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Avoiding Litigations

“Cosmetic procedures are ‘need felt.’ It is the innate desire to ‘look good’ that drives the patient to seek such aesthetic procedures. However, the treating dermatologist should not be over enthusiastic, and need not succumb to the needs of an insisting and highly demanding patient. It is always preferable to play safe rather than being too accommodative. For every procedure, its alternatives and outcomes have to be discussed in detail beforehand with the patient.

There is an ever growing list of dissatisfied clients and obliging lawyers targeting the doctors. Keeping in mind that the patient’s safety is always of utmost importance, the doctor’s interest should also be simultaneously safeguarded, as their intention is not to harm the patient. The dermatologists, who have newly ventured into the cosmetic procedures, should be extremely careful and smart in handling the legal issues arising out of such situations. Although misdiagnosis of cancer is the commonest litigation, the present day dermatologists are performing increasing numbers of cosmetic procedures and surgeries, which have the inherent risk of malpractice litigations.

Be sure... Be safe!

- Dom Daniel
Editor

The Last Frontier Of Vitiligo Repigmentation



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Abstract

Vitiligo is an acquired condition, characterized by progressive loss of melanocytes from the epidermis and the epidermal appendages, resulting in skin areas without pigmentation. Because of the clinical appearance of the patients, the condition is often associated to psychological distress and reduction of their life quality index. To date, the available medical and surgical treatments are not always satisfactory. Among these phototherapy is one of the most appreciated therapeutic options. The last four decades have seen significant technological advances in the field of phototherapy, which evolved from PUVA, to the introduction of nb-UVB, and, more recently, to the target micro-phototherapy. Micro-phototherapy delivers light of specific wavelength, focused only to affected skin, sparing the uninvolved areas. This leads to a more selected and safe action of the device, than conventional phototherapy. The authors report their experience in treating a woman affected by facial vitiligo with BIOSKIN EVOLUTION® micro-phototherapy.

Key-words: Vitiligo, micro-phototherapy, repigmentation, safeness.

Introduction

Vitiligo is an acquired, often familial, chronic skin pigmentary disorder. It is

characterized by depigmented areas varying in number, form and localization, which stem from melanocytes loss or dysfunction.

Vitiligo is a relatively common disease, with an estimated prevalence of 0.5-1% in most populations¹. It affects people

of all backgrounds and both genders. Half of vitiligo patients have an onset before the age of 20 years.

The precise etiology and pathobiology of the disease is still unclear². Multiple theories have been proposed, including genetic, neuronal, autoimmune and biochemical mechanisms. Moreover, recent data support that vitiligo is a T-cell mediated autoimmune disease, maybe triggered by oxidative stress^{3,4}.

Clinically, vitiligo is characterized by white macules and patches, affecting skin, mucous membranes and hair. People affected by vitiligo have a high degree of psychological distress and a remarkable reduction of quality of life, mainly caused by the color contrast between the healthy pigmented skin and the vitiliginous pathes (leopard-like skin appearance)⁵.

Vitiligo treatments have two main goals: the first one is to stop the depigmentation, the second one is to induce repigmentation. Unfortunately, treatments are not yet well codified and usually don't provide satisfying results. In the last years, several therapeutic options⁶⁻⁸, both medical and surgical, have been proposed for vitiligo (table1). Surgical therapies are recommended in patients, who have a stable vitiligo (at least one year), not-responding to medical treatments. Among these, corticosteroids and phototherapies are the mainstay of medical treatment of vitiligo.

MEDICAL THERAPIES	SURGICAL THERAPY
Topical and/or systemic corticosteroids	Tissue grafting technique: suction blister grafting, split thickness grafting
Phototherapy: oral PUVA, topical PUVA, sol PUVA, nb-UVB, microphototherapy	Miniature punch grafting
Eximer laser	Follicular unit grafting
Topical immunomodulators: tacrolimus, pimecrolimus	Smash grafting
Topical Vitamin D analogues (calcipotriol)	Cellular grafting techniques: non-cultured epidermal suspensions, melanocyte culture transplantation
Pseudocatalase	
Topical 5-Fluorouracil	
Topical prostaglandin (PGE2) analog	
Topical cucumis melo extracts	
Depigmentation therapy	

Table 1: Therapeutic Options For Vitiligo

Steroids act as anti-inflammatory agents and as immunosuppressant. They could be used in a topical or in a systemic way. Topical steroids are recommended for the treatment of limited areas of vitiligo, especially for facial and/or limited lesions of the body. They are quite safe if used for few weeks, and, under this condition, they could be used also in children. The clinical efficacy of corticosteroids (e.g. bethamethasone dipropionate 0.05% cream, 0.05% clobetasol propionate ointment) has been known for many years for the treatment of vitiligo. Unfortunately, the treatment should be limited to 2-4 months to avoid percutaneous adsorption and local side effects such as atrophy, striae, telangiectasia, hypertrichosis and, more rarely, acneiform eruption. In patients affected by vitiligo with rapid course, another therapeutic option is the systemic administration of corticosteroids, which seem to be useful to stop the progression of the disease and to induce repigmentation.

Ultraviolet radiations (UVR), both in the range of UVB and UVA, are considered as a first line therapy especially for extensive vitiligo, because of their good efficacy and tolerance. The effects of UVR are both immunosuppression to halt melanocyte destruction, and stimulation of the melanocytes activity.

Historically, the first phototherapeutic device, which has been introduced in the vitiligo treatment, was UVA light used alone (broadband UVA) or, more commonly, in association with psoralen (PUVA therapy).

PUVA therapy consists of the oral intake of a photosensitizing psoralen (e.g. 8-methoxypsoralen, 5-methoxypsoralen or 4,5',8-trimethylpsoralen) followed by exposure to photoactivating UVA light (320-400 nm). Treatment is done 2-3 times a week, increasing the dose of UVA on the base of patient's response. Because of psoralen's toxicity (e.g. gastric and ocular damage), PUVA therapy could be performed only in adult, with some contraindications. The rate of repigmentation after oral PUVA is different in different studies. The treatment is not always safe and the side effects are due to both radiations and psoralens. The most common short-time side effects are erythema, pruritus, xerosis and phototoxic reactions. Long-term side effects include chronic actinic damage and carcinogenesis.

Topical PUVA consists in the application of 0.1-0.01% 8-methoxypsoralen in hydrophilic petrolatum or ethanol onto the vitiligo skin, followed by exposure to UVA irradiated with a dose of 0.12-0.25 J/cm². The treatment is performed 1-3 times a week, increasing the UVA dose until mild erythema develops. The treatment provides quite good results. The acute and chronic side effects, due to UV radiations, are well described.

Successively, narrow-band UVB (311 nm) has become an important therapy for vitiligo, often preferred to PUVA. It consist in the exposure to nb-UVB at the starting dose of 0.1 mJ/cm², followed by 20% increasing dose of UVR on a weekly basis, according to response. Treatment is generally well-tolerated, and it could be performed in children and pregnant females. Recent studies show how nb-UVB is more active than topical and oral PUVA, and that the repigmentation achieved with nb-UVB is more persistent and more similar to the color of the uninvolved skin⁹.

Since oral psoralens are not used, ocular or gastrointestinal side effects are not described with nb-UVB treatment. The commonest acute side effects are pruritus and erythema. Apart for a supposed photo-damaging, long term side effects are yet to be determined. Keratoacanthoma after nb-UVB has been reported as a rare side effect.

C O N V E N T I O N A L P H O T O T H E R A P Y	M I C R O P H O T O T H E R A P Y
Exposure of skin lesions and uninvolved areas	Treatment limited on skin lesions, sparing of uninvolved areas
Difficulty in treating certain areas (e.g. ear, nose)	The maneuverable hand piece allows treatment of difficult areas
Slow delivery system, which needs longer treatment sessions	Quick delivery system. Uninvolved areas aren't treat, operators can also use higher doses of energy, achieving faster response on selected areas
Multiple and frequent visits to clinic	Less frequent visits and more compliance of patients
Bulky machines which need large office space	Smaller device
Difficulty in treating claustrophobic patients and children, who are often afraid by the large device	Easy administration of the energy delivery and well tolerate-therapy



Fig.1: BIOSKIN EVOLUTION® device.

Table 2: Main Differences Between Conventional Phototherapy And Micro-Phototherapy.

The most recent innovation in vitiligo management is microphototherapy^{10,11}, which consists in the treatment limited to the affected vitiliginous areas, avoiding exposure to uninvolved skin (table 2). Target phototherapy acts with the same modalities of classical phototherapy, but in a more precise way because, treating only skin lesions, the operator can use more appropriate dose of energy. This leads to shorten duration and less frequent treatment sessions, with an increasing of patient's compliance. Narrowband UVB micro-phototherapy is particularly indicated for the treatment of localized vitiligo, where it may provide good clinical results in term of restoring pigmentation, patients' compliance, and safety.

We report a clinical case of a patient affected by localized vitiligo, treated with BIOSKIN EVOLUTION®, a cold-light generator micro-phototherapy with emission peak at 311 nm.

Case report

A 62 years old, caucasian man was referred to us for vitiligo. He had developed the disease since he was 28. At first, he developed only two lesions, localized on the right and on the left side of his mouth. They were treated with monthly cycles of topical corticosteroids, achieving a partial re-pigmentation. After that, the patient started a new therapy with supplements and sun esposition, with poor results. Thereafter, he stopped treatments and dermatological visits. Thus, he developed new lesions involving progressively his face. Finally, he entered our Clinic.

During the clinical examination, the man, a Fitzpatrick's II skin phototype, showed irregular vitiliginous pathes, localized on the right and left side of his mouth, chin and upper part of the neck. Lesions were asymptomatic. No other vitiliginous lesions or systemic symptoms had been observed. The man didn't show any alterations of hair or nails. He didn't show any other disease, except for a mild arterial hypertension. He showed no familiarity for vitiligo or other skin diseases. History for drug assumption was negative, and he didn't report any contact with local irritants or depigmenting agents.

We asked for selected laboratory data (blood count, blood glucose level, thyroid function, parathormone, serum calcium, homocysteine, immunoglobulin E, Vitamin D, antinuclear antibodies levels) to evaluate the presence of any comorbidities. All parameters resulted normal.

We decide to treat the patient with micro-phototherapy. Before starting the therapeutic protocol, the patient provided a written informed consent after proper counseling.

Material and methods

The patient has been irradiated with the BIOSKIN EVOLUTION® device, a cold light generator micro-focused phototherapy. The device consists of a short arc lamp generating a beam of visible ultraviolet radiations, filtered in order to obtain only nb-UVB (fig.1). BIOSKIN EVOLUTION® can provide a spectrum of intensity

up to 400 mW/cm² with an emission spectrum ranging from 300 to 320 nm and a peak emission at 311 nm. This specific wavelength has seen to be the most effective to stimulate the "silent" melanocytes, obtaining lesional re-pigmentation, without increase in the color contrast between affected and not affected skin. Moreover, time of emission and spot diameters are regulated by the operator, on the base of the clinical characteristic of the singular patient.

In our case, we irradiated the patient once every three weeks with an average dose of 50 mW/cm². The starting dose of irradiation was 20% less than the minimal erythema dose (MED) evaluated on a vitiliginous area of the patient, during a session-test which was performed 3 days before the treatment. In the following sessions, we progressively increased the dose by 20% until the development of erythema was noted. When we noted it, the dose of the following treatment was diminished by 20% in the erythematous area.

Digital lesional photographs in a standard pose, both with normal ambient light and with Wood's lamp, have been obtained before the start and at each session, for all the treatment period. Response to the treatment was determined by assigning to each lesion a 0% score before therapy and a second percentage value at the end of the same, to represent the level of repigmentation.

Results

The patient has been treated, every three weeks, with BIOSKIN EVOLUTION® micro-phototherapy in 12 sessions. At the end of the treatment we obtained a



Fig.2:



Fig.3:

Fig.2-3: Our patient before and after 12 sessions of micro-phototherapy with Bioskin® evolution. A) Vitiligo is evident on the face as white patches before the treatment. B) Vitiligo patches appear repigmented after 12 sessions of UVBnb focused micro-phototherapy.

nearly complete re-pigmentation of the vitiliginous areas (fig.2-3). The treatment has been well-tolerated and we didn't observe any side effects. Patient was satisfied, not only for the excellent result achieved by the therapy, but also for the absence of contraindications, side effects and because other local and systemic treatments were not requested.

Conclusions

Vitiligo is an acquired skin disorder of unknown etiology, characterized by the progressive loss of epidermal melanocytes, which results in the development of white macules. Because of the aspect of skin lesions, the disease is a psychological burden. There is as yet no standard univers agree treatment for vitiligo. Recent data suggest that nb-UVB micro-phototherapy could be considered as first-choice therapy for patients affected by localized vitiligo¹². In our case we have treated the patient affected by facial vitiligo with BIOSKIN EVOLUTION®, an innovative generator micro-phototherapy device, which emits UVB rays at 311 nm. Those rays are the most effective in the vitiligo treatment, because they can stimulate

in an optimal way melanocyte cells and are active on the modulation of the immune skin system. The treatment is limited to the vitiliginous pathes, with sparing of uninvolved skin areas. The therapeutic protocol (energy level, spot light, no. of session, duration) can be decided by the operator on the basis of patients' characteristics. The therapy is repeated once every three weeks, with the possibility to effect 2 sessions in the same day. In our case, we treated the patient every 21 days, for a total of 12 sessions.

In conclusion, BIOSKIN EVOLUTION® seems to be highly safe and effective in the treatment of vitiligo, also in cases of lesions which could be difficult to treat with other photo-therapies.

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