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CASE REPORT

Malignant syphilis in human immunodeficiency virus-infected patients

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ABSTRACT

Syphilis, the "great imitator" of skin diseases, remains a public health problem worldwide. Coinfection by the human immunodeficiency virus (HIV) and syphilis is common and has important clinical consequences. HIV infection may alter the classical clinical course and manifestations of syphilis. We herein report two young men who presented with fever and generalized ulceronecrotic lesions, which mimic hemorrhagic chicken pox, eczema herpeticum, or vasculitis. Malignant syphilis (lues maligna) was diagnosed according to clinical presentation, serology, and pathology. HIV infection was subsequently confirmed later. Excellent resolution of skin lesion was achieved after appropriate antibiotics therapy.

Introduction

Syphilis, a sexually transmitted disease caused by the spirochete *Treponema pallidum*, can mimic a variety of skin conditions. It is well-known that syphilis increases the risk of human immunodeficiency virus (HIV) transmission, and HIV infection, in turn, can alter the natural history and clinical manifestations of syphilis.[1] Malignant syphilis (lues maligna) is a rare presentation of secondary syphilis, and most reported cases are associated with concurrent HIV infection.[2,3] We herein describe two cases of lues maligna present initially in HIV-infected young men.

Case Reports

Case 1

A 22-year-old man presented to our emergency department with a 1-week history of painless skin lesions. According to the patient, the skin lesions initially appeared as small erythematous papules over his face and gradually spread to the trunk and extremities. Some papular lesions became centrally ulcerated or necrotic. The patient also experienced fever, weight loss, headache, nausea, vomiting, increased lethargy, and poor appetite during the past 1 month.

On examination, the patient appeared ill, febrile, and pale. Skin lesions consisted of multiple nontender, nonpruritic, erythematous papuloplaques, some with a necrotic center, and ulcers covered by a dark rupioid crust on the face, trunk, and four limbs (Figure 1). There was no involvement of mucous membranes or genitalia. Marked cervical lymphadenopathy was also noted.

Results of Tzanck smear revealed neither multinucleated giant cells nor balloon cells. Complete blood count revealed the following: hemoglobin level of 13.7 g/dL; decreased leukocyte count ($3.6 \times 10^3/mm^3$; 41% neutrophils, 45% lymphocytes, and 1% atypical lymphocytes); and platelet count of $1.1 \times 10^5/mm^3$. Results of biochemical study showed elevated levels of serum aspartate aminotransferase (152 U/L; normal, 15–40 U/L) and alanine aminotransferase (238 U/L; normal, 15–40 U/L). HBsAg, anti-HBc immunoglobulin M (IgM), and hepatitis C antibody were negative. Results of renal function, C-reactive protein, antinuclear antibody, complement 3 (C3), and antineutrophil cytoplasmic antibody tests were normal.

Initially, the patient was administered with an intravenous injection of levofloxacin at the emergency room for possible atypical infection. However, the condition did not improve and a dermatology consultation was requested. Serology blood tests for syphilis,

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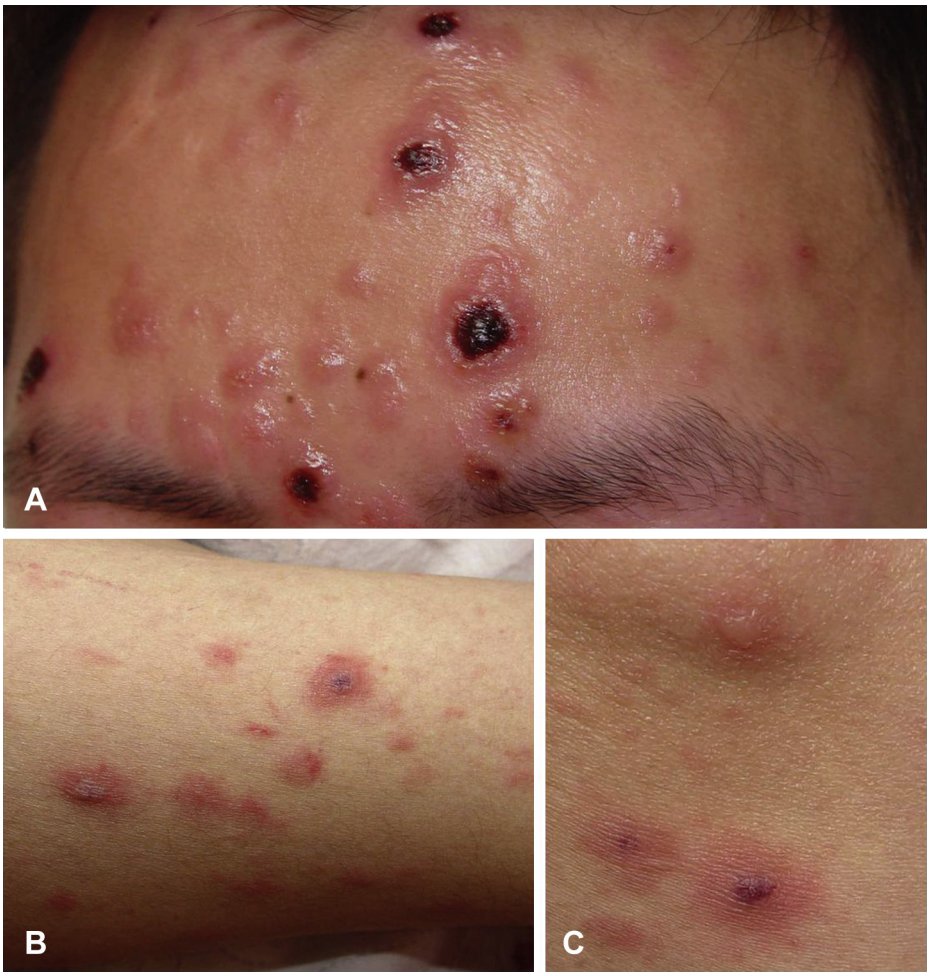

Figure 1 Multiple erythematous papuloplaques with necrotic center or crusted ulcers on (A) face, (B) upper limbs, and (C) lower limbs. Blisters can be seen in some lesions.

Cryptococcus antigen test, and skin biopsy were performed. Sections of the skin samples from the right forearm revealed ulceration, spongiosis, and marked dermal edema. The epidermal cells near the ulceration showed psoriasiform hyperplasia. In the dermis, a superficial and deep, perivascular and interstitial infiltrate of neutrophils, lymphocytes, histiocytes, and some plasma cells was identified. Necrotizing vasculitis with fibrinoid necrosis and endothelium swelling were also noted. Although the results of periodic acid–Schiff, acid-fast, and Warthin–Starry staining were negative, syphilis serology test results later demonstrated a rapid plasma reagin (RPR) titer of 1:4 and a *T. pallidum* hemagglutination assay (TPHA) titer of 1:320. Tissue cultures for fungi, bacteria, and mycobacterium were unremarkable.

Based on all these findings, the patient was diagnosed with malignant syphilis (lues maligna). Results of both HIV serological test and HIV enzyme-linked immunosorbent assay (ELISA) showed positive findings, which were confirmed by HIV Western blot. The patient had a CD4 count of 360 cells/mm^3 and the HIV viral load was 3187 copies/mL. The patient refused a lumbar puncture, and treatment was started with intravenous aqueous penicillin G injection (24 million units/day in divided doses, every 6 hours) for 2 weeks. Jarisch–Herxheimer reaction (JHR) did not occur during treatment. The therapy resulted in rapid regression of the skin lesions and systemic symptoms several days later (Figure 2). However, this patient was lost to follow-up after discharge.

Case 2

A 26-year-old homosexual man without systemic disease was admitted to the hospital because of skin rash and fever of unknown origin for 3 weeks. The patient was in good condition until approximately 3 weeks prior to presentation, when mild itchy skin rashes were noted on the anterior chest. Two days after the presentation of skin lesions, the patient developed intermittent fever up to 38°C with occasional chillness. Besides, the rashes progressively spread to the whole body including the four limbs, face, and genital organs. One week prior to admission, the patient developed malaise, myalgia, arthralgia at the knee and ankle joints, and sore throat. Moreover, the patient reported unintentional weight loss of approximately 3 kg during the previous 1 month.

Physical examination in the emergency room showed an acute ill-looking appearance with multiple nontender, nonpruritic erythematous papulovesicles on the face, trunk, and four limbs including palms and soles (Figures 3A–3C). A complete blood count showed leukopenia (white blood cells 2000/μL) and anemia (Hb: 9.7 g/dL). Measurement of electrolyte levels, results of renal function tests and liver function tests were all normal; autoimmune disease profile for antinuclear factor, antidouble-stranded DNA, C3, and C4, and infection survey for *Amoeba*, *Cryptococcus*, hepatitis C virus, hepatitis B virus, toxoplasma IgG/IgM were negative; urinalysis showed normal finding. The patient was not allergic to medicine before, and denied any drug abuse history; however, he