REVIEW CLINICAL PHARMACOLOGY AND
PHARMACOKINETICS, INTERNATIONAL
EDITION: 139-141 (2020)

Case Report

Conjunctivitis and eyelids edema

Efstathios Rallis[1], Eleni Andreou[2], Foteini Biskanaki[3], Eleni Sfyri[4], Niki Tertipi[5], Vasiliki Kefala[6]

[1]Dermatologist PhD Assistant Professor, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, Athens, Greece

[2]Aesthetician Cosmetologist MSc, PhDc, Academic Scholar, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, Athens, Greece

[3]Aesthetician Cosmetologist MSc, PhDc, Academic Scholar, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, Athens, Greece

[4]Lecturer, PhDc, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, Athens, Greece

[5]Lecturer, PhDc, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, Athens, Greece

[6]Aesthetician Cosmetologist, Pharmacist PhD Professor, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences School and Welfare. University of West Attica. Campus 1, Athens, Greece

Key words: microbiome, prebiotics, probiotics, synbiotics, dermatological diseases

Accepted for publication (Final version): June 30, 2020

'S u m m a r y – Introduction: A 27-year old female was referred to our department with bilateral edema of upper eyelids and conjunctivitis (Figure 1). The lesions were symmetric, mildly pruritic, experiencing remarkable

'*Corresponding author:* Dr Efstathios Rallis, Dermatologist PhD Assistant Professor, Laboratory of Dermatology-Aesthetics-laser applications (lablad), Sector of Aesthetics and Cosmetology, Department of Biomedical Sciences. Faculty of Health Sciences and Welfare, University of West Attica, Campus 1, 5-7 King Alexander Av., Athens GR-11528, Greece. E-mail: efrall@otenet.gr

Send reprint requests to the publisher: Dr Helen S. Plessa, 9A Kanari Str., GR-15239, N. Penteli, Athens, Hellas, E-mail: pharmakonpress@pharmakonpress.gr, Tel. +30210-9756332

discomfort from the patient. The rest of the dermatological examination was unremarkable.

What's the diagnosis?
A. Rosacea
B. Seborrheic dermatitis
C. Contact reaction to eyelash extensions
D. Demodicosis (*Demodex* blepharitis)

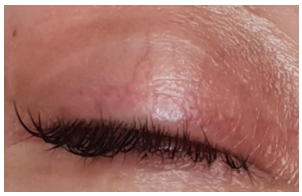
DISCUSSION

The correct answer is: C. Based on the patient's history, she recently underwent two sessions of eyelash extensions. She had no previous allergic history and visited an aesthetic – lash stylist to have her lashes extended for the first time. During the procedure she was asymptomatic. However, 1-2 days after the second session, mildly pruritic erythema of the conjunctiva was developed. She also complained of "heavy eyelids" due to the edema of the upper eyelids. She experienced a remarkable discomfort with burning sensation thus, she returned to her cosmetic beautician. The glued-on lashes were removed. She was also prescribed a topical corticosteroid ophthalmic ointment by her dermatologist. The lesions subsided a week after removal of the artificial lashes and application of the medication.

The practice of cosmetic enhancements has gained popularity worldwide, during the last few years (1). One of the most popular procedures is the eyelashes extensions using glue-on silk lashes, performed by a lash stylist (1,2) (Figure 2). However, with these newly introduced techniques, several unknown adverse effects, not only to stylists but also to clinicians, have raised. We strongly agree with Moshirfar M et al (1), that continuing further evaluation of the chemicals used in these procedures is needed, to improve safety and to prevent adverse effects from occurring.

Rosacea is a common, chronic, inflammatory, cutaneous disease characterized by repeated remissions and exacerbations. Clinical manifestations include recurrent face flushing, telangiectasia, facial erythema, papules, pustules, and phymatous changes (phinophyma). It affects predominantly the nose, cheeks and chin. Involvement of the eyes, also known as ocular rosacea, is estimated to occur in up to three quarters of patients with rosacea (3). Ocular signs strongly suggestive of ocular rosacea include lid margin telangiectasias, interpalpebral conjunctival injection, spade-shaped infiltrates in the cornea and scleritis and sclerokeratitis (4). Other common signs seen in ocular rosacea but not specific to this disorder include "honey crust'' and collarette accumulation at the base of the lashes, irregularity of the lid margin and evaporative tear dysfunction (4).

[a]



[b]

FIGURE 1. Bilateral edema of upper eyelids and conjunctivitis

FIGURE 2. Eyelashes extensions using glue-on silk lashes

Seborrheic dermatitis is a common, chronic, relapsing, inflammatory skin condition that occurs in the sebaceous regions of the scalp, face, chest, back, axilla, and groin. It affects approximately 1% - 3% of immunocompetent adults (5). Clinical manifestations include erythema, scaling and itching (6). Seborrheic dermatitis of the eyelids, also called "eyelash dandruff", is presented with inflammatory and erythematous eyelids, scaling and/or crusts on the eyelids and the eyelashes. Eye irritation, dryness and itching may also be seen.

TABLE1. Summary table

Condition	Characteristics	Etiology
Contact reaction to eyelash extensions	Conjuctivitis, blepharitis, edema ("heavy eyelids"), burning sensation, itching, tearing.	Allergic or irritant contact reaction due to chemicals used in this procedure.
Rosacea	Ocular signs include lid margin telangiectasias, interpalpebral conjunctival injection, spade-shaped infiltrates in the cornea, scleritis, sclerokeratitis, "honey crust'' and collarette accumulation at the base of the lashes, irregularity of the lid margin and evaporative tear dysfunction (4).	Etiology is unknown. Many pathogenic pathways, including defects in the innate and adaptive immune systems,mast cells, related biochemical mechanisms, and the neurovascular system (4).
Seborrheicdermatitis	Seborrheic dermatitis of the eyelids is presented with inflammatory and erythematous eyelids, scaling and/or crusts on the eyelids and the eyelashes. Eye irritation, dryness and itching may also be seen.	The pathophysiology of seborrheic dermatitis is not completely understood (5). Malassezia yeast seems to cause a nonspecific immune response that begins the cascade of skin changes that occur in seborrheic dermatitis (6).
Demodicosis (*Demodex* blepharitis)	Demodicosis symptoms include itching, burning, foreign body sensation, crusting or matted lashes, tearing, blurry vision, ocular discomfort or irritation (7).	*Demodexfolliculorum* and *Demodex brevis* are two mites which infest the human eye and may lead to a wide range of ocular findings (7).

Ocular demodicosis is a common, but clinically underdiagnosed condition. The *Demodex* mite is seen in two forms, *Demodexfolliculorum*, which tends to inhabit the base of the lashes and *Demodex brevis,* which inhabits the sebaceous glands (7). Demodicosis symptoms include anterior and posterior blepharitis, evaporative and non-evaporative dry eye. Patients may complain of itching, burning, foreign body sensation, crusting or matted lashes, tearing, blurry vision, ocular discomfort or irritation (7). A definitive diagnosis of ocular demodicosis can be achieved by sampling lashes and examining them with a confocal microscope (8).

REFERENCES

1. Moshirfar M,Masud M, Shah TJ, Avila MR, Hoopes PC Sr. Chemical conjunctivitis and diffuse lamellar keratitis after removal of eyelash extensions. *Am J Ophthalmol Case Rep.*;12:21-3.(2018)
2. Dahlin J, Hindsén M, Persson C, Isaksson M. What lash stylists and dermatologists should know!*Contact Dermatitis.*;75:317-9.(2016)
3. Vieira AC, Mannis MJ. Ocular rosacea: common and commonly missed. *J Am AcadDermatol;* 69: Suppl 1: S36-S41.(2013)
4. Gallo RL, Granstein RD, Kang S, Mannis M, Steinhoff M, Tan J, Thiboutot D. Standard classification and pathophysiology of rosacea: The 2017 update by the National Rosacea Society Expert Committee.*J AmAcad Dermatol.*;78:148-55.(2018)
5. Rallis E, Nasiopoulou A, Kouskoukis C, Koumantaki E. Pimecrolimus cream 1% can be an effective treatment for seborrheic dermatitis of the face and trunk.*DrugsExpClin Res.*;30:191-5.(2004)
6. Clark GW, Pope SM, Jaboori KA. Diagnosis and treatment of seborrheic dermatitis.*Am Fam Physician.*;91:185-90.(2015)
7. Fromstein SR, Harthan JS, Patel J, Opitz DL. *Demodex*blepharitis: clinical perspectives.*ClinOptom (Auckl).*10:57-63.(2018)
8. Luo X, Li J, Chen C, Tseng S, Liang L. Ocular demodicosis as a potential cause of ocular surface inflammation. *Cornea.*;36(Suppl 1):S9–S14.(2017)