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CASE REPORT

Imiquimod as an Adjuvant Treatment Measure for Desmoplastic Trichoepithelioma

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Desmoplastic trichoepithelioma is a rare benign adnexal tumor. Although it is a benign lesion, patients often want to treat it due to cosmetic concerns when it occurs in an easily visible site. For our two cases, topical 5% imiquimod was an attractive treatment option as it is applied by the patients themselves and it has minimal side effects, including leaving no scar. However, the lesions recurred after clinical remission. To the best of our knowledge, this is the only report on utilizing imiquimod to treat a benign adnexal tumor, and especially desmoplastic trichoepithelioma. **(Ann Dermatol 23(2) 229～231, 2011)**

-Keywords-
Adjuvant therapy, Desmoplastic trichoepithelioma, Imiquimod, Recurrence

INTRODUCTION

Imiquimod is a topical immune response modifier and it has potent immunomodulating activity through local augmentation of innate and cell-mediated immunity[1]. It is currently being used to treat a wide variety of cutaneous tumors such as basal cell carcinoma, actinic keratosis, Bowen disease, keratoacanthoma, Paget disease, mycosis fungoides and Kaposi sarcoma as well as benign skin diseases that include genital wart, wart, keloid and hemangioma.

We report here on two cases of desmoplastic trichoepithelioma and these lesions were treated with topical 5% imiquimod. They showed partial remission, but they soon recurred.

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CASE REPORT

Case 1

A 43-year-old man was referred with 10-year history of a solitary asymptomatic skin-colored nodule on the glabella and the nodule had a central depression and an elevated border (Fig. 1A). The histopathology showed nests and strands of 2～3 layers of basaloid cells surrounded by a dense fibrous stroma and many horn cysts. The findings were different from basal cell carcinoma, which shows aggregations of tumor cells varying in size and shape and typical clefts between the tumor and the stroma. Although the tumor was diagnosed as desmoplastic trichoepithelioma and this is generally treated only for cosmetic reasons, the patient insisted that the lesion should be removed without any scar. Therefore, we tried 5% imiquimod cream (Alrara™; 3M, Loughborough, UK). The patient applied a thin layer of imiquimod cream three times a week for 6 weeks. Overall, the imiquimod was well tolerated except for skin irritation at the treated site. Prominent flattening of the lesion was achieved, but the patient refused further treatment due to local irritation. Six months later with no other treatment, a skin-colored papule was still observed, but the size had decreased (Fig. 1B).

Case 2

A 65-year-old woman presented with an asymptomatic erythematous papule on the left nasal ala and she'd had this papule for 7 years (Fig. 1C). Skin biopsy showed numerous horn cysts and strands of basaloid cells surrounded by a dense fibrous stroma (Fig. 2A). The basaloid

aggregations showed no carcinoembryonic antigen positivity. Treatment was started with 5% imiquimod cream three times a week until an inflammatory response developed. An inflammatory response developed after 9 weeks with prominent flattening of the lesion (Fig. 1D). Overall, the imiquimod was well tolerated except for skin irritation at the same site. The patient revisited with the reappeared palpable papule on the previously affected site ten weeks later (Fig. 1E). Excision with a 2 mm margin was done and we observed remnant desmoplastic trichoepithelioma histologically in the excised lesion (Fig. 2B).

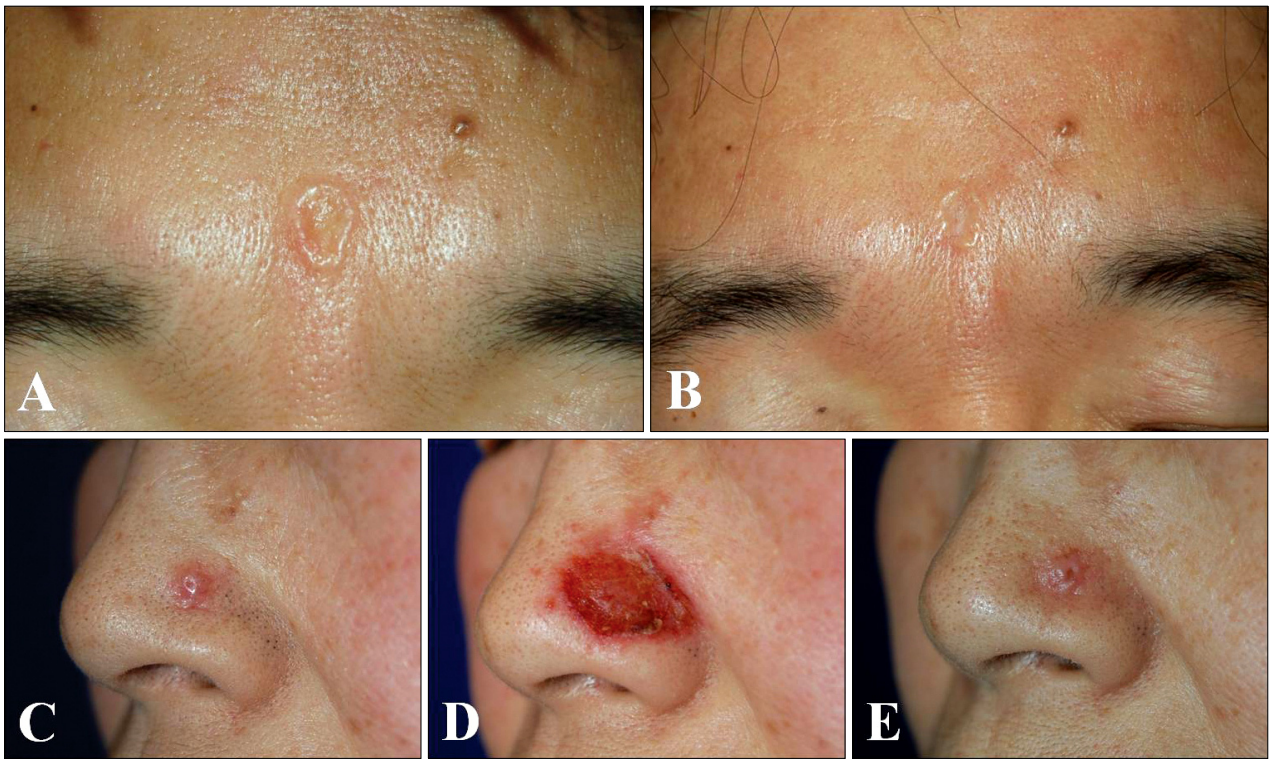

Fig. 1. Clinical findings. Before (A) and 6 months after the application of imiquimod cream three times per week for 6 weeks (B) in case 1. Before (C), after 9 weeks of imiquimod trial three times per week (D) and 10 weeks after discontinuing the treatment (E) in case 2.

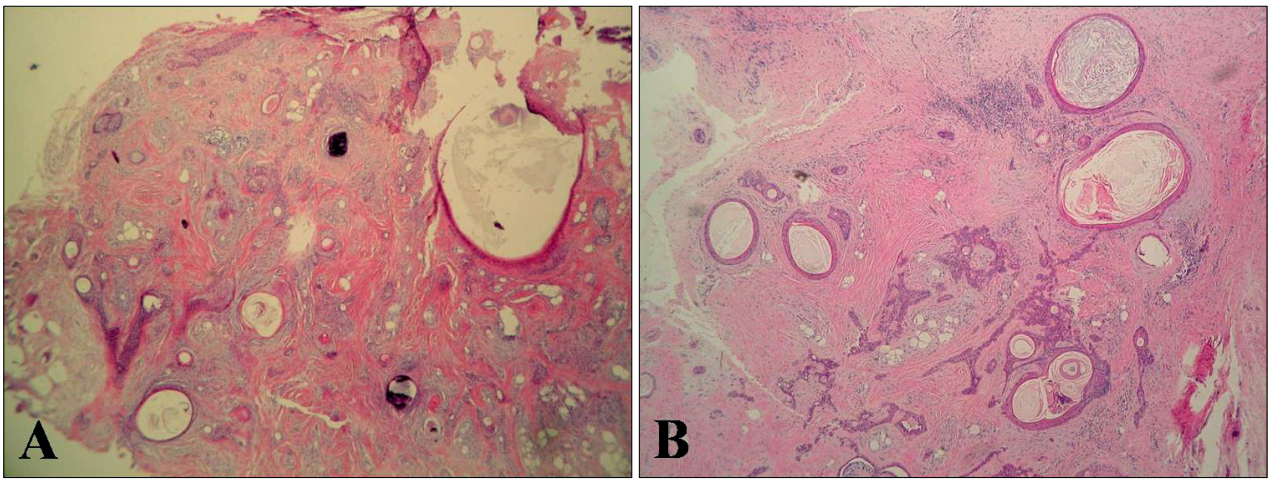

Fig. 2. Histopathologic findings. (A) There are nests and strands of basaloid cells surrounded by a dense fibrous stroma and many horn cysts (H&E, ×200). (B) Recurred desmoplastic trichoepithelioma (H&E, ×100).

DISCUSSION

Desmoplastic trichoepithelioma is a rare benign adnexal tumor with an incidence of 2 per 10,000[2]. Since it is a benign lesion, desmoplastic trichoepithelioma needs not to be treated. However, many patients want treatment because of cosmetic concerns. Surgical excision can be done, but it leaves scarring. Other alternatives such as dermabrasion and laser surgery may be associated with a considerate rate of recurrence[3,4]. Recurrence was associated with superficial ablation while deeper ablation can cause complications such as hypopigmentation and atrophy[4].

Topical imiquimod is a Toll-like receptor 7 agonist, and it is capable of stimulating the innate immunity and the cellular response of the adaptive immunity, so it is known to have potent antiviral, antitumor and immunoregulatory effects[5]. Many clinical trials have shown its efficacy for treating cutaneous infections, epidermal neoplasm, autoimmune disorders and angiomatous lesions without the drawbacks of surgical excision or locally destructive methods such as electrocoagulation or cryotherapy. These drawbacks are scar, hyperpigmentation or hypopigmentation. Although the exact mechanism of imiquimod awaits full elucidation, it has ability to induce various cytokines like interferon (IFN)-α, IFN-γ, tumor necrosis factor-α and interleukin-1, 6, 8 and 12 from monocytes, macrophages, dendritic cells and keratinocytes[6]. It also upregulates the transcription factor NF-Kb[6].

There have been previous reports of imiquimod showing its efficacy for treating some benign epidermal lesions such as linear porokeratosis and scrotal acanthoma[7,8]. Those authors proposed that the cytokines induced by imiquimod might be involved in the regression of these conditions. For our cases, imiquimod was an attractive alternative as it was self-administered topically and it had minimal side effects. Furthermore, because a scar on the glabella or left nasal ala could be a serious problem, we tried 5% imiquimod cream. Yet the lesions recurred soon after they had been successfully flattened. In my opinion, because of the benign cellular nature of desmoplastic trichoepithelioma, enough apoptosis might not have happened in spite of imiquimod treatment. Nevertheless, there was a positive aspect of imiquimod's action on the desmoplastic trichoepithelioma in our cases. That is to say, when combined with-facial dermatological surgery, imiquimod could lessen the size of mass or clear the tumor mass and especially in cosmetically important areas, so that minimal scar-oriented surgery may be possible.

Imiquimod application three times a week for 8 weeks induced complete remission of infiltrative trichilemmal carcinoma[9]. Imiquimod may have a limited effect on benign adnexal neoplasm. Yet there have been no reports of applying imiquimod to other benign adnexal neoplasm, so further research on this is needed.

To the best of our knowledge, this is the only report on utilizing imiquimod to treat benign adnexal tumor and especially desmoplastic trichoepithelioma. This report suggests that imiquimod may be an adjunctive treatment, when combined with surgery, for treating a benign adnexal tumor.

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