

## Coexistence of Palmoplantar Psoriasis, Acral Vitiligo and Autoimmune Hypothyroidism

Seher Arı, MD, İlknur Kıvanç Altunay,\* MD

Address: Departments of Dermatology, Bingöl State Hospital, Bingöl, 12000, Turkey and Şişli Etfal Training and Research Hospital, Istanbul, 34377, Turkey

E-mail: dr\_seherari@yahoo.com

\* Corresponding Author: Dr. İlknur Kıvanç Altunay, Department of Dermatology, Şişli Etfal Training and Research Hospital, Istanbul, 34377, Turkey

Published:

J Turk Acad Dermatol 2013; 7 (1): 1371c4.

This article is available from: <http://www.jtad.org/2013/1/jtad1371c4.pdf>

**Key Words:** psoriasis, vitiligo, hypothyroidism.

### Abstract

**Observations:** Vitiligo and psoriasis are both common dermatoses. There have been several reports of the concurrence of these diseases associated with other autoimmune states. Herein, we report a 66-year-old female patient presented with acrofacial vitiligo, palmoplantar psoriasis and autoimmune hypothyroidism.

### Introduction

Psoriasis and vitiligo are two different cutaneous diseases with unknown etiology. However, autoimmunity, environmental and genetic causes are blamed in etiopathogenesis of both diseases [1, 2]. A literature search about the concurrence of these diseases has demonstrated that psoriasis may occur with vitiligo coincidentally or based on a common pathogenic relationship and it may be strictly confined to the vitiligo-affected skin or it may occur independently of vitiligo. Furthermore, several autoimmune disorders such as thyroid disease, alopecia areata, bullous pemphigoid, lichen planus have been reported to occur more often in patients with both diseases [3, 4, 5].

### Case Report

A 66-year-old female was referred to our clinic with 12-year history of erythematous squamous plaques that were localized to palmoplantar areas (Figure 1a). She also had 25-year history of small vitiligo patches on dorsum of her hands, feet and chin (Figure 1b). She had been recently diagnosed with autoimmune hypothyroidism and had been treated



**Figure 1. a)** Erythematous squamous plaques that were localized to palmoplantar areas; **b)** Vitiligo patches on dorsum of her hands, erythematous squamous lesions on the knuckles (pigmented areas).

ted with thyroxine for four months. Her family history was unremarkable. Physical examination revealed erythematous patches and plaques on her hands and hyperkeratotic plaques on her plantar surfaces. Additionally, she had several vitiliginous patches symmetrically distributed on dorsum of her hands, feet and chin. A *Wood's* lamp test was positive on the hypopigmented lesions. All laboratory examinations including liver and kidney tests, electrolytes, erythrocyte sedimentation rate and hemogram were within normal limits except decreased TSH. Skin biopsy from one of the erythematous plaques showed epidermal regular acanthosis with hyperkeratosis, parakeratosis and infiltrations of neutrophils into the stratum corneum and subcorneal zone, compatible with psoriasis. Vitiligo was confirmed by *Masson-Fontana* stain in the second biopsy from the hypopigmented lesion. Acitretin therapy was initiated for psoriasis. No therapy was given for vitiligo.

## Discussion

The pathogenic mechanism underlying the coexistence of vitiligo and psoriasis is still unknown. Some authors consider this coexistence to be a simple coincidence, but others have suggested several theories as a common pathogenic relationship between vitiligo and psoriasis. There have been previously several reports indicating this association in different ways. Strict anatomical coexistence of psoriasis inside the vitiliginous patches has rarely been reported [1, 6, 7, 8]. These articles attempted to explain a common etiopathogenetic relationship: autoimmunity, Koebner phenomenon, cytokines or decreased melanocytes and melanin as predisposing factors for each disease [1, 7, 9]. More recently, *Prignano* et al. suggested that both diseases may be immune-mediated with a genetic link [10]. However, *Zhu* et al. found that psoriasis and vitiligo share a common genetic locus in the MHC [8].

The association with other autoimmune diseases was also reported [9]. Coexistence with autoimmune polyglandular syndrome (APS) is quite rare. There is only one case report in which strict co-localization of psoriatic lesions in vitiliginous plaques is associated with APS consisting of autoimmune hypothyroidism and pernicious anemia has been assessed [11]. In this report, Koebnerization has been implicated as a pathogenetic link between two diseases and cytokines in vitiliginous areas

have been blamed [11]. However, the incidence of an associated autoimmune disease remains controversial [9].

In our case, psoriatic lesions were confined to pigmented areas and vitiliginous plaques were intact despite the acral predilection of both vitiligo and psoriasis. The onset and course of each disease including hypothyroidism were chronologically independent from each other. Some studies showed an elevated tissue level of epidermal cytokines (IFN- $\gamma$ , TNF- $\alpha$ ) in lesional and perilesional skin of patients with vitiligo and psoriasis [1, 12]. The interreactions between T lymphocytes, keratinocytes, melanocytes and cytokines are thought to play a role in the pathogenesis of psoriasis and vitiligo [1]. Referring to this, the acral predilection of both vitiligo and psoriasis in our patient can be explained that increasing level of cytokines in the perilesional vitiligo-affected skin may have triggered the development of psoriatic lesions in genetically susceptible patient. We believe that the concurrence of vitiligo and psoriasis with autoimmune hypothyroiditis is not a coincidence, but further studies are necessary for clarification of the underlying pathogenesis.

## References

1. Papadavid E, Yu RC, Munn S, Chu AC. Strict anatomical coexistence of vitiligo and psoriasis vulgaris- a Koebner phenomenon? *Clin Exp Dermatol* 1996; 21: 138-140. PMID: 8759203
2. Zhu KJ, Lv YM, Yin XY, Wang ZX, Sun LD, He SM, Cheng H, Hu DY, Zhang Z, Li Y, Zuo XB, Zhou YW, Yang S, Fan X, Zhang XJ, Zhang FY. Psoriasis regression analysis of MHC loci identifies shared genetic variants with vitiligo. *PLoS One* 2011; 6: e23089. PMID: 22125590
3. Tirado-Sánchez A, Montes-de-Oca G. Coexistence of bullous pemphigoid, vitiligo, and thyroid disease: a multiple autoimmune syndrome? *Dermatol Online J* 2005; 11: 20. PMID: 16150228
4. Ujiie H, Sawamura D, Shimizu H. Development of lichen planus and psoriasis on lesions of vitiligo vulgaris. *Clin Exp Dermatol* 2006; 31: 375-377. PMID: 16681580
5. Tsai TF, Wang TS, Hung ST, Tsai PI, Schenkel B, Zhang M, Tang CH. Epidemiology and comorbidities of psoriasis patients in a national database in Taiwan. *J Dermatol Sci* 2011; 63: 40-46. PMID: 21543188
6. Inamadar AC, Sampagavi VV, Athanikar SB, Patil MN, Deshmukh NS. Vitiligo and psoriasis: coexistence with colocalization. *Indian J Dermatol Venereol Leprol* 2001; 67: 214-215. PMID:17664750

7. De Sica AB, Wakelin S. Psoriasis vulgaris confined to vitiligo patches and occurring contemporaneously in the same patient. *Clin Exp Dermatol* 2004; 29: 434. PMID:15245555
8. Berger TG, Kiesewetter F, Maczek C, Bauer N, Lueftl M, Schuler G, Simon M Jr. Psoriasis confined strictly to vitiligo areas--a Koebner-like phenomenon? *J Eur Acad Dermatol Venereol* 2006; 20: 178-183. PMID: 16441627
9. Sandhu K, Kaur I, Kumar B. Psoriasis and vitiligo. *J Am Acad Dermatol* 2004; 51: 149-150. PMID: 15243545
10. Prignano F, Pescitelli L, Ricceri F, Lotti T. The importance of genetical link in immuno-mediated dermatoses: psoriasis and vitiligo. *Int J Dermatol* 2008; 47: 1060-1062. PMID: 18986357
11. Rodriguez-Martin M, Saez-Rodriguez M, Carnenero-Rodriguez A, Cabrera de Paz R, Sidro-Sartoz M, Perez-Robayna N, Sanchez R, Garcia-Bustinday M, Martin-Herrera A, Noda-Cabrera A. Coincidental presentation of vitiligo and psoriasis in a patient with polyglandular autoimmune syndrome. *Clin Exp Dermatol* 2007; 32: 453-454. PMID: 17425645
12. Uyemura K, Yamamura M, Fivenson DF, Modlin RL, Nickoloff BJ. The cytokine network in lesional and lesion-free psoriatic skin is characterized by a T-helper type 1 cell-mediated response. *J Invest Dermatol* 1993; 101: 701-705. PMID: 7693825