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A Case Report On Steroid-Induced Skin Changes In A Case Of Hypertrophic Lichen Planus

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ABSTRACT
A chronic inflammatory skin disorder known as hypertrophic lichen planus (HLP) is characterized by thicker, scaly plaques that frequently itch extremely. A 17-year-old male patient came with the chief complaints of light-colored skin surrounding a raised and pigmented skin lesion which appeared following injection given for treatment. On Examination patient had multiple hyperpigmented violaceous Plaques noted over the midline aspect of the lower 1/3rd of the right & left leg and foot. Surrounding skin shows distinct hypopigmentation one or more hyperpigmented plaques shows adherent scales on its surface. Past history usage of Triamcinolone Acetonide Injection 40 mg/ml was there 3 months back. From the clinical examination, the patient was diagnosed with Hypertrophic Lichen Planus with steroid-induced skin changes. Treatment was directed towards steroid-induced side effects with topical calcineurin inhibitors like Tacrolimus and topical Vitamin D3 analogues like calcipotriol. The above stated side effects should be borne in mind being prompt in diagnosing the condition but also the iatrogenic complications related to the given treatment. These complications should be clearly explained to the patient explaining why injection is being given weighing benefit vs risk and also giving proper treatment priorities when handling side effects too.

KEYWORDS: Hypertrophic Lichen Planus, Tacrolimus, Calcipotriol, Triamcinolone Acetonide

INTRODUCTION

A chronic inflammatory skin disorder known as hypertrophic lichen planus (HLP) is characterized by thicker, scaly plaques that frequently itch extremely. It is a variant of lichen planus, a more widespread skin disease. **Lichen planus hypertrophicus: Principal Features - APPEARANCE:** Usually found on the shins and ankles, HLP appears as thick, warty, hyperpigmented plaques. It's possible to confuse these lesions for eczema or psoriasis. **Symptoms:** The plaques are frequently extremely irritating, which can cause people to scratch and cause their skin to thicken even more (lichenification). **Causes**: Although the precise etiology of HLP is unknown, it is believed to be an autoimmune disease in which the cells of the skin trigger an abnormal immune response. Infections, drugs, and stress can all be responsible for this trigger. **Diagnosis:** The diagnosis is usually established on the basis of clinical appearance and is validated by taking skin biopsy that reveals the distinctive histological characteristics of lichen planus. **Treatment:** Topical corticosteroids are frequently used to reduce inflammation, antihistamines are used to control itching, and in certain situations, we resort to giving intralesional corticosteroids as a treatment modality. Here I report a case of Hypertrophic Lichen Planus treated with Intralesional corticosteroid presenting with skin changes

CASE REPORT

A 17-year-old male patient came with the chief complaints of light coloued skin surrounding a raised and pigmented skin lesion which appeared following injection given for treatment. On Examination patient had multiple hyperpigmented violaceous Plaques noted over the midline aspect of the lower 1/3rd of the right & left leg and foot. Surrounding skin shows distinct hypopigmentation one or more hyperpigmented plaques shows adherent scales on its surface. Past history usage of Triamcinolone Acetonide Injection 40 mg/ml was there 3 months back. From the clinical examination, the patient was diagnosed with Hypertrophic Lichen Planus with steroid-induced skin changes. Treatment was directed towards steroid-induced side effects with topical calcineurin inhibitors like Tacrolimus and topical Vitamin D3 analogues like calcipotriol.

HYPERTROPIC LICHEN PLANUS OVER THE LEFT LEG AND FOOT

HYPERTROPIC LICHEN PLANUS OVER BOTH LEFT AND RIGHT LEG AND FOOT

HYPERTROPIC LICHEN PLANUS AFFECTED

DISCUSSION:

USE OF TACROLIMUS FOR THE ABOVE HYPERTROPHIC LICHEN PLANUS PATIENT

Immunosuppressive medication tacrolimus is used to treat hypertrophic lichen planus, especially in patients with severe or resistant forms. It functions by reducing the immunological response that causes the skin to become thicker and more inflammatory as shown in hypertrophic lichen planus. Usually administered topically as an ointment, tacrolimus can lessen symptoms like redness, itching, and thicker skin lesions. When other therapies, such as topical corticosteroids, are not working well or have serious adverse effects, this medication is frequently utilized. It is also effective in treating hypopigmentation secondary to the effects of topical or intralesional corticosteroids.

MECHANISM OF HOW TACROLIMUS IS USED IN TREATING HYPOPIGMENTATION

Immunomodulation: Tacrolimus lowers the inflammatory response and prevents T-cell activation. It attaches itself to the protein FKBP-12, forming a complex that suppresses calcineurin, a phosphatase essential for T-cell activation. Tacrolimus accomplishes this by decreasing the activity of T-cells that in diseases like vitiligo might be targeting melanocytes, the cells that give skin its pigmentation.

Reduction of Inflammation: Tacrolimus reduces inflammation in the skin's afflicted areas by regulating the immune response. By doing so, you may be able to stop additional melanocyte deterioration and improve the conditions for their repigmentation.

Stimulation of Melanocyte Activity: There is evidence that tacrolimus may indirectly aid in skin repigmentation by making the environment less unfavorable for melanocytes, which may aid in their recovery and function. However, this is not entirely understood.
Tacrolimus, in general, reduces inflammation and targets the immune system's involvement in the loss of pigment cells, which aids in the management of hypopigmentation.

USE OF CALCIPOTRIOL FOR THE ABOVE HYPERTROPHIC LICHEN PLANUS PATIENT
The main purpose of calcitriol, a synthetic vitamin D derivative, is to treat psoriasis. On the other hand, hypertrophic lichen planus and other dermatological disorders have also been treated with it off-label. Calcipotriol is utilized in the setting of hypertrophic lichen planus because it has the capacity to regulate the immune response and encourage the restoration of normal keratinocyte proliferation.

- Anti-proliferative Effects: One of the main characteristics of hypertrophic lichen planus is the hyper proliferation of keratinocytes, which calcipotriol helps to correct.
- Anti-inflammatory Properties: T-cell activity, which is important in the pathophysiology of lichen planus, is influenced by immunomodulatory effects that can reduce inflammation.
- Combination Therapy: To improve therapeutic results, calcitriol is frequently used in conjunction with topical corticosteroids.
- It is demonstrated to treat hypopigmentation

MECHANISM OF HOW CALCITRIOL IS USED IN TREATING HYPOPIGMENTATION
Modulation of Keratinocyte Proliferation: The main cell type in the epidermis, keratinocytes, are subject to proliferation and differentiation regulation by calcitriol. It contributes to the restoration of the normal skin architecture, which can aid in the repigmentation process, by normalizing the proliferation and maturation of these cells.

Immune System Modulation: The effects of captopril include immunomodulation. It has the ability to lower cytokines and T-cell activity that are implicated in inflammatory reactions. Melanocytes, the cells that produce pigment, could be harmed by inflammation, which could lead to hypopigmentation. However, by reducing the immune response, it helps reduce inflammation.

Promotion of Melanocyte Function: Calcipotriol may influence melanocytes directly or indirectly, possibly improving their survival or ability to function in the afflicted areas, while the exact process is yet unclear.
In conclusion, calcipotriol reduces inflammation, restores normal skin cell proliferation, and may even increase melanocyte activity in the treatment of hypopigmentation.

ABOUT TRIAMCINOLONE ACETONIDE
Triamcinolone acetonide, a corticosteroid, is typically used to treat inflammatory skin conditions, including lichen planus, rather than causing them. Inadvertent injection of Triamcinolone acetonide causes skin atrophy, hypopigmentation, striae, telangiectasia & increased risk of acquiring cutaneous bacterial, viral & fungal infections by mechanisms stated below

MECHANISM OF TRIAMCINOLONE ACETONIDE
Triamcinolone acetonide's primary method of treating hypopigmentation is based on its capacity to lower inflammation and inhibit immunological responses that aid in the degeneration of melanocytes. In situations when inflammatory or autoimmune mechanisms are the cause of hypopigmentation, it can help stabilize or improve pigmentation by regulating these processes.

CONCLUSION
The above-stated side effects should be borne in mind being prompt in diagnosing the condition but also the iatrogenic complications related to the given treatment. These complications should be clearly explained to the patient explaining why injection is being given weighing benefit vs risk and also giving proper treatment priorities when handling side effects too.

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