may be diluted to 10%. Mascara is often irritant and should be applied on the second visit, having been applied to a chamber at the first visit and left to evaporate. Successful therapy depends on the avoidance of contact with specific allergens. Therapy The aim of treatment is to decrease the trigger factors and pruritus, suppress inflammation and lubricate the eyelid skin. Acute exudative eyelid dermatitis may be treated with cool compressors or ice packs four times a day. The most important therapeutic tool in the management of acute eyelid dermatitis is the use of midpotency topical steroids such as mometasone furoate (Elocon), methylprednisolone aceponate (Advantan) and clobetasol butyrate (Locoid). These mid-potency steroids may be used for short periods only (approximately 3 days). Frequent use of soothing and bland emollient ointments (white soft paraffin/Vaseline, SBR Lipocream, Epizone E, Physiogel) is helpful. More severe eyelid dermatitis may be treated with a short course of oral steroids (prednisone 60 mg for 5 days). One should avoid long-term use of topical corticosteroids (even the mild agents that do not contain 1% hydrocortisone) for eyelid dermatitis because of the danger of side-effects such as atrophy, bruising and peri-orbital and acneform rash. Long-term steroid use may also result in dependency and tachyphylaxis. Cessation of the topical steroid may lead to regular rebound.

Systemic antihistamines such as hydroxyzine (Aterax) may alleviate the pruritus. The abovementioned treatment is required for acute eyelid dermatitis, whatever the cause, including atopic dermatitis (where one may get sudden flare-ups), allergic contact dermatitis or irritant dermatitis. In allergic dermatitis, the key to successful management is the avoidance of further contact with the allergens. Patch testing identifies the causative allergens. One needs to avoid long-term use of topical corticosteroids in the management of chronic eyelid dermatitis because of the side-effects. Causes of eyelid dermatitis include contact dermatitis (allergic and irritant), atopic dermatitis, seborrheic dermatitis, and rosacea.⁹ Allergic contact dermatitis is the most common cause of eyelid dermatitis.⁹ Other conditions that can mimic eyelid dermatitis include dermatomyositis, urticaria, infections, neoplasms, discoid lupus erythematosus, and systemic lupus erythematosus.¹⁰ Eyelash curlers, make-up applicators, nail polish, facial or hand moisturizers, artificial nails, household cleaners, carpentry products, paint, shampoos, eye drops, mascara, lipstick, hair dyes, and topical antibiotics can be associated with eyelid dermatitis.¹¹ Dry weather and a windy climate can increase superficial skin permeability to allergens and irritants leading to edema and lichenification of the skin.¹¹ Allergic contact dermatitis is believed to be mediated by a type IV hypersensitivity reaction, while irritant dermatitis is believed to be mediated by a direct toxic effect.^{11,12} Seborrheic

dermatitis is related to colonization by various yeast strains in association with a disrupted immune response.^{11,12} Clinical Features Eyelid dermatitis can affect one or both eyes and cause a pruritic, painful eczematous scaly rash around the eyes.¹ In some cases, the rash becomes crusty and oozing vesicles are noted.¹³ The conjunctivae is usually spared.¹¹ As time progresses, the skin becomes thickened and secondary infections can develop.^{3,11} Isolated involvement of the upper eye lids is more suggestive of atopic conditions.¹¹ Some atopic patients often have involvement of both the upper and lower eyelids.^{11,12} Ocular complications can occasionally occur such as corneal abrasions and conjunctival infections.¹² Signs and symptoms can be intermittent or can be chronic and long-standing.¹² The shorter the duration, the more likely it is to be allergic contact dermatitis.¹² Atopic patients often have eczematous skin changes in the antecubital regions and sparing of the nasal region.¹² Irritant contact dermatitis is also common and can be associated with vitamin A creams and alpha hydroxyl acid creams.¹² Upper lid involvement tends to be associated with airborne allergens, while lower lid involvement is more commonly associated with an exposure to a topical preparation.¹¹ The presence of vesicles can be a sign of herpetic viral infection while honey-colored crusting may indicate bacterial impetigo.¹¹ Diagnosis and Testing Diagnosis is typically made through a careful history and by noting improvement with avoidance of potential causative agents.¹³ Although patch testing is often

used to isolate specific allergens, many allergens are not included in standard allergy testing.¹¹ Moreover, it can be challenging to eliminate each of the potential allergens or irritants.¹¹ If vesicles are present, a viral culture or Tzanck smear should be obtained.¹⁰ Bacterial cultures can be checked if suspected.¹¹ Biopsies are rarely performed, but occasionally can be helpful.¹¹ KOH examination should be checked if appropriate.¹³ Blood tests (such as total serum IgE, RAST testing, ANA, CPK, and adolase) and skin prick testing are often abnormal, but rarely helpful in terms of diagnosis and treatment.¹³ Treatment Treatment for eyelid dermatitis depends on the suspected etiology.¹⁴ Patients with suspected contact dermatitis usually undergo patch testing and suspected allergens completely eliminated.¹¹ Patient education is vital in ensuring that the patient avoids any potential exposures.¹⁴ Acute episodes of contact or atopic dermatitis are usually treated with low to midpotency topical steroids for 5-10 days or a short course of oral steroids.¹¹ Topical steroids should be used judiciously because of the risk of skin atrophy, telangiectasias, and striae.^{11,14} Once symptoms have improved, proper moisturization is important to ensure maintenance of the skin barrier.¹⁴ All potential causative agents should be removed if possible.¹⁴ An oral antihistamine at bedtime can sometimes be very helpful during the acute period.³ Seborrheic dermatitis is usually treated with ketoconazole cream while treatment shampoos (with selenium, zinc, ketoconazole, or salicylic acid) are used

to treat the scalp.^{3,14} Steroids are usually avoided in these patients.² Eyelid dermatitis related to rosacea can be treated with oral tetracycline, doxycycline, or minocycline for 4-6 weeks.³ Eyelid hygiene is also very important including warm compresses and antibiotic eye drops.¹⁴ Prognosis Eyelid dermatitis typically has a good prognosis assuming the correct diagnosis is made and treatment plan followed.² Some patients improve and then relapse over time.² Some patients suffer relapses related to an allergic contact dermatitis from topical antibiotics and inactive ingredients in other preparations.³ Preparations with as few extra ingredients as possible should be used. ¹¹ Follow-up patch testing may be considered in difficult cases or if patients relapse. ¹¹ Clinical Course and Follow-Up The patient was managed with low-potency topical corticosteroids. Over the course of 6-8 weeks, she gradually improved. She also had patch testing and tested positive for dimethylaminopropylamine. Going forward, she carefully avoided products that contain dimethylaminopropylamine. The introduction of the non-steroid immunomodulators such as pimecrolimus and tacrolimus (Elidel) has provided us with an excellent armamentarium for the management of this difficult condition. Pimecrolimus and tacrolimus are used to prevent flare-up of peri-orbital atopic dermatitis, thus decreasing or eliminating the use of topical steroids. If patients develop steroid-induced acneform rash/rosacea around the peri-orbital region,

one may prescribe oral antibiotics including lymecycline, doxycycline or minocycline. It is important to explain to patients who have used topical steroids in the long term that withdrawal of the topical steroid will lead to a rebound which may resolve after many months. The application of soothing emollients including Vaseline is extremely helpful. Finally, it is imperative that topical steroids are not used in the long term in management of peri-orbital dermatitis.

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