Two Cases of Anterior Uveitis After Laser Eyebrow Epilation

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Purpose: Laser-assisted epilation of eyebrow hair has become a common practice, but a number of ocular complications can occur. We report the cases of 2 patients who had unilateral anterior uveitis after having undergone laser removal of eyebrow hair.

Methods: This report describes 2 patients who experienced eye pain, photophobia, redness, and edema after undergoing alexandrite (755 nm) laser epilation of the eyebrow area while not wearing protective eyewear or a corneal shield.

Results: Eye examinations revealed that both patients had conjunctival injection, endothelial keratic precipitates, and cells in the anterior chamber of one eye. They were treated with topical cyclopentolate and steroid eye drops. Within a week, their symptoms had disappeared, and anterior chamber reactions were not seen. At their 3-month follow-ups, their visual acuity was 20/20, and eye examination results were normal for both eyes of each patient.

Conclusions: Laser-assisted epilation of eyebrow hair can lead to unilateral anterior uveitis, and individuals must be informed about the risks involved in laser eyebrow epilation.

Key Words: laser epilation, eyebrow hair, anterior uveitis

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Laser-assisted hair removal has become the most popular and effective method for long-term removal of unwanted hair. This involves a minimally invasive procedure that can easily be performed in a doctor's office. The most frequent complications after laser epilation are crusting, vesiculation, hypopigmentation, and hyperpigmentation of the treatment area.[1] In the literature, there are only a small number of reports of ocular complications after laser epilation of eyebrow hair.[2–10]

This report describes 2 cases with anterior uveitis after undergoing laser eyebrow epilation. Both patients had Fitzpatrick skin type 3, and they had undergone laser epilation above and between areas of eyebrows. An alexandrite laser (755 nm) with 28 J/cm^2 energy fluence and a pulse duration of 20 milliseconds was used for the procedure.

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CASE 1

A healthy 33-year-old woman with no history of ocular problems had undergone laser epilation of both eyebrows. She had her eyes shut during the treatment while not wearing protective eyewear or a corneal shield. Two days after receiving laser epilation, she complained of severe pain, photophobia, redness, and edema in her right eye. Eye examination showed her visual acuity to be 20/20, and her intraocular pressure and fundus examination results were normal in both eyes. However, biomicroscopic evaluation revealed moderate conjunctival injection, endothelial keratic precipitates, and 2+ cells in the anterior chamber of her right eye. Her left eye was normal. Also, she had no systemic diseases. The patient received topical cyclopentolate and steroid eye drops. By the following week, the patient's symptoms had disappeared and no anterior chamber reaction could be seen. Topical eye drops were gradually tapered and then stopped. At the 3-month follow-up, her visual acuity was still 20/20 in both eyes. Her intraocular pressure and biomicroscopic and fundus examination results were also normal.

CASE 2

A healthy 28-year-old woman with no history of ocular problems presented with complaints of pain, photophobia, redness, and edema in her right eye 1 day after undergoing laser eyebrow epilation. She had her eyes shut during the treatment while not wearing protective eyewear or a corneal shield. Her visual acuity was 20/20 in both eyes, but there was moderate conjunctival injection, endothelial keratic precipitates, and 3+ cells in the anterior chamber of the right eye. The patient's left eye was normal. All other findings from her eye examination were normal in both eyes. She had no systemic diseases. Her treatment consisted of topical cyclopentolate and steroid eye drops for approximately 1 month. At the 3-month follow-up, her visual acuity was 20/20 in both eyes and eye examination findings were also normal in both eyes.

DISCUSSION

Laser hair removal is a process of removing unwanted hair using selective photothermolysis to destroy hair follicles.[1] Laser-assisted systems target melanin that is present in hair follicles.[1] Selective damage of a pigmented target will result when there is sufficient flow at a wavelength that is absorbed by that target.[11] Although the results of the treatment are not affected by the laser system that is chosen as the most appropriate one for a patient, laser parameters are important. Shorter wavelengths and more laser energy can cause

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epidermal damage and side effects.[1] The surrounding pigmented tissues compete for energy, and this may cause side effects such as pain, erythema, and changes in skin pigment.[10] Alexandrite and diode lasers do not affect the more superficial epidermal tissue and are designed to avoid these potential side effects by penetrating the deeper layers of the skin. The penetration depth of these laser systems is approximately 3 to 4 mm.[2,8] When used for superficial eyebrow hair, these lasers penetrate through thin skin of the eyelid, which presents a risk and can result in damage to the pigmented eye structures.[10] Safety glasses must be used during the operation, but in most cases, it is difficult to obtain the proper orbital structure and correct size of glasses.[2,8] Also, a corneal shield can be used to protect the eyes. In addition, the normal Bell phenomenon causes the pigmented iris to reach the laser penetration range and can lead to damage of the iris pigment. Because the skin of the eyelids is thin, they are not able to protect the eyes from penetration of laser beams. As a result, a variety of clinical presentations, such as iris atrophy, anterior uveitis, posterior synechia, and cataract, can occur with laser removal of eyebrow hair.[2–10]

The retina contains the highest concentration of melanin in the body and can be damaged by lasers that are used in orbital bone structures.[3,10] However, previous case reports revealed the appearance of a normal fundus in cases with anterior segment side effects associated with laser removal of eyebrow hair.[2–10]

This research is important because ocular damage can clearly occur with laser removal of eyebrow hair. Because of the risk of developing these eye complications, even when patients use protective eyewear, laser removal of eyebrow hair may be dangerous and should only be undertaken with great caution. Individuals must be fully informed about the risks that are involved in laser eyebrow epilation. If patients choose to undergo this procedure, they need to select well-trained and experienced physicians, and protective eyewear or a corneal shield must be fitted properly. Also, when any eye pain occurs during laser treatment, the process must be stopped and the patient should be immediately referred to an ophthalmologist.

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