

## Cutaneous Lichen Planus Following Psoriasis: Wolf's Isotopic Response

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### Abstract

### Case Report

Wolf's isotopic response refers to the occurrence of a new skin disease at the exact site of an unrelated skin disease that had previously healed. Herein we report a case of wolf's isotopic response cutaneous lichen planus following psoriatic lesion, that has not been reported before. The initial skin disease was psoriasis and the isotopic response was a lichenoid reaction (lichen planus).

**Keywords:** Wolf's isotopic, lichen planus, psoriasis.

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## INTRODUCTION

Wolf's isotopic phenomenon is defined as the appearance of a new skin disease at the same site as a previously cured, unrelated skin disease [1].

The first report of such a case dates back to 1929, when Gougerot and Filliot<sup>2</sup> described a case of lichen planus that developed in a scar of a herpes zoster eruption of 2 months' duration. Another report appeared in 1938, 3 describing a case in which lichen planus developed in a herpes zoster site 3 years after the original zoster eruption [2].

Herein we report a case of wolf's isotopic response cutaneous lichen planus following psoriatic lesion.

## CASE REPORT

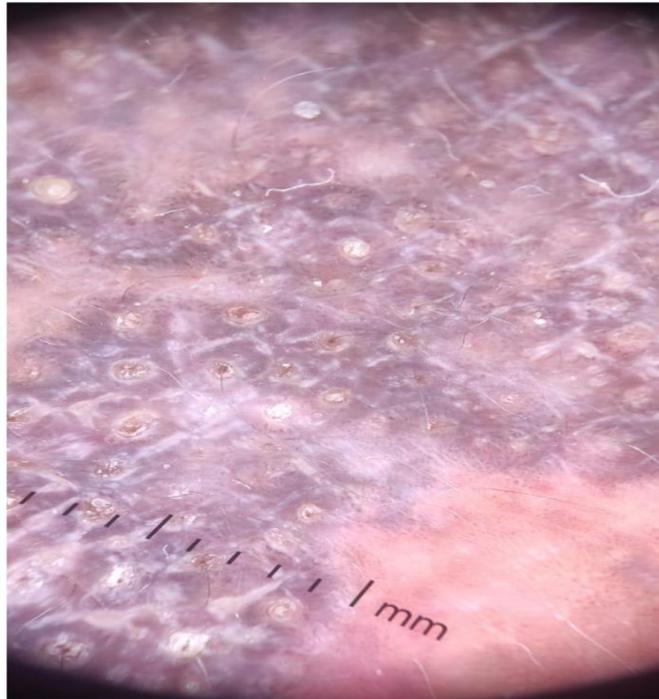
The patient was 63 years old, with no previous pathological history of note, and had been treated for extensive plaque psoriasis for 20 years treated with dermocorticoids and phytotherapy.

On clinical examination, he presented with erythematous-squamous plaques all over the body, particularly in the bastion areas, with a few infiltrating purplish patches on the upper back and elbows (Fig 1).



Figure 1: Infiltrated purplish patches on the extension side of the elbows

Dermoscopic examination of the purplish patches revealed linear, reticulated, lacy, bluish-white lesions (Wickham striae) (Fig 2).



**Figure 2: Dermoscopic image shows linear, lacy, bluish-white, reticulated lesions**

Histology of a papule showed orthokeratotic hyperkeratosis, hypergranulosis, irregular hyperacanthosis with a dermal lymphocytic infiltrate, leading to the conclusion of cutaneous lichen.

The patient was treated with a topical application of clobetasol propionate (DERMOVAL®) once a day for 3 months with good progress and disappearance of the lesions, leaving hyperpigmented scarring.

## DISCUSSION

Lichen planus (LP) and psoriasis are chronic inflammatory skin diseases. Both diseases are linked to genetic, immunological factors and can be induced by environmental triggers, such as mechanical lesions (isomorphic response; Koebner phenomenon) [3].

We report here a case of lichen planus, which appeared on psoriasis lesions, a phenomenon known as "Wolf's isotopic response".

Although the concept of the isotopic response was conceived as being analogous to Köbner's isomorphic response, and despite the similarities between the two terms, the similarities are only "skin deep," and there is a major difference between the two. Isomorphic response means "the same morphology" (as that of the existing disease) and describes the appearance of the same disease at another location. The term isotopic response describes the appearance of an altogether

different disease at the site of an already healed skin disease [2].

The occurrence of cutaneous lichen lesions at the site of a healed dermatosis has been widely reported [4, 5]; the underlying dermatosis is almost always a herpetic infection [4-6]. The novelty of this presentation lies in the fact that cutaneous lichen lesions have developed on psoriasis scars, which, to our knowledge, has never been described in the literature.

The pathogenesis of WIR remains unclear and includes vascular, immunological, and viral factors. Some authors state that the herpetic infection, by destroying cutaneous nerve fibers, could trigger immune dysregulation phenomena, thus favoring the development of inflammatory reactions or causing local immunosuppression [7-9].

The differential diagnosis between these two dermatoses is extremely important, especially if the treatment differs.

## CONCLUSION

Wolf's isotopic response (WIR) has been reported in more than 200 patients with various types of secondary dermatosis. However, Lichen planus after psoriasis has not been reported. Further research will be needed to understand the exact pathogenesis and epidemiology of this response.

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