CASE REPORT

Syphilis associated with paretic neurosyphilis mimicking Reiter's syndrome in HIV-infected patients*

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Abstract: HIV/syphilis co-infection is common because both conditions affect similar risk groups. HIV interferes with the natural history of syphilis, which often has atypical clinical features and nervous system involvement in the early stage of disease. We report the case of an HIV-positive patient with secondary syphilis, scaling palmoplantar keratoderma, scrotal eczema, balanitis and urethritis mimicking Reiter's syndrome. Immunohistochemistry using polyclonal antibodies against Treponema pallidum revealed the presence of spirochetes, associated with the paretic form of parenchymal neurosyphilis. The patient was given crystalline penicillin, with complete resolution of dermatological and neurological symptoms, and no sequelae.

Keywords: Antibody-coated bacteria test, urinary; HIV; Nervous system diseases; Neurosyphilis; Syphilis; Skin diseases, eczematous; Treponema pallidum

INTRODUCTION

HIV/syphilis co-infection is common because both conditions affect similar risk groups.[1] HIV interferes with the natural history of syphilis, which often has atypical clinical features, and may even mimic Reiter's syndrome. [1-4] To date, there are only two reports of this rare condition in the literature. [2,3] Some cases present only with syphilitic eczema of the scrotum. [4]

Reiter's syndrome is characterized by peripheral seronegative polyarthritis, usually manifesting after dysenteric or urogenital infection. Mucocutaneous, nail and eye involvement are common. The mucocutaneous disease has an incidence rate of 8-31% and is characterized by circinate balanitis. There may also be involvement of the base of the penis and scrotum, and keratodermia blennorrhagica in palmoplantar regions. Ungual and periungual involvement is characterized by thickening of the nail plate, which becomes yellow and brittle. Onycholysis and pitting may also occur. Ocular involvement is present in only half the cases. [5]

In early disease stages, HIV/syphilis co-infection also often shows nervous system involvement.[1,6] More recent studies on HIV/syphilis co-infection have shown that syphilis is the main STD associated with HIV. A Brazilian study showed a prevalence of 8.8%, while in Greece the prevalence of co-infected patients was 7.8%. [7,8]

CASE REPORT

A 41-year-old White male diagnosed with HIV 3 years earlier, not on antiretroviral therapy, was admitted with time and space disorientation, bedridden paresis, tremors of extremities and psychiatric symptoms (delusions and hallucinations), with an evolution of 20 days. The patient also had dermatological manifestations with progressive evolution, which had begun 75 days earlier. On physical examination at the time of admission, these manifestations were characterized by: symmetric scaling keratoderma with exulcerations in the palmoplantar regions; ungual and periungual

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involvement of all 20 nails, exhibiting a thickened, yellowed and brittle nail plate, onycholysis, pitting and loss of cuticle; balanitis and scrotal eczema with exulcerations and abrasions; and inflammation of the urethral meatus without discharge (Figures 1, 2 and 3).

The count of CD4 + T lymphocytes was 392 cells/mm3 and the viral load was 90,501 copies/ml. The blood test revealed only a mild normochromic normocytic anemia, and biochemical tests were normal. There was a positive reaction to VDRL test with a titer of 1:128. Lumbar puncture was performed and the analysis of cerebrospinal fluid (CSF) revealed a protein level of 190 mg/dL, a glucose level of 21mg/dl cytometry of 48 cells/mm3, with 100% lymphocytes, and reactive VDRL with titers of 1:16. The biopsies of the palmar and scrotum lesions were stained with hematoxylin-eosin and showed hyperkeratosis, irregular acanthosis, altered interface characterized by intense spongiosis and exocytosis, as well as a perivascular, dense lichenoid infiltrate of histiocytes, linfocytes and plasma cells predominantly in the papillary dermis (Figure 4). For diagnostic confirmation, we performed an immunohistochemistry analysis using polyclonal antibody against T. pallidum. This analysis revealed a large number of spirochetes in the epidermis and superficial dermis. (Figure 5).

The patient was diagnosed with HIV/secondary syphilis co-infection associated with paretic neurosyphilis. He was treated with crystalline penicillin 18 million units/day EV for 14 days and initiated ART with efavirenz and combivir. The patient had complete resolution of neurological symptoms after 7 days of antibiotic therapy, and resolution of palmar, penile, scrotal and periungual lesions after 12 days of therapy (Figure 6). The VDRL revealed blood titers of 1:64, 1:64 and 1:16 after 3, 6 and 12 months, respectively. In addition, VDRL was non-reactive in CSF after 6 months of treatment.

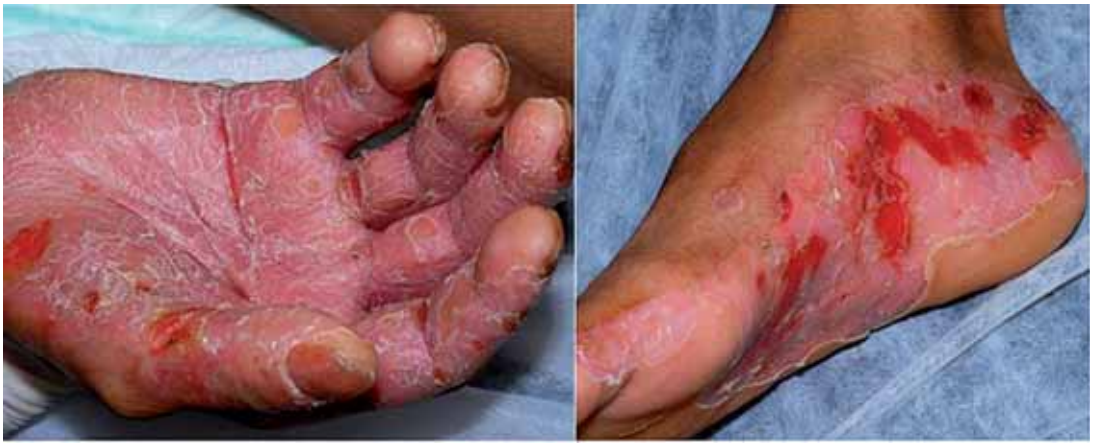

Figure 1: Palmar-plantar lesions. Scaling keratoderma with exulcerations in the palmoplantar regions

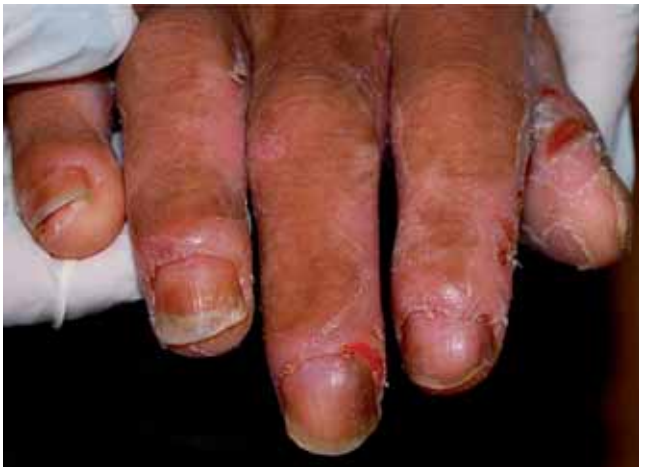

Figure 2: Ungual and periungual involvement. Thickened, yellowed and brittle nail plate; onycholysis, pitting and loss of cuticle

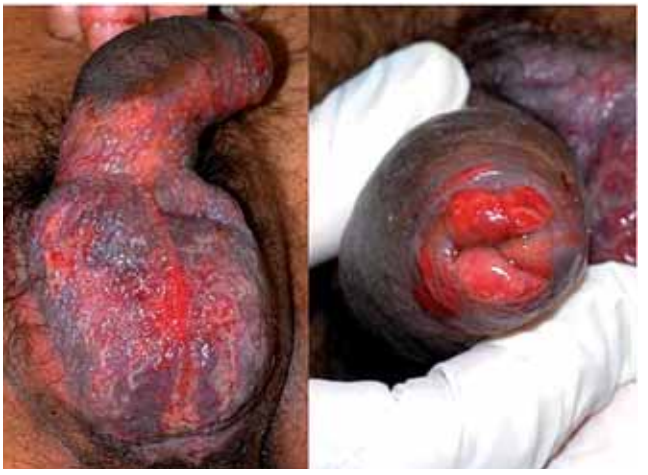

Figure 3: Lesions on the penis and scrotum. Balanitis and scrotal eczema with exulcerations and abrasions, and inflammation of the urethral meatus

DISCUSSION

Syphilis is known as "the great imitator" because it has a wide variety of clinical presentations. Atypical presentations are more frequent in the case of co-infection with HIV. In addition, it can mimic Reiter's Syndrome, as in the case reported here. [2,3]

Serological diagnosis of syphilis is made in two stages, the first being a non-specific treponemal test. If the test is positive, a treponemal-specific test is recommended. The VDRL test was positive with high titer (1:128). A confirmatory test was not performed. Biopsies of the palmar region and scrotum showed histopathology with syphilis. Immunohistochemistry with polyclonal antibody against T. pallidum were positive, confirming that these lesions are syphilitic and thus functioning, in this case, as a confirmatory test. [9] Immunohistochemistry shows a higher diagnos-

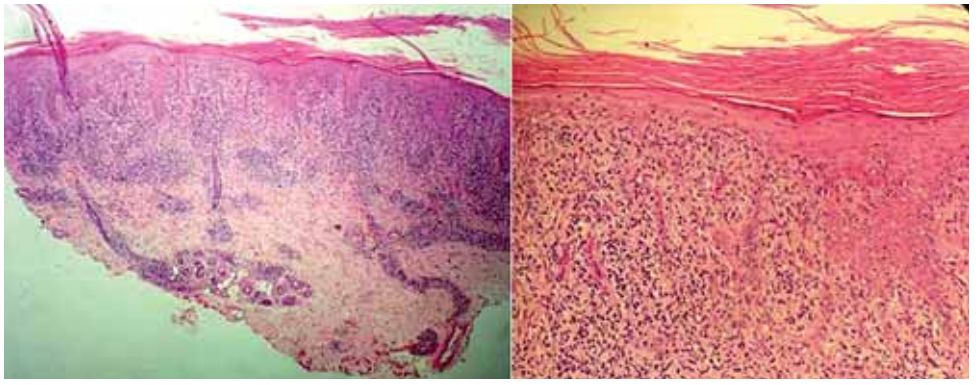

Figure 4: Histopathology of the palmar and scrotal lesions. Hyperkeratosis, irregular acanthosis, altered interface characterized by intense spongiosis and exocytosis, as well as a perivascular, dense lichenoid infiltrate of histiocytes, linfocytes and plasma cells predominantly in the papillary dermis

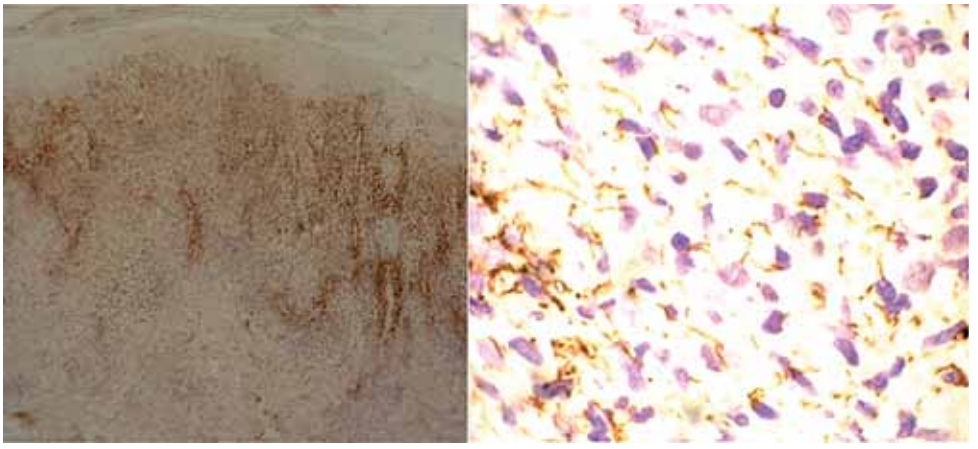

Figure 5: Immunohistochemistry using polyclonal antibody against T. pallidum. Large number of spirochetes in the epidermis and superficial dermis

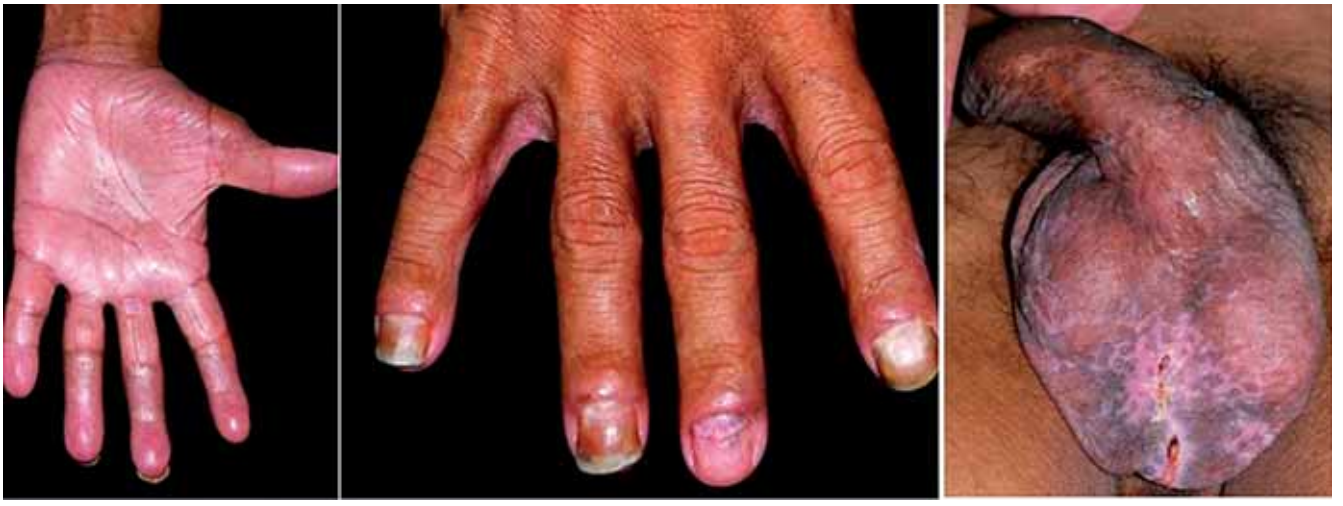

Figure 6: Resolution of lesions: lesions improved after one week of treatment wirh crystalline penicillin

tic sensitivity (80%) than Warthin-Starry stain (50%) in both primary and secondary syphilis lesions. Immunohistochemical staining shows the presence of T. pallidum especially in the dermo-epidermal junction zone or throughout the dermis and within the basal and suprabasal epidermis, usually absent in the upper layers of the stratum spinosum, as demonstrated in our patient.[10] This tropism for the epidermis may explain the of secondary syphilis lesions.

The patient also had neurological and psychiatric symptoms. Lumbar puncture confirmed CNS involvement by Treponema, with positive VDRL and a titer of 1:16. Neurosyphilis is classified as: asymptomatic, acute meningeal, meningovascular, and parenchymatous. The latter is subdivided into paretic neurosyphilis and tabes dorsalis.

Our patient's neurosyphilis is classified as paretic, which is currently a rare condition. Most reports describe such cases in HIV patients (early neurosyphilis). It is a chronic and progressive meningoencephalitis, with initial cognitive changes which invariably progress to dementia. Clinically, there is a combination of manifestations which can mimic any psychiatric disease with neurological alterations. [6]

Penicillin remains the treatment of choice. Our patient was treated with crystalline penicillin because suitable CSF concentrations are not attained with benzathine penicillin.[1,6] The VDRL plays an essential role in the post-treatment follow-up of syphilis. It is performed every six months. However, in HIV-infected patients it is recommended to reduce the interval to 3 months.[1] When associated with neurosyphilis, CSF tests are recommended every 6 months until CSF abnormalities have resolved. If by the end of 2 years, CSF abnormalities have not resolved, retreatment for neurosyphilis is recommended.[6] After the sixth month our patient already had a normal CSF profile.

Therefore, clinicians are required to maintain a high index of clinical suspicion of syphilis when faced with lesions that mimic Reiter's syndrome. Moreover, paretic neurosyphilis should be included in the differential diagnosis of patients who present neurological and psychiatric symptoms, especially in the course of HIV infection. ❑

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