

SHORT REPORT

Leprosy associated with psoriasis

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Summary Reported cases of leprosy and psoriasis coexistence are uncommon in the literature. Studies suggest a negative association between these two diseases. A case of association between these disorders has been reported.

Introduction

Leprosy and psoriasis are stigmatising diseases from biblical times, when psoriasis was even considered a form of leprosy.^{1,2} Literature data reinforce a negative connection of these diseases, which can in part be supported by the immunopathological knowledge of each of those entities.^{1–3} However, theories of this negative connection are controversial.

Case report

A male, 68 years old, was referred from Camaragibe - PE with a complaint of hypoesthesia in the calcaneous regions for around 2 years, associated with erythematous skin lesions. During the same period desquamative lesions appeared in the body, especially in the lower limbs and he was hypertensive and taking captopril.

The dermatological examination revealed that the patient had papules and erythematous and edematous plaques on the upper limbs, chest and abdomen (Figures 1 and 2), with thermal sensitivity change.

Sensitivity has been tested in the lower limbs (calcaneous regions), and a reduction of tactile sensitivity was noticed using the esthesiometer 300 g.

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Figure 1. Erythematous and edematous plaques in the trunk and arms.

The patient also presented erythematous scaly plaques of silver colouration which predominated in the knees and anterior legs, but also affecting his elbows and back (Figures 3 and 4).

A skin smear was requested to see if it was leprosy, and biopsy of the lesions was also taken.



Figure 2. Infiltrated plaques in the trunk and abdomen.



Figure 3. Plaques with silvery scales affect the patient's knees.

The Smear microscopy was positive, with bacteriological index of 3.75; staining bacilli: 80%; granulated: 10% and fragmented 10%, and presence of several globi.

The histopathological erythematous-edematous plaque (performed in the patient's arm) revealed diffuse histiocytic infiltrate, rich in foamy cells (Virchow cells) with perineural involvement, perivascular, and periannexal (Figure 5).



Figure 4. Erythematous scaly plaques on the back.

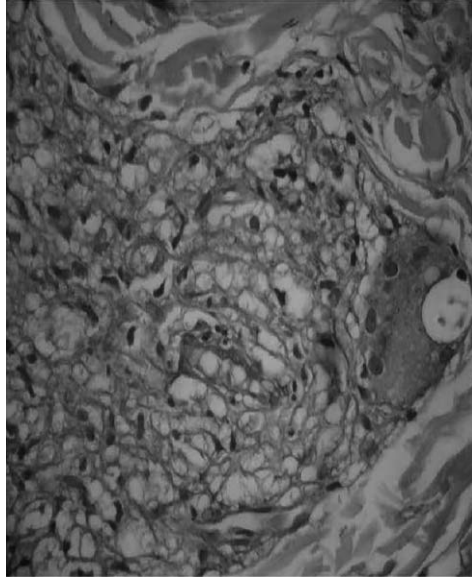


Figure 5. Histopathological showing diffuse histiocytic infiltrate, rich in foamy cells (Virchow cells) with perineural involvement, perivascular, and periannexal.

The Ziehl-Neelsen staining showed bacilli forming globi.

A second histopathological was performed in the erythematous, scaly lesions (knees), revealing epidermis with acanthosis psoriaseforme, parakeratosis, and neutrophils accumulation in the stratum corneum (Munro microabscesses). In discrete dermis-collagenous thickening was noticed and discrete lymphoplasmocytic infiltrate around the vessels, compatible with psoriasis (Figure 6).

The patient was started on multibacillary polychemotherapy, and targeted skin hydration 10% urea lotion. After 1 month, the patient returned, showing 'lumps in the body'. The scaly lesions on the lower limbs, however, showed a slight improvement. He was then started on thalidomide 100 mg / day for the treatment of ENL.

A month later the patient came back, with improvement in erythema nodosum frame and erythematous, scaly lesions. No specific treatment for psoriasis was performed in addition to skin hydration.

Discussion

The relation between psoriasis and leprosy has not been well elucidated, but has been controversial since ancient times, when psoriasis was considered a form of leprosy.¹

A report published in the second half of the twentieth century, about a large number of leprosy patients followed for approximately 40 years, pointed to a very low incidence of psoriasis among them. This observation stimulated the attention of researchers in the exploration of hypotheses that leprosy and psoriasis rarely develop in the same patient.^{1,2}

Bassukas *et al.* published an article that defended the hypothesis that psoriasis protects the clinical progression of leprosy; and that leprosy has been contained because of the increased prevalence of psoriasis.³ This could be explained by the fact that patients with psoriasis have

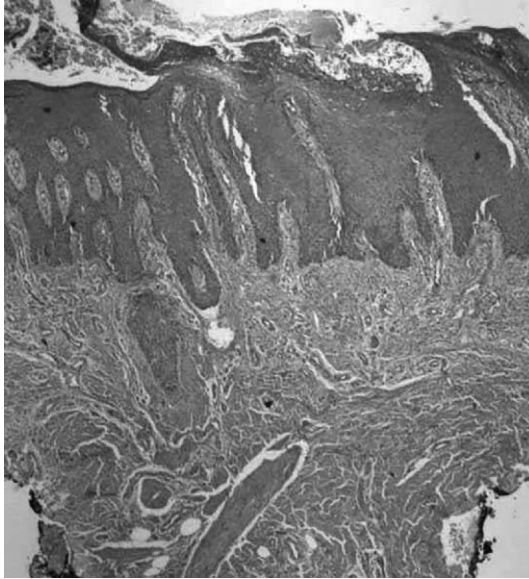


Figure 6. Histopathological findings acanthosis psoriaseforme, parakeratosis, and neutrophils accumulation in the stratum corneum (Munro microabscesses). In discrete dermis collagenous thickening was noticed and discrete lymphoplasmocytic infiltrate around the vessels, compatible with psoriasis.

an innate immunity and reinforced cell, which would protect against lepromatous leprosy and also against other bacterial infections.⁴

Also reported in the literature was an increased prevalence of psoriasis in areas where there were leprosy epidemics, as in Mediterranean Europe and the Middle East. A high rate of psoriasis has been observed in individuals of European ancestry, so that the occurrence of resistance to leprosy was observed most commonly in Europe. In this way, psoriasis would have expanded due to the pressure exerted by leprosy, in the genotype of individuals, leading to natural selection.^{4,5}

Our patient did not have European ancestry and had never manifested psoriatic lesions; this is the opposite of the hypothesis above.

Other theories suggest a protection against psoriasis in patients affected by leprosy. In the pathogenesis of psoriasis, psoriatic lesions have a significantly larger number of nerves with increased content of neuropeptides.¹ The Neuropathy caused by *Mycobacterium leprae* infection, results in structural and functional alterations in the cutaneous sensory nerves, and the consequent absence of neuropeptides in the leprosy skin. This process of neurogenic inflammation, which seems to be an integral part of the psoriatic disease process, is inhibited.¹

The patient in question first reported the development of lesions suggestive of leprosy and afterwards of psoriatic lesions, contradicting the protection theory of psoriasis in patients with leprosy.

There are few reports in the literature about the coexistence of psoriasis and leprosy in the same patient. Kumar *et al.*⁶ conducted a research using a questionnaire, which was filled out by medical treatment centres for leprosy in different parts of the world. Out of this research of 145,661 cases of leprosy, only 20 people had psoriasis.^{1,6}

Sugathan *et al.* (1990) and Nigam *et al.* (1991) also reported cases of association of both diseases in patients in India.^{7,8}

Initially the patient was oriented towards only hydrating the skin with urea lotion 10% which gave a slight improvement. The relevant factor noticed in our clinical case, was the clinical improvement of psoriasis after the introduction of thalidomide (100 mg / day) for the treatment of ENL (erythema nodosum leprosy). This may have happened because Type 2 leprosy reaction (erythema nodosum) and psoriasis has high levels of TNF alpha. And thalidomide decreases TNF alpha levels by immunomodulatory action, which can justify the improvement of the ENL and psoriatic lesions, too.^{9,10}

The literature reinforces evidence of a negative association between psoriasis and leprosy. Reports from cases of coexistence between these two diseases are sporadic and need further studies to elucidate this relationship.

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