

# Leucoderma syphiliticum - a rare expression of the secondary stage diagnosed by histopathology

Leucoderma sífilítica: expressão rara do secundarismo diagnosticada por exame histopatológico

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**Abstract:** Biopsies are occasionally necessary to confirm the diagnosis of secondary-stage syphilis, currently achieved by clinico-serological correlation. However, histopathologic examination may offer clues that can lead to the diagnosis of the disease in previously unsuspected or unusual cases. We report the case of a 35-year-old male patient with vitiligo-like lesions for two years, whose diagnosis of syphilis was suggested only after histopathologic examination. Some microscopic aspects observed are discussed and compared to data from the literature.

**Keywords:** Dermatitis; Histology; Syphilis, cutaneous; Treponemal infections

**Resumo:** Biópsias são ocasionalmente necessárias para confirmação diagnóstica de sífilis secundária, normalmente obtida por correlação clínico-sorológica. Entretanto, o exame histopatológico pode oferecer pistas que conduzam a um diagnóstico em casos antes insuspeitos ou de apresentação clínica incomum. Apresentamos um paciente de 35 anos, há dois com lesões acromicas vitiligoides, para o qual sífilis foi sugerida somente após o exame histopatológico. Alguns aspectos microscópicos observados são discutidos e comparados com dados disponíveis na literatura.

**Palavras-chave:** Dermite; Histologia; Infecções por Treponema; Sífilis cutânea

## INTRODUCTION

For suspicious cases of secondary-stage syphilis, it is a current dermatologic practice to confirm the diagnosis through the correlation of clinical data with the results of serologic tests. The performance of a biopsy, considered unnecessary in many cases, can be useful for at least two reasons: (i) to refine the diagnosis with strongly suggestive histopathologic clues; (ii) to exclude diseases with similar clinical characteristics and occasionally even positive serologic reactions; certain cases of lupus erythematosus and reactional states of leprosy are some examples.

The case reported in this work is exceptional

both from a clinical standpoint – for simulating vitiligo – and from a histopathologic standpoint – for presenting itself as lichenoid dermatitis, associating epidermal atrophy with superficial plasmocitary infiltrate. Although fairly unusual, these microscopic aspects direct the diagnosis towards secondary-stage syphilis, an overlooked alternative among the clinical hypotheses.

## CASE REPORT

Male patient, 35 years old, skin phototype III, interior designer, sought a doctor in May of 2004 complaining of white patches in his folds and genitalia,

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with pruritus and burning, that had appeared two years before. As morbid antecedents, the patient reported asthma, flexural atopic dermatitis treated for a long time with clobetasol cream and, at 33 years old, molluscum contagiosum histologically confirmed. Dermatologic examination revealed achromic maculae of varied forms and sizes, irregular and sharply demarcated, in areas associated with slightly papular erythema and peripheral hyperpigmentation in the inguinocrural region, penis, scrotal pouch (Figure 1) and popliteal regions (Figure 2). As clinical diagnostic hypotheses, the following were suggested: vitiligo and atopic dermatitis with dyschromic alterations secondary to topical corticotherapy. A biopsy of a lesion in the inguinocrural region was performed. Histopathologic examination showed a band-like lymphoplasmacytic inflammatory infiltrate in the papillary dermis, associated with epidermal atrophy, vacuolar alteration/interface squamotization and pigmentary incontinence (Figure 3). Plasmocytes were more abundant in areas (Figure 4). The deep reticular dermis did not show significant alterations. In conclusion, a lichenoid-like interface dermatitis, superficial, rich in plasmocytes, compatible with secondary-stage syphilis, diagnosis confirmed through serologic exams (reactive VDRL was 1:128, FTA-Abs positive IgM). Anti-HIV-1/2 and anti-hepatitis B and C serologies were negative. The patient underwent treatment with penicillin G-Benzathine (5 X 1,200.000 units). Two years later, in March of 2006, he returned showing complete regression of lesions (Figure 5) and reactive VDRL was 1:4, suggesting serologic scarring.

## DISCUSSION

Leucoderma syphiliticum (LS), as an expression of late secundarism, has been very little explored in the current dermatologic literature.<sup>1,2,3,4</sup> It is typically



FIGURE 1: Achromic maculae with peripheral hyperpigmentation and slightly papular erythema in the inguinocrural and genital regions



FIGURE 2: Achromic lesions and erythema in the popliteal region

localized on the neck and presents with small light or achromic maculae surrounded by pigmented areas (necklace of Venus), formerly an object of debate regarding its nature, whether primary (*d'emblée*) or secondary to other efflorescences of the luetic secundarism.<sup>5</sup> Studies of recent cases appear to validate both hypotheses through the observation of depigmented lesions that developed after the classical papular rash<sup>1</sup>, leucoderma as an inaugural manifestation<sup>4</sup>, associated aspects,<sup>2,3</sup> histopathology compatible with active secundarism<sup>2</sup> and even evidence of *T. Pallidum* on electron microscopy in lesions of LS.<sup>4</sup> In addition to the neck, other skin regions may also be affected. The inclusion of vitiligo in the differential diagnosis of LS is reflected both in one of its former designations (vitiligo syphilitica),<sup>5</sup> and in the vitiligo-like appearance of lesions, including in the genitalia, as in the case described by Pattman.<sup>3</sup>

In inflammatory processes with plasmocytes, recent syphilis should be considered, especially if the

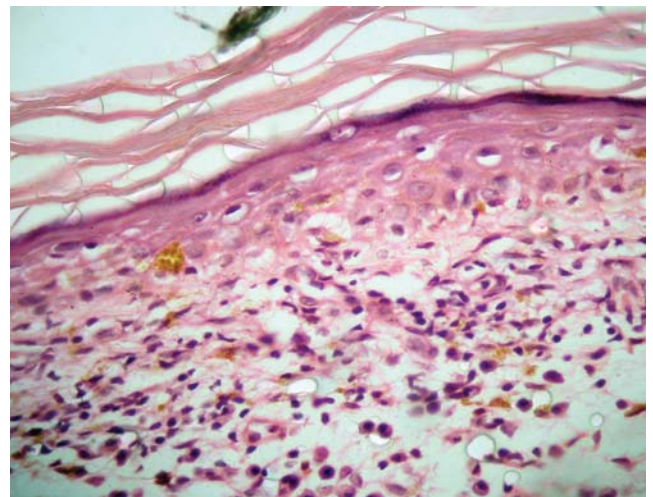


FIGURE 3: Epidermal atrophy, vacuolization/squamotization of the interface, pigmentary incontinence and band-like superficial lymphoplasmocytary infiltrate (hematoxylin-eosin; 100x)



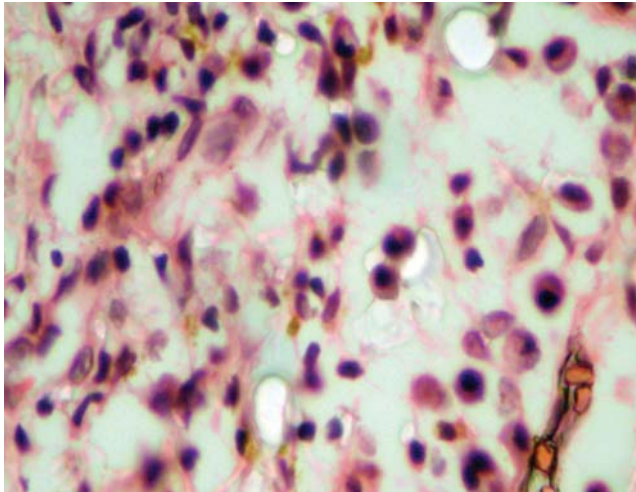


FIGURE 4: Predominant participation of plasmacytes in the infiltrate (hematoxylin-eosin; 400x)

infiltrate is superficial and deep, with the possibility of being exclusively superficial in macular lesions.<sup>6</sup> Endothelial edema of the blood vessels is another histological marker of primary and secondary syphilis; however, plasmacytes and endothelial edema are not always prominent and microorganisms are seldom validated in late secundarism.<sup>6</sup> The presence of spirochetes may be shown through the use of argentic coloration (Warthin-Starry, Levaditti, Steiner) or immunohistochemistry. In a histopathological study of 17 cases of secondary syphilis, Hoang et al.<sup>7</sup> noted a clear superiority of the immunohistochemistry in relation to argentic coloration to reveal spirochetes, with 71% and 41% positivity, respectively. Moreover, argentic coloration has the disadvantage of staining melanin granules, making it difficult to visualize the microorganisms in the epidermis, where they were essentially observed.

Lesions of late secundarism tend to be granulomatous, which forces us to include other granulomatous processes, such as sarcoidosis and leprosy. In relation to the latter, it is important to emphasize a possible perineural disposition of the infiltrate in secondary syphilis, observed in 74% of the biopsies studied in the work mentioned above by Hoang et al.<sup>7</sup>



FIGURE 5: Complete remission of vitiligo-like lesions observed after two years

The case hereby presented stands out for its unusual histopathological aspects, especially epidermal atrophy and band-like inflammatory infiltrate on the upper dermis. Except for the abundance of plasmacytes, which led us to suspect of syphilis, the symptoms do not coincide *in totum* with the classical ones described for the disease in the sources studied. For this reason, the clinico-pathological correlation, an essential step in the diagnostic process in dermatology, was vital to elucidate the case, allowing the exclusion of morbid conditions of similar histopathological expression, such as acrodermatitis chronica atrophicans (ACA) and other spirochetic infections. Important alterations of the dermoepidermal interface, with associated pigmentary incontinence, appear consistent with the dyschromic aspects of the clinical lesion.

In conclusion, secondary syphilis should be considered for flat dyschromic lesions in which a lichenoid-like interface dermatitis, superficial, with epidermal atrophy and predominance of plasmacytes on the infiltrate, is histopathologically observed. Special attention is recommended regarding the possible need to exclude the disease in patients with vitiligo-like lesions in the genital and adjacent areas. □

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