

Colocalization of Lichen Planus and Vitiligo: Challenging the Universality of Current Theories

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Abstract

Vitiligo and Lichen Planus, two common dermatologic disorders, are expected to coexist. This leads to diverse theories regarding their immunopathogenesis linkage. In this case, we report a twenty-year-old man suffering from simultaneous lichen planus and vitiligo which were both generalized at the time of observation and also concomitant throughout their entire course of progression. Lichen Planus papules were located on sun-exposed areas and non sun-exposed areas; both on vitiliginous areas and non-vitiliginous areas diminishing current theories about the association of the two diseases. Since we did not have the patient's consent to perform a series of biopsies, we were unable to evaluate dermatopathology of the two diseases at different sites in regard to sun exposure. Further extensive researches on larger scales seem warranted to propose any kind of theory regarding their inter-connection. (*Iran J Dermatol* 2009;12 (Suppl): S16-S18)

Keywords: lichen planus; vitiligo; colocalization; concomitant

Introduction

There are many reports regarding the coexistence of lichen planus and vitiligo;¹ thus raising the issue of whether or not there is an association or it is just a coincidence². Nevertheless, such reports depict pre-existing vitiligo with some pruritic papules superimposed afterwards^{1,3,4,5,6,7, 8} leading to current theories about their interactive pathogenesis¹. In our report, the two diseases were concomitant throughout their entire course of progression regardless of sun exposure or the distribution of other diseases. This either puts into doubt the common pathogenesis speculations or reveals an extremely rare simultaneous coexistence and colocalization.

Case Report

We report a twenty-year-old Caucasian man with insidious symptoms from ten months ago such as severe pruritus. Two months later, purple polygonal papules erupted on his flanks, trunk and the nape of his neck. The disease progressed for the next six months involving the flexor sides of elbows, groins and the dorsum of popliteal region. (Figure 1) The lichen planus he was diagnosed with, also based on biopsy, was the classic type with no hypertrophy, linear or bullous lesions. Oral mucosa, genitalia,

hair follicles and nails were all spared. There was no history of Koebner phenomenon. Neither secondary impetiginisation nor scaling was detected. Interestingly, fair enough to say exactly in the same chronological order, depigmentous white patches appeared on his body. The flexor sides of both elbows and the fingers of hands, his neck and his back were the dominant sites. (Figure2) They were diagnosed as vitiligo which was further confirmed by biopsy.

Our patient was a single man serving in military who also demonstrated anxiety traits based on the Hamilton Anxiety Scaling Score. During the last five years, he had worked in a dye factory for nine months and in a gypsum factory for four months. He was a social drinker but could not specify his exact amount of alcohol consumption. He was a cigarette smoker of about three pack years with no history of any other kinds of addiction. The average daily time he was exposed to sun radiation was about 90 minutes in the recent two-year period. In his past medical history, he was diagnosed with allergic rhino-sinusitis for years. The drug history included Adult Cold tablets (Acetaminophen and Pseudo ephedrine), plus 200 mg hydroxychloroquine sulfate tablets which were sufficiently potent in preventing new onset lichenoid lesions. No medications were ever prescribed for his Vitiligo.



Figure 1. Lichen planus mainly on the inner surface of the elbows; vitiligo over the chest



Figure 2. Lichen planus and vitiligo all over the back region

Routine laboratory tests were all within normal range. In addition, our patient was seronegative for hepatitis B and C viruses plus human Immunodeficiency virus (HIV).

Discussion

Lichen planus, with an incidence rate of 1% in the general population, and vitiligo, with an incidence of up to 5%, are reported to co-exist; however, their colocalization is extremely rare in the literature.¹ To the best of our knowledge, there are only seven reports in this regard:

(1) A 59-year-old man with vitiligo of the trunk and limbs for thirty years who developed LP on both vitiliginous and non vitiliginous skin after twenty nine years (one year prior to the study). The recurrence was confined to the vitiliginous areas only³.

(2) A 13-year-old boy suffering from vitiligo who was diagnosed with LP later regardless of how vitiligo was distributed⁴.

(3) LP on the borders of vitiliginous sites:⁵ We have incomplete data regarding the distribution pattern but since the patient was treated with trisoralen followed by sun exposure, it could be presumed that sun-exposed areas were mainly involved¹.

(4) A 14-year-old boy with segmental vitiligo of the leg and thigh for years with superimposition of lichen planus on the vitiliginous sites afterwards⁶.

(5) A 45-year-old man with generalized vitiligo for seven years who, contrary to the actinic damage theory, developed LP on the scrotum¹.

(6) A 28-year-old man with the diagnosis of vitiligo universalis for 6 years who developed LP papules on the dorsum of the hands locally⁷.

(7) A 53-year-old man whose trunk, extremities, lips and perioral area were vitiliginized for 15 years developed lichen planus papules on the lower lip five years after⁸.

Today, there is a growing body of evidence that LP represents a T-cell-mediated autoimmune damage to basal keratinocytes that express altered self antigens on their surface⁹. However, in regard to the periodic colocalization of lichen planus and vitiligo, diverse theories have been proposed; for example, one theory argues that suppressor T cells of LP become uninhibited by the change in antigen expression caused by vitiligo. Other theories are the photo damage theory within sun-exposed areas and finally mere coincidence¹.

We noticed that all the above-mentioned cases had vitiligo as the precursor disease. This leads to either the theory of T cell suppression induced by vitiligo or the photo damage theory. In contrast, our patient revealed concomitant onset and progression of the two diseases both on sun-exposed areas and other parts of the body fading out both theories especially the actinic one. Our case might be an extremely rare coincidence of generalized lichen planus and vitiligo chronologically behaving in the same manner. Nevertheless, another speculation could be that some basic defects in the immunological status of our patient were triggered, either internally or externally, by the special chemicals that our patient was exposed to¹⁰. As a conclusion, we presume that neither of the two current theories can sufficiently describe the association between lichen planus and vitiligo in our

patient due to the specific distribution and chronology of the lesions. This necessitates the need for much more extensive researches on their association if there is one. Finally, we provide the list of the chemicals our patient was exposed to hoping that it might be useful in future clinical studies (Table 1).

Table 1. Duration of each chemical exposure in our patient for the recent five year period.

Pigment dye: Urea, Ethoxylate Alcohol
9 MONTHS
Reactive dye: Sodium Sulfonate, Pseudoash (light sodium carbonate)
9 MONTHS
Polyester dye: Acetic Acid, Dysters
9 MONTHS
Vap dye: H ₂ S, NaOH, H ₂ O ₂
9 MONTHS
Stabilizer: Alkil Phosphonate
9 MONTHS
Gypsum: CaSo ₄ (H ₂ O)
4 MONTHS

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