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Syphilitic Roseola in Human Immunodeficiency Virus-infected Homosexual: A Case Report

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Abstract

BACKGROUND: Roseola syphilitica is one of the main manifestations of secondary syphilis. Syphilis is a sexually transmitted disease caused by *Treponema pallidum*. Syphilis and human immunodeficiency virus (HIV) infection can occur simultaneously and complicate the progression of the disease. HIV-syphilis coinfection is often cited as the main cause behind the increasing prevalence of syphilis among men who have sex with men (MSM).

CASE PRESENTATION: A 21-year-old man with HIV infection came with complaints of reddish spots on the face, genitalia, and palms of hands and feet that had appeared 3 weeks prior without itching or pain. The patient had a history of self-limiting red spots on his genitals 3 months prior. T. pallidum hemagglutination assay and veneral disease research laboratory serological examination showed titers of 1/10240 and 1/128. The patient was diagnosed with secondary syphilis and was given a single dose intramuscular injection of benzathine penicillin G 2.4 million units. Syphilis is often found together with HIV infection. The clinical picture of syphilis varies greatly, depending on the stage. In HIV patients, the clinical manifestations of syphilis are similar to non-HIV patients but the lesions are more aggressive. Serological tests are accurate and reliable for diagnosis and monitoring patient's response to treatment. Until now, penicillin is still effective for treating syphilis but further physical and serological examinations are still needed for up to 24 months.

CONCLUSION: HIV infection in MSM is the most important factor causing syphilis. The diagnosis is made based on physical examination and blood serology. There is no difference in syphilis therapy between HIV patients and those who do not have HIV.

Introduction

Syphilitic rosacea is one of the most prevalent stages of secondary syphilis. Main findings are multiple, asymptomatic, light pink erythema of 5 mm–20 mm in diameter which occur on the whole body surface, markedly on the palms and soles. Syphilis is a type of chronic systemic infection caused by *Treponema Pallidum* bacteria. Syphilis is transmitted by direct contact with lesion or body fluid by sexual intercourse, transplacental, blood transfusion, of needle contamination [1].

Syphilis commonly found as coinfection with human immunodeficiency virus (HIV). Data by Indonesian Health Ministry reveal its incidence by 4192 cases. These forms of coinfection are the most prevalent form compared to any other HIV coinfection. Syphilis-HIV coinfection has become the leading cause of syphilis prevalence dominantly on male with sexual activity with another male (homosexual) for 28.8% [2].

The clinical manifestation of syphilis varies greatly, depending on the stage. In HIV-infected individual, syphilis can progress with more aggressive form and present with atypical clinical features, making diagnosis and management difficult. Syphilis stages consist of primary, secondary, early latent, late latent, and tertiary syphilis. Primary syphilis has an ulcer-like appearance (chancre) that is painless (indolent), indurated, and usually heals on its own. Secondary syphilis or what is known as "the great imitator," namely lesions that vary and resemble lesions in other diseases. This disorder is called syphilitic roseola, which is a non-itchy copper red rash or spots that spread throughout the body, most often on the palms of the hands and feet. Syphilitic roseola can disappear and cause hypopigmented spots called syphilitic leukoderma. Other symptoms of secondary syphilis are condyloma lata, varicelliform syphilis, mucous patches, lymphadenopathy, split papules, and patch alopecia. In the latent stage, there are no clinical symptoms, but the results of blood serological tests show positive results. In the tertiary stage, the first lesions will appear 3–10 years after primary syphilis. Typical abnormalities in the form of gums, namely circumscript, chronic, softened, and destructive infiltrate. Cardiovascular syphilis and neurosyphilis can be found in tertiary syphilis [3], [4].

Treatment of secondary syphilis with HIV co-infection is no different than in non-HIV patients. The therapy regimen based on central for disease control

and prevention (CDC) 2021 is the administration of benzathine penicillin G (BPG) 2.4 million international units intramuscularly once. Serological tests for HIV patients should be repeated at 1, 3, 6, 9, 12, 24 months because syphilis patients with HIV are susceptible to therapy failure due to an unfavorable immune response [5].

The risk that can arise after injecting BPG is the jarisch–herxheimer (JH) reaction which is an inflammatory reaction that occurs after administering antibiotic therapy to spirochetes and most often occurs within 2–5 h after therapy with similar symptoms accompanied by systemic reactions in the form of fever, sweating, and anorexia within 24 h after administration of syphilis therapy. JH reactions can occur as quickly as 2 h after administering therapy. This reaction usually begins with fever and can be followed by several clinical symptoms such as headache, chills, lymphadenopathy, pharyngitis, malaise, and myalgia [4], [6].

Case Report

A 21-year-old homosexual male was consulted from the voluntary counseling and testing polyclinic to the Dermatology and Venereology Department of RSPAD Gatot Subroto with complaints of painless and non-itchy red spots on the face, genitals, palms of the hands, and soles of the feet for the past 2 weeks. However, the patient admitted that there was a self-healing painless and non-itchy wound in the genital area 3 months ago. At present, the patient is still on antiretroviral therapy treatment which has been going on since 2019. He admits unprotected anal and oral intercourse since 2017. He also has multiple sexual partners with similar sexual activity. The patient denied the use of illegal drugs, needle sharing, and tattoos.

On physical examination, erythematous plaques and hyperpigmented macules with collarette scales and lenticular size with firm borders were found to appear discretely distributed on the genitals, plantar manus, and pedis bilaterally (Figure 1). There was no baldness or abnormalities in the patient's nails. Laboratory examination found positive results for *T. pallidum* hemagglutination assay (TPHA) with a titer of 1/10240 and veneral disease research laboratory (VDRL) with a titer of 1/128. This patient was diagnosed with secondary syphilis based on the history, physical examination, and laboratory examination. He was given intramuscular injection therapy of BPG 2.4 million units once. There is no JH reaction during monitoring. Follow-up control, 1 week after therapy, has shown clinical improvement (Figure 2).

Discussion

We presented a case of 21-year-old homosexual male, with multiple sexual partners with high-risk unprotected sexual behavior. He was also diagnosed with HIV in 2019 and is on chronic antiretroviral therapy. Based on epidemiology, secondary syphilis is most commonly found in sexually reproductive ages (20–29 years). Several studies have proven that HIV infection may increase susceptibility to syphilis infection. Decrement in CD4 level from HIV infection may reduce humoral antibody response important to counter syphilis infection [6], [7].

Three months earlier, he had primary syphilis in the form of painless self-limiting sores in the genital area (durum ulcers). Physical examination of this patient reveals bilateral axillary lymphadenopathy appropriate to syphilitic roseola manifestation. Article by Anum *et al*., that without adequate treatment, primary syphilis will progress to secondary syphilis with the appearance of symptoms of lymphadenopathy and syphilitic roseola. Syphilitic roseola or secondary rash appears within 1–12 months (average 4–8 weeks) after primary syphilis. The macules that appear can get bigger and

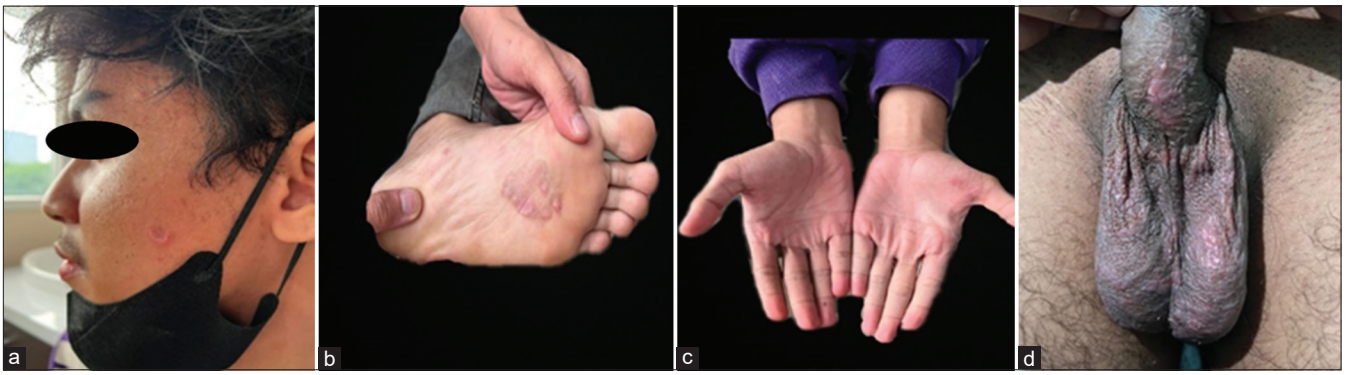

Figure 1: (a) Erythema macular rash at facial region; (b) Erythema macular rash at sole; (c) Erythema macular rash at palmar; (d) Erythema macular rash at scrotum and penis

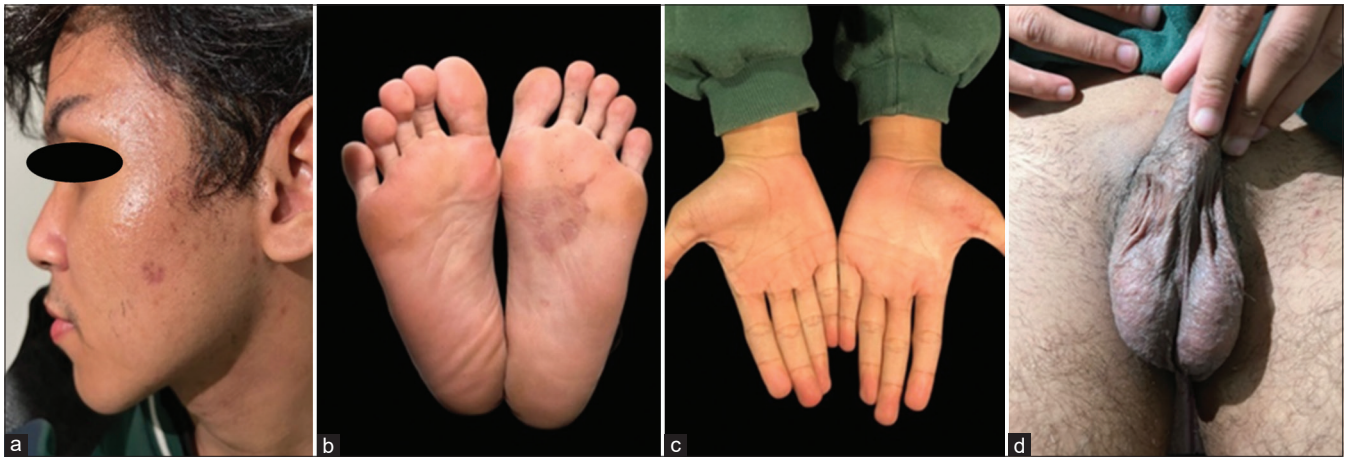

Figure 2: (a) Hyperpigmented macular rash at facial region; (b) Hyperpigmented macular rash at sole; (c) Hyperpigmented macular rash at palm; (d) Hyperpigmented macular rash at penis and scrotum

become annular or scaly. The color may progress from red to brown and thicken and appear with papular lesions as the disease progresses (polymorphism). The polymorphism of secondary syphilis rash may be due to differences in the intensity of inflammatory cell infiltrates and blood vessel involvement which results in ischemia in the skin lesions of syphilis sufferers. In syphilis patients with HIV infection, clinical manifestations of secondary syphilis are more commonly seen compared to patients without HIV infection [8].

Laboratory examination reveals positive infection of syphilis with TPHA with a titer of 1/10240 and the VDRL with a titer of 1/128. The syphilis examination consisted of a screening test with a non-treponemal test and a confirmation test with a treponemal test. VDRL is a non-treponemal serological test by measuring antibodies to cardiolipin contained in *T. pallidum* and in damaged host cell membranes. In addition to non-treponemal tests, clinicians must also perform serological confirmation of syphilis. This is due to syphilis patients with HIV giving unusual serological responses, for example, false-negative results. Specific serological test for syphilis (treponemal test) may resolve the false-negative results, for example, the TPHA, which is useful for confirming the diagnosis of syphilis in HIV patients. TPHA remains gold-standard workup due to its high specificity and sensitivity with fast reactive results and long-term reactivity [9], [10].

Based on secondary syphilis diagnosis, single dose of BPG 2.4 million international units intramuscularly was given as recommended by CDC 2021. BPG is the drug of choice in syphilis infection with or without coinfection by HIV, and this is due to its long duration of action with single injection with no doubts to patient lack of compliance. The effectivity rate of BPG after early syphilis reaches 95%, with skin disorders gradually healing in 7–14 days. Meanwhile, enlarged lymph nodes can persist for weeks. During treatment, patients are prohibited from sexual intercourse and their sexual partners are recommended to receive similar treatment. Follow-up examinations in HIV patients for secondary syphilis to determine the titer can be repeated at months 1, 3, 6, 9, 12, and 24. This is because syphilis patients with HIV co-infection need a longer time for the serological titer to decrease with the appropriate therapy regimen. The patient underwent a TPHA–VDRL serological examination 3 months after treatment to see the success of therapy. It was found that the TPHA examination titer decreased to 1/5120 and the VDRL titer became 1/64 [5], [11].

Conclusion

Patients with syphilitic roseola who were co-infected with HIV received single dose of intramuscular BPG 2.4 UI therapy, with significant improvement in syphilitic roseola rash and decrement of serological titer. No side effects were found after antibiotic therapy.

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