



**Pruritic nodular secondary syphilis in a 61-year-old man with HIV infection.**

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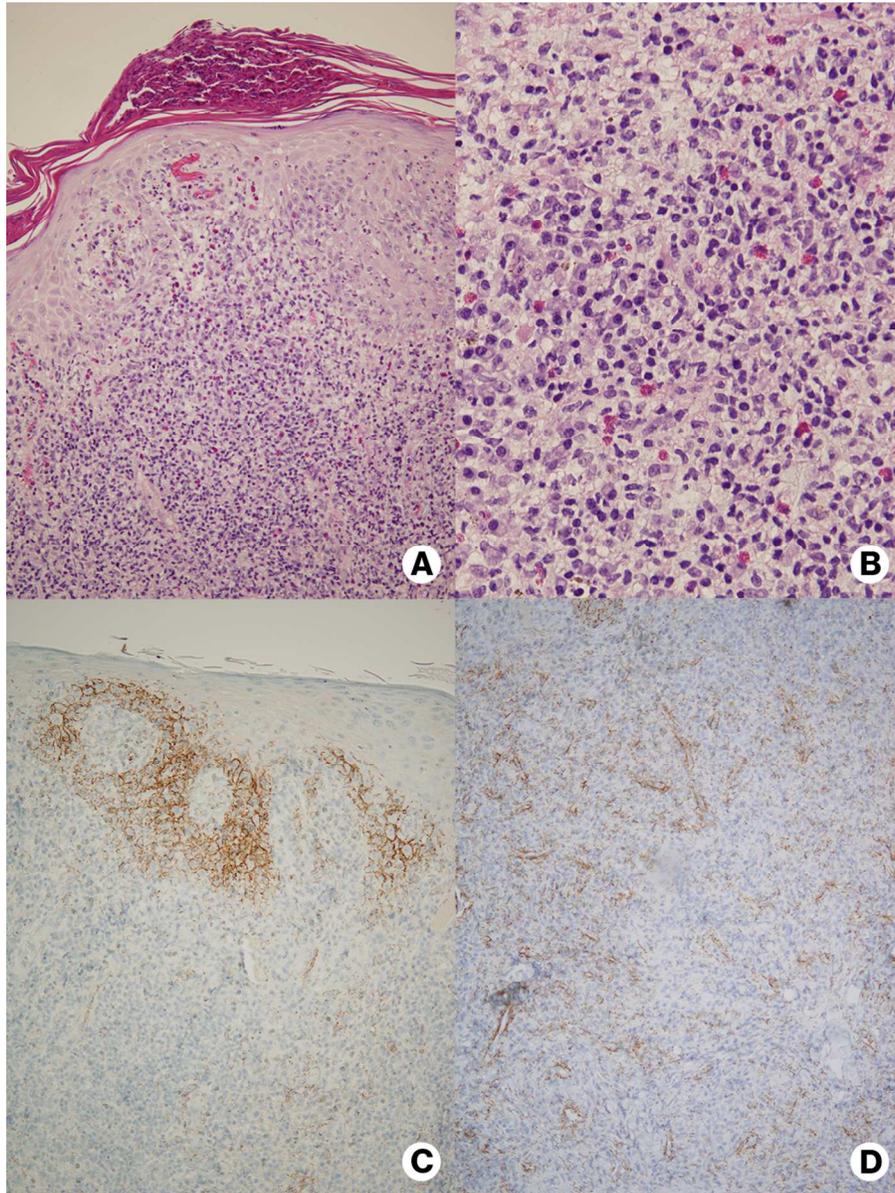


Crusted and ulcerated nodules on the trunk (A), thighs and legs (B).

Figure 1

497x310mm (72 x 72 DPI)

review



Histopathological examination showed polymorphonuclear neutrophils exudate inclusions in the corneal layer, with epidermal acanthosis, eosinophilic spongiosis and a dense infiltrate composed of lymphocytes, plasma cells and eosinophils in the dermis (haematoxylin and eosin; A, 100x, B, 200x). The *Treponema pallidum* antibody immunostain revealed numerous spirochetes in the basal layer of the epidermis following an epitheliotropic pattern (C, 100x) and in the reticular dermis in a vasculotropic pattern (D, 100x).

Figure 2

451x599mm (72 x 72 DPI)



812x1219mm (72 x 72 DPI)

Abstract: The typical finding in secondary syphilis stage is a generalized non-pruritic maculopapular eruption. We report a case of secondary syphilis in an HIV-infected patient presenting with pruritic crusted nodules showing numerous eosinophils on the histopathological examination.

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## CASE REPORT

A 61-year-old male patient from Bulgaria presented with a 2-month history of a pruritic eruption on his trunk and legs, along with a 15-day history of lesions on the penile shaft and coronal sulcus. He had no history of atopic dermatitis. He reported malaise and asthenia but no fever, night sweats or weight loss. He was diagnosed with human immunodeficiency virus (HIV) infection six years ago and he has been receiving treatment with abacavir, lamivudine and nevirapine. CD4 levels were 668/ul and the viral load was undetectable. He referred unprotected sexual intercourse with at least four men over the past three months.

Physical examination revealed several crusted nodules and papules measuring from 5 to 10 mm of diameter over the trunk and limbs (Figure 1A and Figure 1B). Secondary scratch lesions were present especially over and around leg lesions. Examination of the external genitalia showed flat erythematous papules on the coronal sulcus and penile shaft. Several round erythematous macules were present on his soles, but his palms were clear of lesions. Oral mucosa, scalp and face were spared. There was no regional lymphadenopathy or hepatosplenomegaly. Photographs were taken after written informed consent was obtained.

Blood test revealed eosinophilia (860/ul, reference range 5-500/ul) with no other abnormalities. Serological testing for syphilis was performed showing reactive IgG and the rapid plasma reagin (RPR) test gave a result of 1:64.

Histopathological examination of a 4-mm punch biopsy from a papule on the trunk demonstrated a superficial and deep perivascular inflammatory dense and diffuse infiltrate of numerous plasma cells, lymphocytes and eosinophils (Figure 2A and 2B). Epidermis showed acanthosis, eosinophilic spongiosis as well as hyperparakeratosis and orthokeratosis with polymorphonuclear neutrophils exudate inclusions in the corneal

layer. The *Treponema pallidum* antibody immunostain (Biocare Medical, Walnut Creek, CA) revealed numerous spirochetes in the basal layer of the epidermis following an epitheliotropic pattern (Figure 2C), as well as in the follicular infundibular epithelia and the reticular dermis in a vasculotropic pattern (Figure 2D).

A diagnosis of papulonodular secondary syphilis was made and the patient was treated with benzathine penicillin G, 2.4 million units by intramuscular injection once a week for 3 consecutive weeks. The skin lesions regressed progressively over the weeks without scarring. Pruritus and eosinophilia resolved completely (460/ul). After 3 months RPR test was positive at a titer of 1:4.

The most common cutaneous symptom of secondary syphilis is a generalized papular and scaly rash frequently involving the palms and soles. There are few reports of nodular secondary syphilis in the literature (1-7). Lesions have been described as partially infiltrated, red-to-violaceous papules or nodules, sometimes ulcerated, predominantly affecting the face, mucous membranes, palms and soles. Either generalized and countless lesions (1,2,3,4,6,7) or multiple lesions located on the trunk, face and limbs (5,8) can be found, as in the present case. It has been suggested that the presence of nodules or ulceration can correspond to a late secondary stage and can represent a transition to a tertiary phase, due to specific hypersensitivity to treponemal infections or a long period of infection (3). Pruritus was a prominent symptom in our patient. Although it has not been described classically as a common feature in secondary syphilis, four case reports had stressed on pruritus related to the maculopapular eruption and in one case related to psoriasiform plaques on the scalp, face and body (9-11). In addition, one previous study revealed pruritus on 44 out of 105 patients with secondary syphilis (12). The absence of other symptoms like weight loss, asthenia, arthralgias or fever excluded the diagnosis of malignant syphilis (13,14). In

addition, in malignant syphilis the necrotic lesions are due to perivascular infiltrate at the deep vessels along with pronounced endothelial swelling and fibrinoid necrosis, whereas in the presented case, despite the dense inflammatory infiltrate, the clinical presentation of crusts over the nodules was due to neutrophils exudate inclusions in the corneal layer, with no vascular involvement.

Although the classical histological findings of syphilis include predominantly plasma cell infiltration, other findings including ulcerative, granulomatous and eosinophil-rich patterns have to be considered for the diagnosis of secondary syphilis (8,15).

Among the differential diagnoses in an HIV infected patient we considered pruritic papular eruption of HIV, prurigo nodularis, drug-induced eruption, arthropod bite reaction, nodular scabies, cutaneous lymphoproliferative disorders and spread of cutaneous infection, in addition to secondary syphilis.

We decided to treat the patient with 3 consecutive weekly injections of benzathine penicillin G 2.4 million U on the basis of previous reports concerning nodular syphilis in non-HIV infected patients, although data are controversial (16).

This case illustrates how pruritus can be the presenting symptom of secondary syphilis and that the diagnosis must be considered especially in HIV patients with papulonodular lesions, needing a careful sexual history and serological testing to obtain an accurate diagnosis and to offer an appropriate early treatment.

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## FIGURE LEGENDS

**Figure 1.** Crusted and ulcerated nodules on the trunk (A), thighs and legs (B).

**Figure 2.** Histopathological examination showed polymorphonuclear neutrophils exudate inclusions in the corneal layer, with epidermal acanthosis, eosinophilic spongiosis and a dense infiltrate composed of lymphocytes, plasma cells and eosinophils in the dermis (haematoxylin and eosin; A, 100x, B, 200x). The *Treponema pallidum* antibody immunostain revealed numerous spirochetes in the basal layer of the epidermis following an epitheliotropic pattern (C, 100x) and in the reticular dermis in a vasculotropic pattern (D, 100x).

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