CASE REPORT

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Itchy Papules Bordering Vitiligo Patches in a Child

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ABSTRACT

Vitiligo co-exists with several dermatological conditions, but co-localization has been rarely reported. We are reporting a case of a five-year-old male child who developed an itchy, violaceous border on the photo-exposed and trauma prone unstable vitiligo patches. Dermoscopy and histopathological examination was consistent with the diagnosis of lichen planus. The presentation does not seem co-incidental to us. It opens a window into genetic and immunological research to clearly establish a connection between the two dermatoses.

Keywords: Vitiligo, Lichen planus, Pathogenesis

Introduction

The association of vitiligo with other skin conditions in the context of shared autoimmune background has been well established. Lichen planus is an entity which has been rarely documented to co-exist and co-localize with vitiligo. Both conditions being common, some call it co-incidental [1] while some have proposed an immunopathological linkage [2]. Lichen planus can occur on both vitiliginous and uninvolved skin. Our case stands out because unstable vitiligo is bordered and limited by lichen planus in a very young five-year-old male child.

Case Report

A five-year-old male child presented with complaint of asymptomatic white patches on the wrist, legs, back and periorbital region for last 1 year. There was history of development of new patch on the lower extremity following trauma one month back. Family history was unremarkable. Local cutaneous examination revealed presence of multiple, depigmented, demarcated oval and round patches of varying sizes on wrist and dorsum of foot. Single patch was noted on back and left periorbital region. There was no leucotrichia. Dermoscopy revealed complete absence of pigment network (Figure 1). A diagnosis of vitiligo vulgaris was made, autoimmune thyroid profile was sent, and patient was started on topical betamethasone lotion and tacrolimus ointment.

One month later, the patient presented with itchy, violaceous papules surrounding some vitiligo patches on wrist and dorsum of foot. Cutaneous examination revealed presence of violaceous, flat-topped, papules coalescing together to form a border on the vitiligo patch situated on dorsum of foot (Figure 2). Lesions of similar morphology bridged two small vitiligo patches on flexor aspect of wrist (Figure 3). There was a sharp demarcation between normal skin bearing papules and depigmented skin. Similar papules were also present on normal skin in lower extremity. Hair and mucosal examination were normal. A biopsy sample was taken from papule and sent for histopathological examination. HPE revealed presence of hyperkeratosis, acanthosis and prominent lymphocytic infiltrate reaching the dermo epidermal junction (Figure 4). Dermoscopy showed presence of radial white striations on an erythematous

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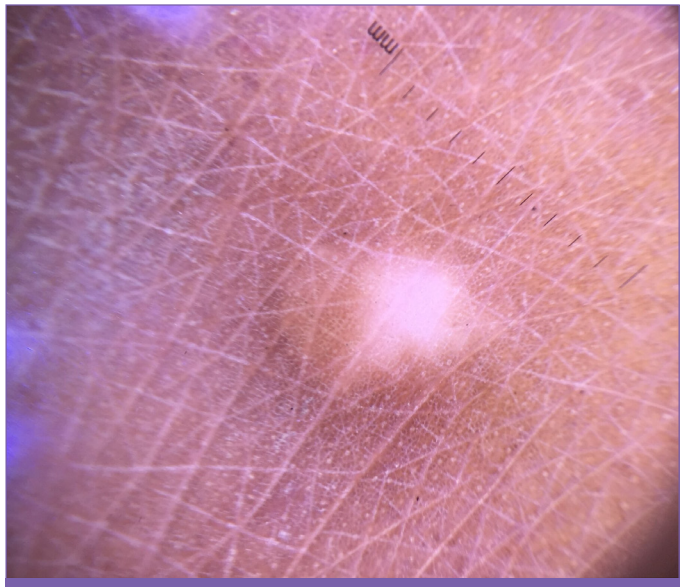

Figure 1. Complete absence of pigment network in vitiligo patch (Dermlite DL3N, 10X, Polarised mode)

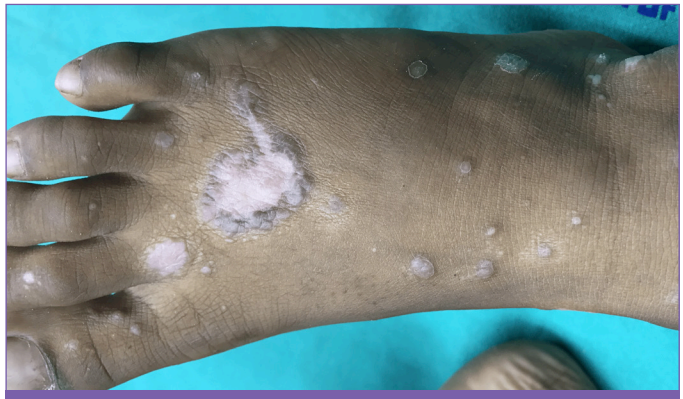

Figure 2. Violaceous papules forming a border on the vitiligo patch

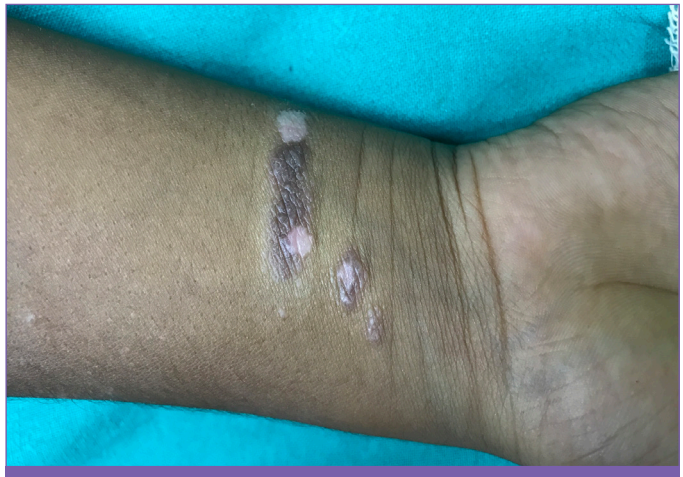

Figure 3. Violaceous papules bridging two patches on wrist

background (Figure 5). Based on clinical, dermoscopy and HPE findings, a diagnosis of lichen planus was made. Patient was prescribed oral minipulse therapy and topical mometasone once daily application on lichen planus lesions. Complete clearance of lichen planus was noted after 12 weeks of therapy with no new vitiligo patches. Autoimmune profile was within normal limits.

Informed consent was taken from the patient for possible case report publication

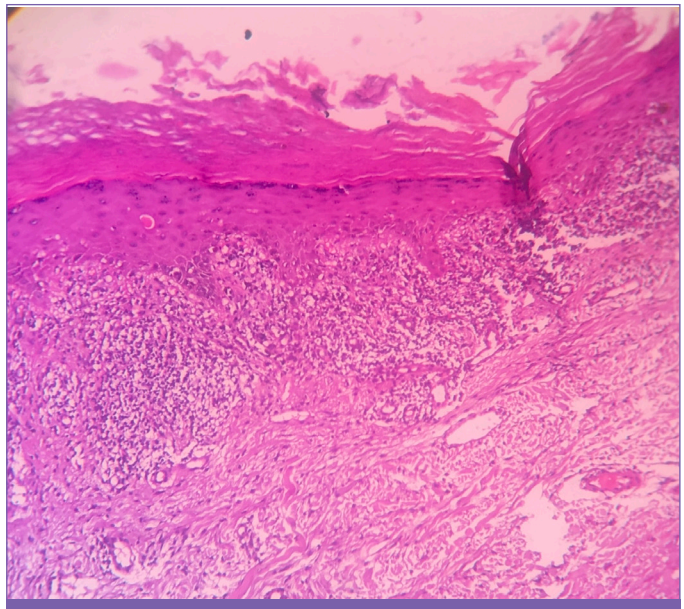

Figure 4. Hyperkeratosis, acanthosis and prominent lymphocytic infiltrate at dermo epidermal junction [H&E, 40X].

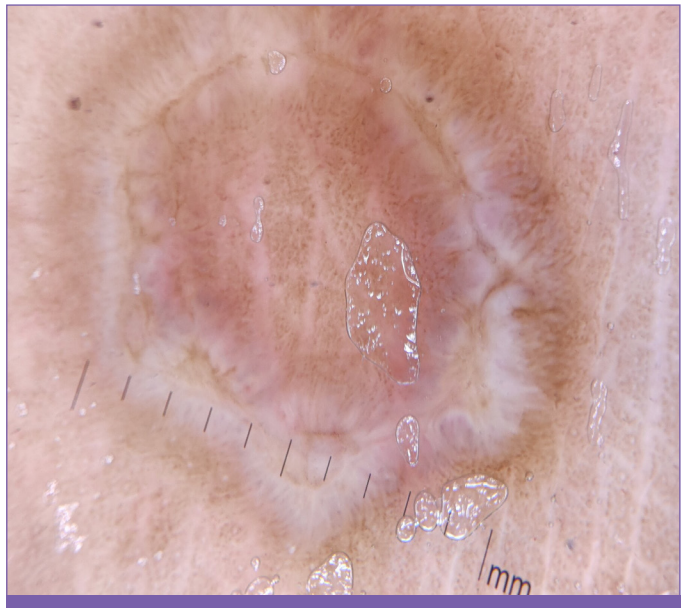

Figure 5. White striations on an erythematous background (Dermlite DL3N, 10X, Polarised mode)

Discussion

Vitiligo is a common pigmentary disorder affecting 0.5-2% of the world's population wherein autoimmunity plays a major role behind its pathogenesis. Lichen planus is also a common immunologically driven dermatosis with a near equal incidence of 1%.

Occurrence of lichen planus in vitiligo patients has been reported on vitiligo patches, non-vitiliginous skin, sun-exposed as well as photo-protected areas giving rise to various theories.

The first case was reported in 1997 in a 35-year-old woman wherein discrete papules were noted in the surrounding normal skin of some vitiliginous areas [3]. The authors proposed that it had the same significance as that of vitiligo presented with raised inflammatory borders. The second case reported in 2006 had unilateral lichen planus bordering a vitiligo patch on the lower extremity in a 56-year-old man. It was explained by relative absence of Langerhans cells in unstable vitiliginous skin. These cells play an integral role in pathogenesis of lichen planus. Langerhans cells present antigen to the helper T-cells and this causes subsequent damage to basal keratinocytes [4].

A case of familial co-localization of lichen planus on photo-exposed vitiligo patches proposes that actinic damage in vitiliginous skin may alter antigen expression on keratinocytes leading to lymphocytic infiltration [5]. It also strongly points towards a possibility of common genetic background for the two conditions.

Actinic induction of lichen planus has also been proposed by Sardana et al. [6] in a 14-year-old male patient who developed lichen planus on segmental vitiligo patch.

Another theory states koebnerisation as a common etiological trigger for development of vitiligo and lichen planus [7].

Anstey and Marks [8] in their case report have extrapolated the concept of alopecia areata suppressed by an allergic contact dermatitis on lichen planus-vitiligo. They state that two lymphocyte mediated conditions with apparently unrelated pathogenetic mechanisms can possibly influence each other.

We feel that co-existence of these two disorders at different anatomical sites could be co-incidental. However, co-localization and bordering of patch in our case points towards a common etiological trigger and links the two immuno-pathologically.

Actinic damage, koebnerisation and lack of Langerhans cells in vitiliginous skin could have played a cumulative role in the development of lichen planus in our case.

This case is unique because such presentation has never been reported in a child. Lichen planus rather than being discrete, limits itself here and coalesces to form an annular border on the unstable vitiligo patch.

It open a window to genetic and immunopathological studies to understand the ambiguous pathogenesis behind the coexistence of both conditions.

Ethics

Informed Consent: Informed consent was taken from the patient for possible case report publication.

Peer-review: Internally and externally peer-reviewed.

Authorship Contributions

Data Collection or Processing: S.P., S.S., D.S., Analysis or Interpretation: S.P., S.S., D.S., Literature Search: S.P., S.S., D.S., Writing: S.P., S.S., D.S.

Conflict of Interest: No conflict of interest was declared by the authors.

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