Case Report

Idiopathic Guttate Hypomelanosis Treated with 308-nm Excimer Light and Topical Bimatoprost

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Abstract

Idiopathic guttate hypomelanosis (IGH) is an acquired pigmentary disorder that is characterized by the presence of multiple hypopigmented macules on the shins and forearms. Albeit asymptomatic, it can cause considerable cosmetic anxiety. The pathogenesis is not fully understood and to date, there have been no successful treatments. We report a case of a 48-year-old female who presented with an 8-year history of multiple hypopigmented macules on both legs, typical of IGH. She previously failed to respond to topical pimecrolimus. She received targeted phototherapy with an excimer lamp (308 nm, 250–480mJ), and a small patch was treated once daily with topical bimatoprost, in addition to the excimer lamp. After five sessions, better improvement was noted on the combination treatment patch; she received combination treatments for further six sessions. Good repigmentation has been achieved on the smaller macules. The larger depigmented macules continue to improve with further treatments. A combination of excimer light with topical bimatoprost appears to be a promising potential treatment option for IGH, a condition where management options are otherwise limited.

Keywords: Bimatoprost, excimer light, idiopathic guttate hypomelanosis

Introduction

IGH is a benign acquired pigmentary disorder that is characterized by the presence of multiple oval hypopigmented macules on the arms and shins. The exact pathogenesis is unclear; however, chronic sun exposure has been implicated.[1] Although asymptomatic, it can cause considerable cosmetic anxiety, especially in patients with darker skin. There are no universally effective treatments.

Case Report

A 48-year-old female presented with an 8-year history of multiple depigmented macules on her legs, and this was diagnosed as IGH. She had Fitzpatrick skin phototype 4 and a positive family history of IGH. Previous treatment with topical pimecrolimus was ineffective. She received targeted phototherapy with an excimer lamp (308 nm, 250–480mJ) and in addition, a small patch was treated with once-daily topical bimatoprost (Lumigan 0.1 mg/mL). After five sessions, better improvement was noted on the combination treatment patch; she received combination treatments for further six sessions. Good repigmentation was achieved on small macules, and larger macules continued to improve [Figures 1 and 2].

Discussion

IGH is usually diagnosed based on history and clinical picture, and it should be differentiated from other hypo/ depigmentary disorders such as vitiligo, pityriasis versicolor, progressive macular hypomelanosis, lichen sclerosis et atrophicus, guttate morphea, and postinflammatory hypopigmentation. Histologically, IGH typically shows hyperkeratosis with an atrophic epidermis, and flattened rete ridges. There is decreased melanin content and a reduced number of melanocytes.[2] Electron microscopy studies by Kakepis *et al.*[3] demonstrated normal density and structure of melanocytes but an

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Figure 1: Before treatment

Figure 2: After treatment

abnormal and reduced uptake of melanocytes by the keratinocytes, suggesting a possible dysfunction disorder of the keratinocytes.

As no standard treatment is available for IGH, different medical and surgical modalities such as topical retinoids, topical calcineurin inhibitors, phenol peels, cryotherapy, superficial dermabrasion, skin grafting, and ablative and nonablative lasers have been trialed with variable success rates.

Excimer laser or light has been used for the treatment of vitiligo for many years. It stimulates repigmentation through its immunosuppression and immunomodulation effect. It is hypothesized that it stimulates melanocytes to produce melanin through keratinocyte release of enolin-1.[4] In a pilot study of six patients, Gordon *et al.* showed that the excimer laser was an effective treatment option for IGH. At the end of their 12-week study, significant repigmentation was achieved in most of the treated lesions.[5]

Bimatoprost is a prostamide F2a analogue used in the treatment of glaucoma. Increased eyelid pigmentation and hypertrichosis are its notable side effects. Bimatoprost is being increasingly used in a number of dermatological conditions such as vitiligo and alopecia areata. A histopathological study by Kapur *et al.* showed that bimatoprost-induced hyperpigmentation is caused by increased melanogenesis.[6]

We presented a case of IGH successfully treated with a combination of excimer light and topical bimatoprost. We conclude that this combination approach is a promising potential treatment option for IGH, a condition where management options are otherwise limited.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form/ forms, the patient(s) has/ have given his/ her/ their consent for his/ her/ their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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