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Overlapping Chancre and Syphilitic Roseola in an Immunocompetent Patient: A Case Report

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Abstract

Background: Syphilis is a sexually transmitted infection caused by Treponema pallidum that typically progresses through primary, secondary, latent, and tertiary stages. Primary syphilis presents with a painless genital chancre, whereas secondary syphilis manifests with systemic and mucocutaneous findings. Overlapping primary and secondary syphilis is uncommon and is rarely reported in immunocompetent individuals. **Case:** A 38-year-old immunocompetent man presented with a painless penile ulcer that progressively enlarged over two months, accompanied by non-pruritic erythematous macules with whitish scaling on both palms for one month. Physical examination revealed a solitary, shallow, indurated genital ulcer with well-defined borders and palmar macules. Dermoscopy demonstrated "Biett's collarette". Serological testing showed reactive VDRL (1:32) and TPHA (1:5120), with a non-reactive HIV test. Histopathological examination of the penile ulcer revealed epidermal ulceration, dense perivascular plasma cell and lymphohistiocytic infiltration, and endarteritis obliterans, consistent with syphilitic ulcer. Urethral culture identified Neisseria gonorrhoeae, indicating concomitant gonococcal urethritis. The patient was diagnosed with overlapping primary and secondary syphilis with gonorrhea co-infection and was treated with intramuscular benzathine penicillin G, oral cefixime, and azithromycin, resulting in marked clinical improvement. **Discussion:** Persistence of the chancre beyond the expected healing period together with concurrent palmar syphilitic roseola supports stage overlap rather than sequential progression. Delayed diagnosis and coexisting gonococcal infection may have contributed to this presentation despite preserved immune status. **Conclusion:** Overlapping primary and secondary syphilis can occur in immunocompetent patients. Recognition of this atypical presentation and comprehensive clinicopathological correlation are essential to ensure accurate diagnosis and appropriate management.

Keywords : Chancre, Immunocompetent, Overlapping, Palmar, Syphilitic Roseola

Abstrak

Latar Belakang: *Sifilis adalah infeksi menular seksual yang disebabkan oleh Treponema pallidum yang biasanya berkembang melalui tahap primer, sekunder, laten, dan tersier. Sifilis primer ditandai dengan chancre genital tidak nyeri, sedangkan sifilis sekunder bermanifestasi dengan kelainan sistemik dan mukokutan. Overlapping sifilis primer dan sekunder jarang terjadi dan jarang dilaporkan pada pasien imunokompeten.* ***Kasus:*** *Seorang pria imunokompeten usia 38 tahun datang dengan ulkus penis tidak nyeri yang semakin membesar selama dua bulan, disertai makula eritematosa tidak gatal dengan skuama putih pada kedua telapak tangan selama satu bulan. Pemeriksaan fisik menunjukkan ulkus genital soliter dangkal dengan indurasi dan batas tegas serta makula pada palmar. Dermoskopi menunjukkan "Biett's collarette". Pemeriksaan serologi menunjukkan VDRL reaktif (1:32) dan TPHA reaktif (1:5120) dengan tes HIV non-reaktif. Pemeriksaan histopatologi ulkus penis menunjukkan ulserasi epidermis, infiltrasi padat sel plasma dan limfohistiosit perivaskular, serta endarteritis obliterans yang konsisten dengan ulkus sifilis. Kultur uretra mengidentifikasi Neisseria gonorrhoeae yang menunjukkan uretritis gonore koinfeksi. Pasien didiagnosis sifilis primer dan*

sekunder overlap dengan koinfeksi gonore dan diterapi dengan benzathine penicillin G intramuskular, cefixime oral, dan azithromycin, dengan perbaikan klinis bermakna. ***Diskusi:*** *Persistensi chancre melebihi waktu penyembuhan yang diharapkan bersama dengan adanya syphilitic roseola pada palmar mendukung terjadinya overlap tahap dibanding progresi berurutan. Diagnosis yang terlambat dan koinfeksi gonore mungkin berkontribusi pada presentasi ini meskipun status imun tetap baik.* ***Kesimpulan:*** *sifilis primer dan sekunder overlap dapat terjadi pada pasien imunokompeten. Pengenalan presentasi atipikal ini serta korelasi klinikopatologis yang komprehensif penting untuk memastikan diagnosis yang akurat dan tata laksana yang tepat.*

Kata kunci *: Chancre, Imunokompeten, Overlap, Palmar, Syphilitic Roseola*

I. INTRODUCTION

Syphilis is a chronic, systemic Sexually Transmitted Infection (STI) caused by the spirochete *Treponema pallidum*. Its clinical course typically progresses through four distinct stages: primary, secondary, latent, and tertiary, each with specific clinical characteristics and temporal separation. Primary syphilis usually presents with a solitary, painless, indurated ulcer (chancre) at the site of inoculation, commonly appearing 10 to 90 days post-exposure. The chancre typically heals spontaneously within 3 to 6 weeks, even without treatment.[1]

Secondary syphilis develops approximately 4 to 10 weeks after the appearance of the chancre and results from hematogenous dissemination of the organism. It is characterized by generalized non-pruritic skin rashes, particularly on the palms and soles, mucous patches, condyloma lata, and generalized lymphadenopathy. This stage may present with a wide variety of cutaneous and systemic manifestations that mimic other dermatologic and systemic diseases.[2]

While these stages are classically sequential, some patients may present with overlapping features of both primary and secondary syphilis. This rare phenomenon, known as "overlapping" primary and secondary syphilis, is defined by the simultaneous presence of a chancre-like ulcer and signs of secondary syphilis.[3] It is most commonly reported in Human Immunodeficiency Virus (HIV) positive or immunocompromised individuals, although it has also been rarely observed in immunocompetent patients. There are currently no established incidence data regarding overlapping primary and secondary syphilis, as the condition remains rarely reported. However, at least 7 case reports have been published documenting this clinical presentation. The presence of a chancre in conjunction with secondary cutaneous signs may reflect delayed healing, reinoculation, or altered host immune response.[4]

This case report discusses an immunocompetent patient who presented with an primary syphilitic ulcer and syphilitic roseola on palmar that consistent with secondary syphilis. Through this case, we aim to highlight the clinical relevance of overlapping primary and secondary syphilis and emphasize the importance of thorough evaluation to ensure accurate diagnosis and appropriate management.

II. CASE DECRIPTION

A 38-year-old unmarried man was referred to the Department of Dermatology, Venereology, and Aesthetic Medicine at Dr. M. Djamil Hospital, Padang, on April 22, 2025, with a chief complaint of a painless genital ulcer that had gradually enlarged over the preceding two months. The lesion initially appeared as a small superficial sore on the ventral aspect of the penis near the upper scrotal region. As the lesion was painless, the patient initially assumed it to be a minor abrasion and did not seek medical attention.

Approximately one week after onset, the patient self-medicated with topical gentamicin ointment obtained over the counter, applied twice daily for two weeks, without clinical improvement. One month prior to presentation, the ulcer increased in size and was accompanied by the appearance of asymptomatic reddish patches on both palms. The palmar lesions were non-pruritic, non-painful, and confined to the palmar surfaces, with no involvement of the soles or other body areas. During the same period, the patient experienced a transient warm and mildly painful sensation during urination, which resolved spontaneously without treatment.

The patient denied fever, significant weight loss, oral or anal ulcers, genital vesicles,

alopecia, visual or auditory disturbances, neurological symptoms, or prior similar lesions. There was no history of injectable drug use, blood transfusion, long-term medication use, or application of traditional medicines to the genital area. He had no known chronic medical conditions and no history of immunosuppressive disease.

Sexual history revealed unprotected genito-genital sexual intercourse with multiple female partners, including a commercial sex worker several years earlier and a new partner approximately five months before symptom onset. He denied same-sex sexual contact. There was no known history of sexually transmitted infections in his partners.

On physical examination, the patient was alert and cooperative, with stable vital signs and a normal body mass index. No generalized or regional lymphadenopathy was detected. Dermatological examination demonstrated multiple erythematous macules with whitish rough scaling on both palms.

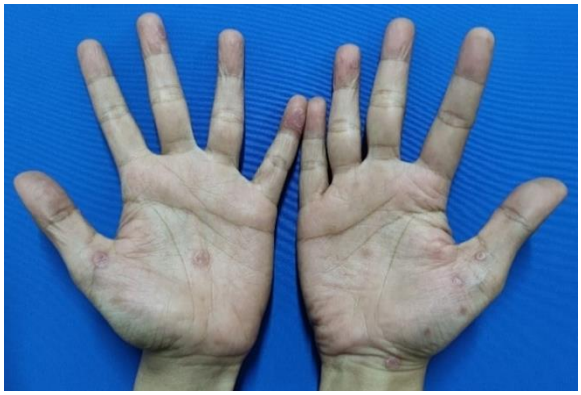


FIGURE 1. CLINICAL PRESENTATION OF THE PATIENT SHOWED ERYTHEMATOUS MACULES, WHITISH ROUGH SCALES ON BOTH OF PALMS.

Venereological examination revealed a solitary, shallow genital ulcer measuring approximately 3.5 × 2 × 0.1 cm involving the penile and adjacent scrotal region. The ulcer was painless, well demarcated, with a firm indurated margin and a clean base, with minimal bleeding on contact. A small amount of clear, non-purulent, odorless urethral discharge was noted. No vesicles, additional ulcers, or perianal lesions were observed

FIGURE 2. CLINICAL PRESENTATION OF THE PATIENT SHOWED ERYTHEMA AND SHALLOW ULCER SIZED 3,5CM X 2CM X 0,1CM ON PENILE AND SCROTAL.

Dermoscopy of the palmar lesions demonstrated "*Biett's collarette*", characterized by peripheral whitish scaling surrounding an erythematous center. Dermoscopic evaluation of the genital ulcer showed a well-defined ulcer margin. Gram staining of urethral discharge revealed intracellular gram-negative diplococci with increased polymorphonuclear leukocytes. Culture from the urethral discharge isolated *Neisseria gonorrhoeae*. Tzanck smear from the genital ulcer showed no multinucleated giant cells. Serological testing for herpes simplex virus IgM and IgG yielded negative results.

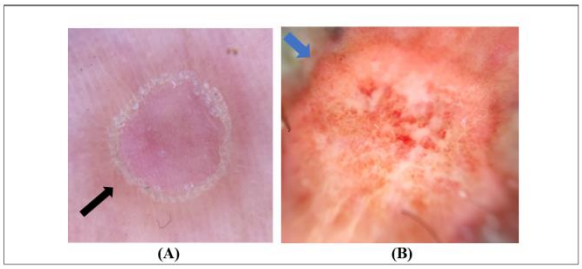


FIGURE 3. DERMOSCOPIC FINDING REVEALED (A) "BIETT'S COLLARETTE" ON PALMAR LESIONS (BLACK ARROW) AND (B) ULCERS WITH DEFINED BORDER IN PENILE (BLUE ARROW).

Routine laboratory investigations, including complete blood count, coagulation profile, and random blood glucose levels, were within normal limits. Serological testing for syphilis showed reactive Venereal Disease Research Laboratory (VDRL) test with a titer of 1:32 and reactive Treponema pallidum hemagglutination assay (TPHA) with a titer of 1:5120. Rapid HIV testing was non-reactive. Histopathological examination of a biopsy specimen from the genital ulcer revealed epidermal ulceration with dense perivascular infiltration of plasma cells and lymphohistiocytes, accompanied by endothelial swelling and endarteritis obliterans, consistent with a syphilitic ulcer.

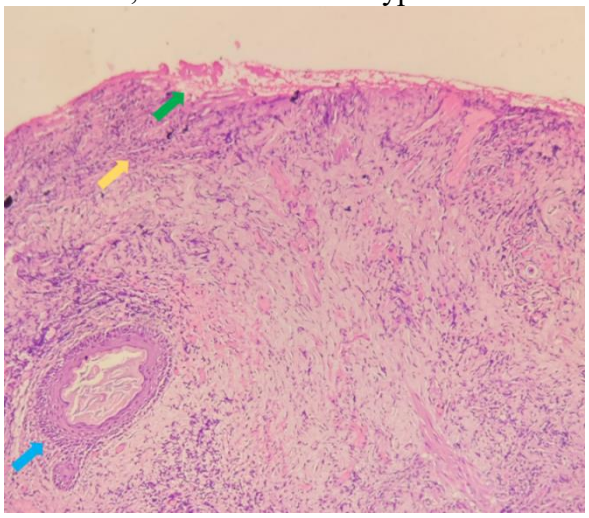
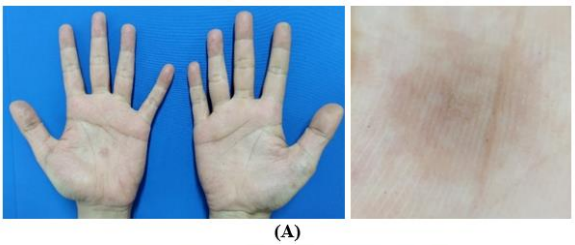


FIGURE 4. HISTOPATOLOGICAL EXAMINATION FROM PENILE ULCER REVEALED EPIDERMAL ULCERATION (GREEN ARROW), INFILTRATION OF PLASMA CELLS AND LYMPHOHISTIOCYTES (YELLOW ARROW), ALSO ENDARTERITIS OBLITERANS (BLUE ARROW).

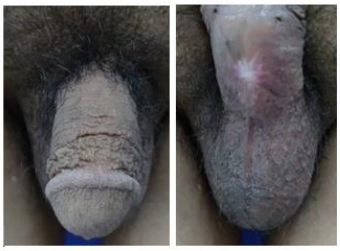
Based on the clinical findings, dermoscopic features, serological results, histopathological confirmation, and microbiological evidence, a diagnosis of overlapping primary and secondary syphilis with concomitant gonococcal urethritis was established.

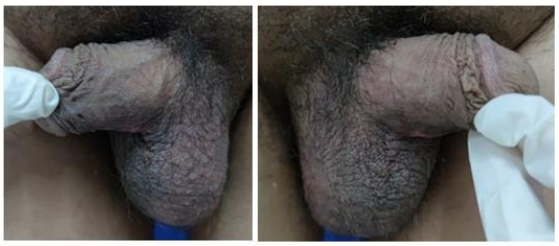
The patient was treated with a single intramuscular injection of benzathine penicillin G 2.4 million IU after a negative skin test. In addition, oral cefixime 400 mg single dose and azithromycin 1 g single dose were administered to treat gonococcal urethritis. The patient was advised to abstain from sexual activity until lesion resolution and to notify recent sexual partners for evaluation and treatment.

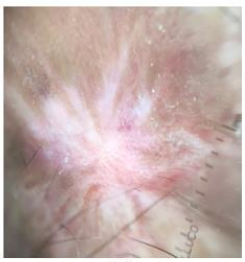
At one-month follow-up, the genital ulcer had completely healed, leaving an eutrophic scar, and no new genital lesions were observed. The palmar lesions had markedly improved, with residual faint hyperpigmented macules. Repeat microbiological examination of urethral discharge showed no pathogenic growth. Follow-up serology demonstrated a TPHA titer decline to 1:640, while the VDRL titer remained at 1:32, consistent with an early post-treatment serological response. The patient was scheduled for continued serological follow-up at 3, 6, 9, 12, and 18 months to monitor treatment response.



(A)







(B)

FIGURE 5. ON FOLLOW UP, (A) PALMAR LESION RESOLVED, AND (B) PENILE ULCER SHOW IMPROVEMENT.

III. DISCUSSION

Overlapping features of primary and secondary syphilis are rarely documented, particularly in immunocompetent individuals. The natural course of syphilis involves the appearance of a painless chancre during the primary stage, which typically resolves within three to six weeks, followed by systemic and mucocutaneous manifestations associated with the secondary stage.[5] Reports of such overlap remain scarce, with at least five published case reports describing similar presentations in HIV positif patient and two in negatif cases.[6] The case of overlapping primary and secondary syphilis in an immunocompetent patient was reported first by Mendoza et al. in 2023, involving a patient who presented with multiple erythematous, papular, and scaly plaques on the palms and soles, along with bilateral non-painful inguinal lymphadenopathy.[7] The second case was reported by Krishnaram et al. in 2024, describing a patient who presented with annular syphilide, a persistent chancre, and a chancriform ulcer.[8] This patient presented with an penile ulcer lasting over two months, alongside palmar lesions typical of secondary syphilis, and without HIV, indicating a disruption of the expected sequential progression.

The genital ulcer observed in this patient was solitary, painless, shallow, indurated, and had well-defined borders, persisting for more than two months. This clinical presentation is considered atypical for a primary syphilitic chancre, which usually heals spontaneously within three to six weeks.[9] Histopathologic examination of the ulcer demonstrated epidermal ulceration, infiltration of plasma cells and lymphohistiocytes, also endarteritis obliterans. These findings are strongly supportive of syphilitic etiology.[10] Differential diagnosis such as genital herpes, chancroid, lymphogranuloma venereum, granuloma inguinale, and Behçet disease were considered. The absence of vesicles, pain, ragged soft ulceration, bubo formation, beefy-red granulation, or recurrent mucocutaneous aphthae made these alternatives ruled out. The combination of clinical history and morphology, reactive serologic tests, also histopathologic confirmation provided sufficient evidence to establish the diagnosis of a primary syphilitic ulcer (chancre).

The presence of hyperpigmented macules with whitish scaling on both palms in this patient is consistent with syphilitic roseola, a characteristic manifestation of secondary syphilis. These lesions typically begin as non-pruritic, erythematous macules that may evolve into papulosquamous eruptions and are commonly found on the trunk, extremities, and acral areas such as the palms and soles.[11] In this case, the limited distribution to the palms may indicate early secondary stage involvement or a localized host immune response. Dermoscopic findings showed Biett's collarette, characterized by peripheral whitish scaling surrounding a hyperpigmented or erythematous center, which supports the diagnosis. These clinical and dermoscopic findings reinforce the diagnosis of syphilitic roseola and help distinguish it from other dermatoses with palmar involvement.

The presence of both chancre and syphilitic roseola in this patient suggests overlapping primary and secondary syphilis. Although this pattern is more commonly described in immunocompromised individuals, the patient was immunocompetent, with no evidence of systemic immunosuppression.[12] Psychological stress may have contributed to delayed chancre healing or altered immune response.[13] This patient reported unstable employment, financial insecurity, and dependence on his parents for daily support. The DLQI score in this patient also reflected a very large impact on quality of life. The

patient was referred to the Department of Psychiatry, but he reported being unable to attend the consultation due to lack of time.

Additionally, urethral culture identified *Neisseria gonorrhoeae*, although PCR testing was negative. This discrepancy could be due to prior antibiotic use, sampling technique, or limited PCR sensitivity. While urethritis gonorrhea does not typically cause ulceration, it may contribute to mucosal inflammation and delay healing of the chancre, potentially allowing secondary manifestations to develop concurrently.[14] Although the precise role of gonorrhea in triggering overlapping syphilis remains uncertain, it may serve as a contributing factor rather than a direct cause.

The patient responded well to standard therapy with a single intramuscular injection of benzathine penicillin G at a dose of 2.4 million IU, which remains the recommended first-line treatment for secondary syphilis according to both the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) guidelines. This regimen is aimed at eradicating *Treponema pallidum* and preventing disease progression or transmission, and no modification of the dose or frequency was required despite the overlapping presentation, as the treatment principles for primary and secondary syphilis remain the same in immunocompetent patients.[15] In addition, cefixime and azithromycin were administered to address the confirmed gonococcal urethritis, in line with current recommendations for combination therapy to reduce the risk of treatment failure and antimicrobial resistance. At one-month follow-up, the genital ulcer had healed, the palmar lesions had significantly resolved, and the TPHA titer had declined from 1:5120 to 1:640. The VDRL titer remained at 1:32, which is consistent with an early post-treatment response, as nontreponemal antibody titers generally decline more gradually over a period of 6 to 12 months following adequate therapy. This patient requires continued follow-up and repeat VDRL and TPHA testing after injection at months 3, 6, 9, 12, 18, and 24.

IV. CONCLUSION

This case highlights the importance of recognizing overlapping clinical features of primary and secondary syphilis, even in immunocompetent individuals. The presence of genital chancre along with syphilitic roseola can present diagnostic challenges and may be influenced by host immune response, psychological stress, or coexisting infections. Accurate clinical assessment, supported by serological, dermoscopic, and histopathological findings, is essential for correct staging and appropriate treatment.

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