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CASE REPORT

Otosyphilis and Malignant Syphilis in a Human Immunodeficiency Virus–Infected Patient: A Case of Bilateral Hearing Loss with Complete Recovery Following Ceftriaxone Therapy – Case Report

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Background: Syphilis is characterized by diverse manifestations, including rare complications such as otosyphilis and malignant syphilis, particularly in immunocompromised individuals.

Case Presentation: This study reported a case of a 40-year-old Human Immunodeficiency Virus (HIV)-positive male with bilateral sensorineural hearing loss (SNHL) and disseminated ulceronodular skin lesions. Serological testing confirmed active *Treponema pallidum* infection with a venereal disease research laboratory (VDRL) titer of 1:64. Dermatological results were consistent with malignant syphilis, a rare and aggressive variant of secondary syphilis. Audiological assessment showed mild bilateral SNHL, while cerebrospinal fluid analysis was insignificant. Although histopathological confirmation was not performed due to rapid clinical improvement, a presumptive diagnosis of otosyphilis was made.

Treatment and Outcome: The patient was treated with intramuscular ceftriaxone 2 grams daily for 14 days as an alternative to penicillin due to accessibility constraints and preference. This led to complete resolution of hearing loss, regression of cutaneous lesions, and a significant clinical serological response, including VDRL seroconversion at 6 months. The treatment did not produce Jarisch–Herxheimer reaction, showing good tolerance and supporting ceftriaxone effectiveness as an alternative therapy in HIV-associated syphilis.

Conclusion: This case study underscores the importance of early recognition and treatment of otosyphilis and malignant syphilis in HIV-infected individuals. Ceftriaxone may serve as an effective alternative regimen to penicillin, achieving both clinical and serological recovery. Moreover, routine screening for otologic symptoms in patient with syphilis is critical to prevent irreversible complications. The limitations include the absence of histopathology and CSF analysis conducted after therapy initiation.

Keywords: otosyphilis, malignant syphilis, HIV, sensorineural hearing loss, ceftriaxone, secondary syphilis

Introduction

Syphilis is a sexually transmitted infection (STI) caused by the spirochete *Treponema pallidum subspecies pallidum*.[1] It is transmitted primarily through direct contact with infectious lesions, typically through sexual activity comprising mucosal or epithelial surfaces. The disease progresses in well-defined stages, namely primary, secondary, latent, and tertiary, each characterized by different clinical features and separated by asymptomatic intervals.[2] Syphilis is often called "the great imitator," due to the diverse clinical presentations, as it can manifest with many symptoms ranging from localized, painless ulcers to severe, systemic damage affecting multiple organs.[3] Early stages may be overlooked due to subtle or painless lesions, while later stages may manifest as widespread rash, lymphadenopathy, or even neurologic and cardiovascular complications. Although classic secondary syphilis includes symmetrical maculopapular eruptions,

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palmoplantar effect, and mucosal patches, presentations tend to vary significantly. Tertiary manifestations may appear years after initial infection and often comprise deeper organ systems.[4] More importantly, complications such as neurosyphilis, ocular syphilis, and otosyphilis are not confined to the tertiary stage and can arise at any time during the course of infection.[1]

Globally, syphilis is considered a prevalent disease, and the incidence is associated with concurrent human immunodeficiency virus (HIV) infection.[5] Men who have sex with men (MSM) are disproportionately affected by syphilis.[4] Among the MSM population, 50% of the syphilis cases are HIV positive.[6] In general, HIV infection impairs the ability of the immune system to defend against *T. pallidum*, which increases the chance of progressing to neurosyphilis, ocular syphilis, and otosyphilis,[7] a less recognized complication known to cause irreversible sensorineural hearing loss (SNHL).[8] Diagnosis of otosyphilis is often delayed or simply missed because it can resemble a broad range of audiovestibular diseases.[5] Therefore, patient with syphilis should be routinely evaluated for otologic symptoms.[9] Diagnostic evaluation of otosyphilis is primarily clinical and based on audiological abnormalities in patients with serologically confirmed syphilis; CSF analysis may show abnormalities, but they are not present in all cases. A rare and severe variant of secondary syphilis, which manifests as multiple thickened, ulcerative, and necrotic lesions, termed malignant syphilis or ulceronodular syphilis, is also usually found in patient with HIV infection.[4] Despite the distinct pathologies, both otosyphilis and malignant syphilis share overlapping risk factors and clinical complexity in the setting of HIV.[1,4,6,7] The concurrent presentation is exceptionally rare, posing diagnostic and therapeutic challenges.[4,5,9] Diagnostic evaluation of otosyphilis is generally presumptive and relies on the presence of audiovestibular symptoms, abnormal audiometric findings, and reactive treponemal and nontreponemal serologic tests. Cerebrospinal fluid (CSF) analysis may assist in identifying concomitant neurosyphilis, although CSF parameters may remain normal in many otosyphilis cases. Malignant syphilis, on the other hand, is typically diagnosed based on characteristic ulceronodular or rupioid lesions, markedly elevated serologic titers, and rapid clinical improvement following therapy, with histopathology serving as a supportive examination when available.

The coexistence of otosyphilis and malignant syphilis in an HIV-infected patient is extremely rare and clinically significant, underscoring the synergistic effect of immunosuppression on disease severity and the diagnostic challenges in distinguishing overlapping syphilitic manifestations. Early recognition and timely initiation of appropriate therapy are essential, as otosyphilis and malignant syphilis may lead to irreversible complications, and prompt treatment can result in substantial clinical recovery as demonstrated in this case. This case provides new clinical insight by documenting a rare coexistence of otosyphilis and malignant syphilis in an HIV-infected patient successfully treated with ceftriaxone. The report focused on a case of otosyphilis in a 40-year-old HIV-infected male with bilateral hearing loss, which appeared 2 weeks ago. The condition was accompanied by multiple papules and nodules with central ulceration and crusts affecting the face, trunk, and extremities, with palmoplantar effect over the past 1 month.

Case Report

The patient was a 40-year-old male with hearing loss in both ears for the past 2 weeks, accompanied by a 1-month history of skin lesions. Physical assessment showed normal gait, coordination, and balance, but frequent repetition of verbal questions was observed, raising clinical concern for hearing loss. There was no complaint of vertigo nor tinnitus, trauma, ear pain, or discharge. The lesions initially appeared as red macules on the palms, and evolved into raised papular and nodular, darkened violaceous lesions with central ulceration and blackish crusts, surrounded by erythematous base. More lesions gradually developed on the trunk, face, genital, and all four extremities with palmoplantar effect. There was no pain or pruritus present with the skin lesions. A weeks history of fever, loss of appetite, and myalgia was confirmed, followed by the onset of skin lesions. The patient denied having any history of painless ulcer in the genital, anal, or oral region. There was no complaint of changes in speech, personality changes, seizures, headache, neck stiffness, nausea, vomiting, or blurred vision. The patient reported 9 kg of weight loss and diarrhea over the past three months and was diagnosed to have HIV the following month in a nearby hospital with a CD4 count of 247 cells/μL. Daily antiretroviral (ARV) therapy was given subsequently with a combination of tenofovir, lamivudine, and dolutegravir. However, referral was made to the Dermatology and Venereology Outpatient Clinic, Dr. Hasan Sadikin General Hospital (RSHS), Bandung, due to the concomitant appearance of hearing loss and skin lesions with a positive serologic test result for

both venereal disease research laboratory (VDRL) and *Treponema pallidum* hemagglutination assay (TPHA). The patient was married with two children, but the wife had been estranged for the past five months. The history of having unprotected sexual activity with men receptive in the last two years was admitted, with a total number of six sexual partners. On the other hand, a previous history of alcohol or narcotic consumption was denied.

Dermatological examination showed multiple disseminated erythematous-violaceous papules and nodules over the face, trunk, genital, both upper and lower extremities. Many lesions showed central crusted ulceration (Figure 1A and B). Meanwhile, neither mucosal lesion nor lymph node enlargement was found. Laboratory examination showed a reactive TPHA with s/co ratio of 25.94 using chemiluminescent immunoassay and VDRL test with a titer of 1:64. Therefore, the diagnosis of secondary syphilis manifesting as malignant syphilis was established. Given the patient subjective hearing loss, an otolaryngology consultation and an audiology diagnostic evaluation were completed. Both ear canals and tympanic membranes were intact, and no mastoid tenderness was found.

Pure tone audiometry showed mild bilateral SNHL of 35.2 dB on the right side and 35 dB on the left side (Figure 2). This abnormal audiometry with a reactive serological test shows otosyphilis. A lumbar puncture (LP) was initially planned to be performed before therapy. However, due to a busy work schedule, the patient was only able to return the following week for the LP procedure. To prevent further progression of the disease, therapy was initiated regardless of IM injection of ceftriaxone 2 grams daily for 14 days. On day 7 of therapy, the LP was performed with unremarkable cerebrospinal fluid (CSF) results, including nonreactive VDRL and normal white blood cell count and protein level.

After one month of therapy, the disseminated skin lesions had regressed, leaving post-inflammatory hyperpigmentation (Figure 3). VDRL titer was reduced to 1:32, and repeat audiometry evaluation a month after initial presentation showed normal hearing of both ears (Figure 4). On the third month of observation, VDRL titer was reduced to 1:2, and finally reached seroconversion on the sixth month.

Discussion

Syphilis is recognized as a major global health threat, with approximately 7.1 million new cases reported in 2020.[10] Presently, determining the true incidence or prevalence of hearing loss or vestibular symptoms presenting with syphilis is difficult.[2] In a study of 289 patient with syphilis from the early penicillin era, audiometric tests showed hearing abnormalities in 102 patient (35%), with 17% having early latent syphilis, 25% having late latent syphilis, and 59% having neurosyphilis.[11] Another report of 26 patient with secondary or early latent syphilis who had normal neurological examinations showed abnormal auditory brainstem responses (ABR) in 7 patient (27%).[12] On the other hand, a more recent review of 573 patient with syphilis in King County found that only 3.9% reported hearing loss and 2.7% experienced tinnitus.[13]

In general, syphilis has the capacity to affect multiple organ systems, including the central nervous system and auditory pathways, leading to complications such as neurosyphilis and otosyphilis.[7] After entering the body through epithelial disruptions, T. pallidum disseminates hematogenously and can evade host defenses, persisting in tissues and leading to chronic inflammation. In otosyphilis, the pathogen may target the vestibulocochlear nerve or inner ear structures either directly or through CSF transmission. One proposed mechanism is direct invasion of the inner ear, specifically the perilymphatic space, where localized inflammation may cause progressive SNHL or vertigo. In these kinds of cases, CSF studies may appear normal. Alternatively, the organism may reach the inner ear through CSF pathways such as the cochlear aqueduct, in which case abnormalities in CSF-like elevated protein or positive VDRL may be detected. These varying routes of pathogenesis complicate the clinical evaluation and underscore the importance of early diagnostic consideration.[2,14]

Otosyphilis can develop at any stage of the infection and independently of other manifestations.[14] However, otologic symptoms are reported to frequently appear with indications of early syphilis, as commonly observed in patient coinfected with HIV.[1] In 2018, Theeuwen et al[1] described the clinical characteristics of 12 otosyphilis patient in the United States, where 1 (8%) presented with primary syphilis, 9 (75%) with secondary syphilis, and 2 (17%) were in the early latent stage. All patients had reactive syphilis serology ranging from 1:64 to 1:1024 at the time of otologic evaluation. Symptoms of otosyphilis may include hearing loss in one or both ears, tinnitus, or vestibular abnormalities, such as vertigo, imbalance, and gait instability. According to a retrospective study of 85 cases in 2007 by Yimtae et al[15]

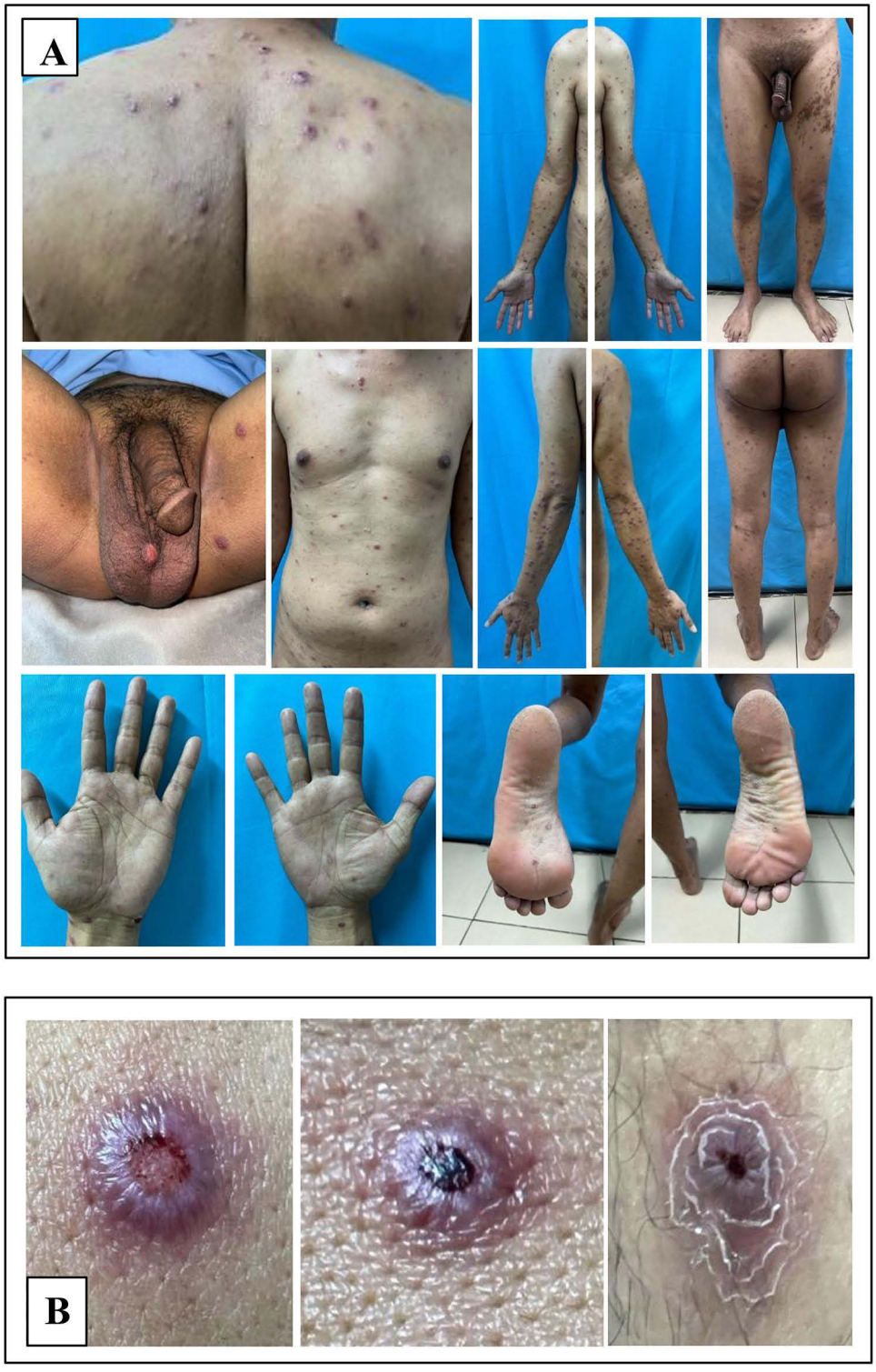

Figure 1 (**A**) Multiple disseminated erythematous-violaceous papules and nodules spread over the face, trunk, genital, upper and lower extremities. (**B**) Morphology of lesions showing darkened violaceous nodule with central ulceration and blackish crust, surrounded by erythematous base.

in Thailand, the most common presenting symptoms were hearing loss (90.6%), tinnitus (72.9%), and vertigo (52.9%). The most frequent otologic manifestation assessed by audiometry includes sudden, bilateral, asymmetric, mild or moderate, high-frequency SNHL.[1] Audiometric evaluation is commonly used for screening hearing loss and monitoring of hearing function, including in otosyphilis.[16,17] Various other simple methods that can be used to screen hearing loss

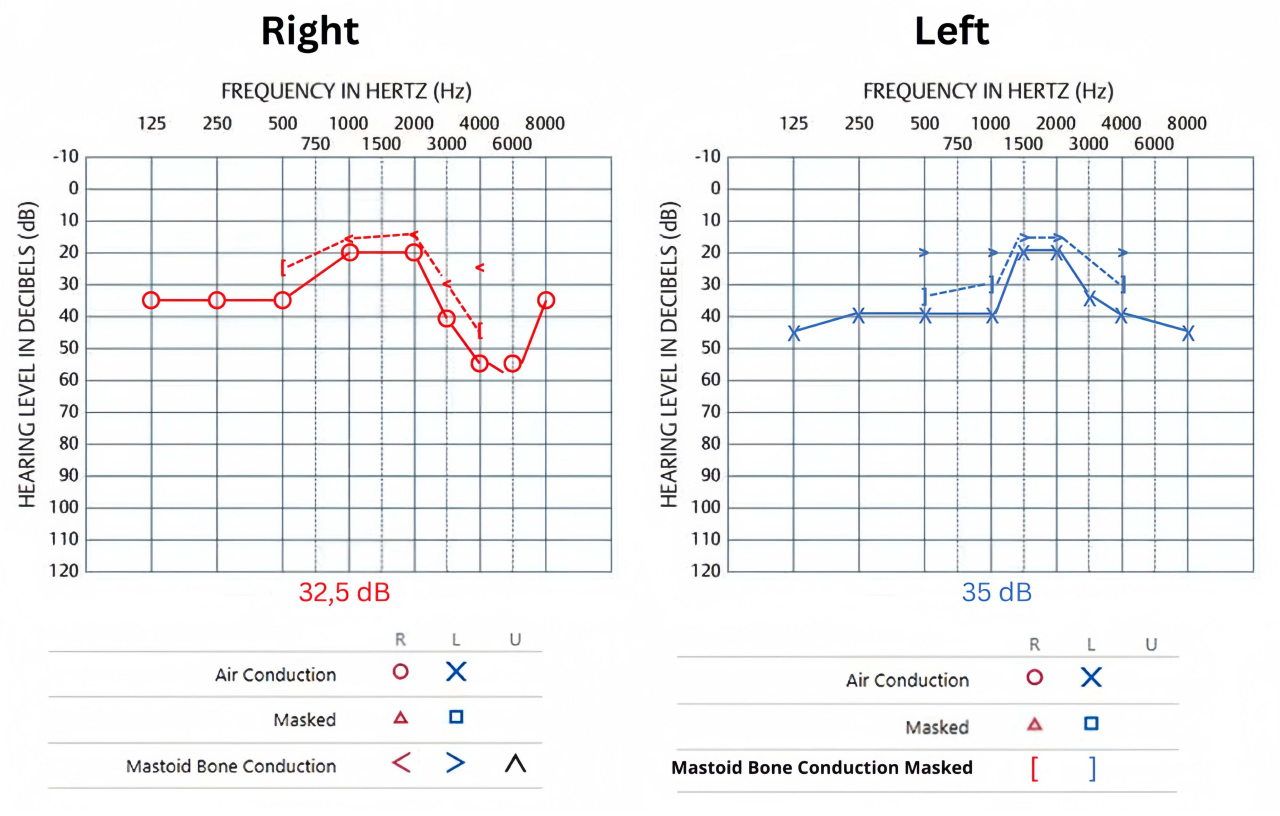

Figure 2 Pure-tone audiograms showing air (red O = right, blue X = left) and bone conduction (< = right, > = left) thresholds across frequencies (250–8000 Hz), with the y-axis representing hearing levels in dB HL (lower values showing better hearing), showed mild bilateral SNHL (26–40 dB) on initial examination.

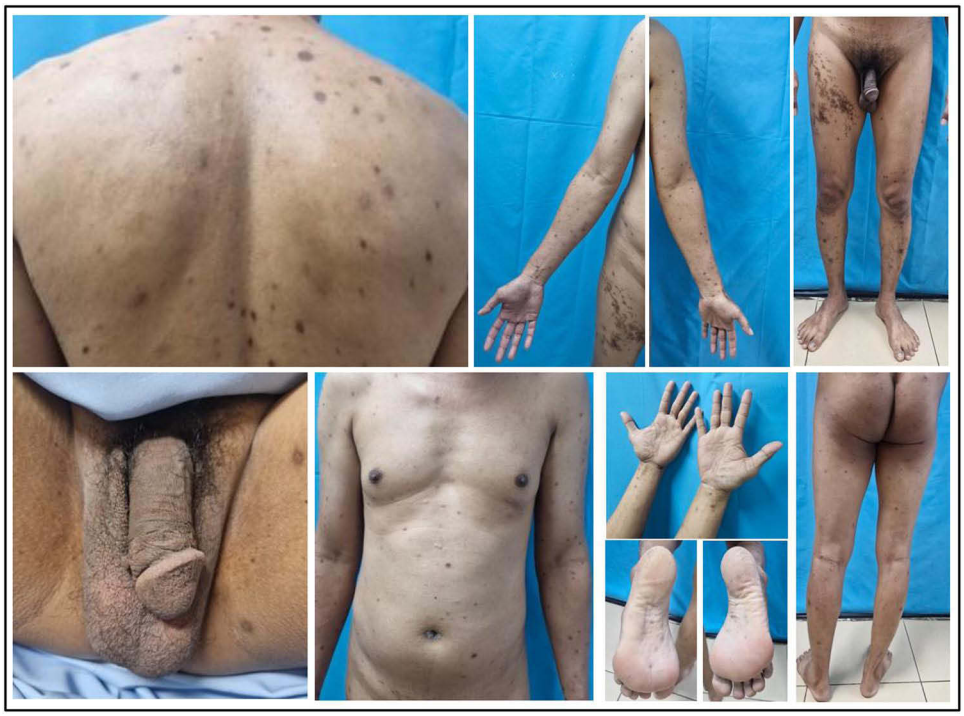

Figure 3 Skin manifestations one month after therapy showing post-inflammatory hyperpigmentation with no appearance of new lesions.

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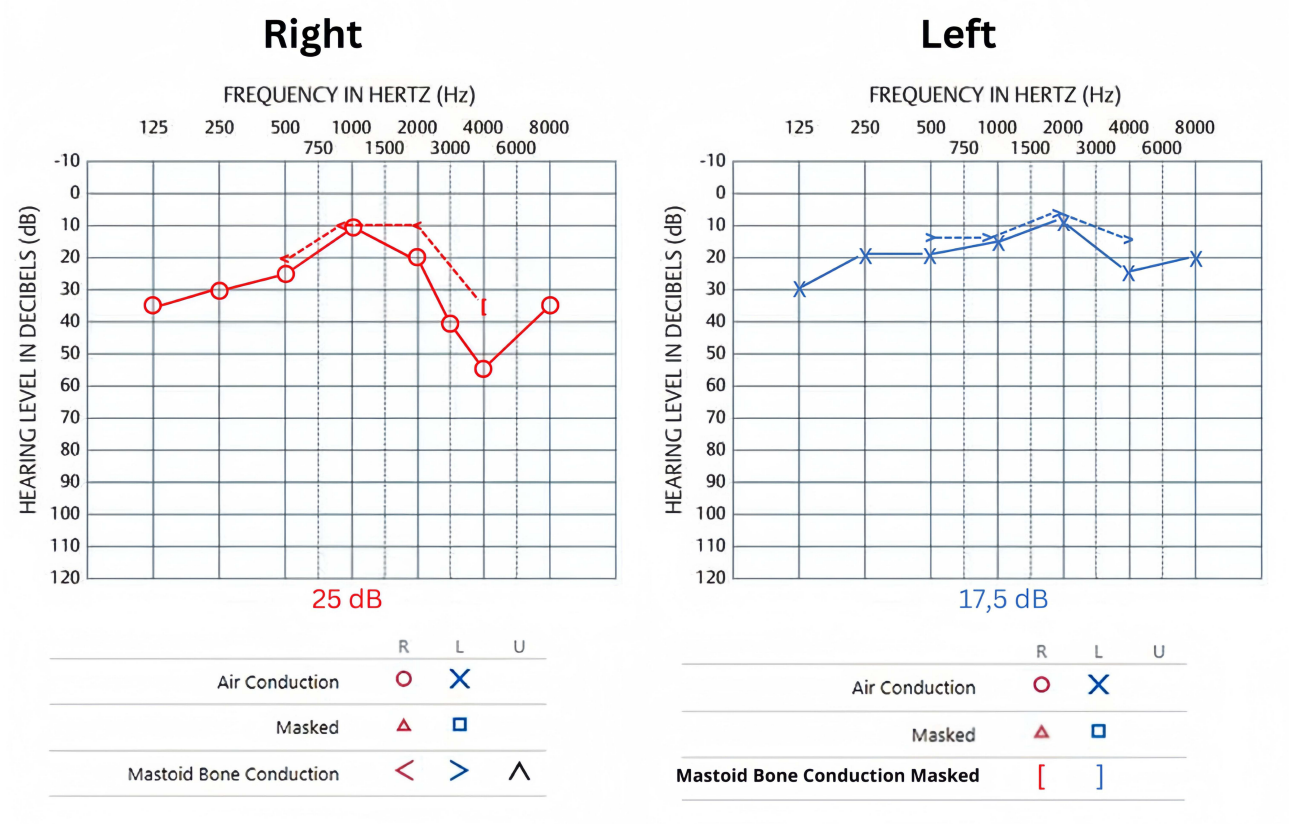

Figure 4 Pure-tone audiograms one month after treatment showed normal hearing function (0–25 dB).

include the whispered voice and the watch test.[18,19] The use of tuning fork test is also encouraged for physicians in cases of acute hearing loss.[20] Changes associated with otosyphilis often persist for weeks to decades before diagnosis.[14] The patient in this case was in the secondary stage of syphilis, as evidenced by a VDRL titer of 1:64, presenting with both malignant syphilis and bilateral hearing loss over the past 2 weeks before consultation. There were no reports of tinnitus, imbalance, or vertigo.

Diagnosing otosyphilis may prove quite difficult due to the wide differential diagnoses for SNHL, including noise-induced injury, presbycusis, medication toxicity, and systemic inflammatory conditions, such as infection.[14] Accurate and timely diagnosis of otosyphilis in patient concurrently infected with HIV is challenging. According to Lam et al[21] in 2023, CD4 cells between 200 and 349 had the highest risk of otosyphilis. Severe impairment in cell-mediated immunity caused by HIV can facilitate the acceleration of the systemic spread of syphilis, while simultaneously creating opportunities for other infections, including aseptic meningitis, cytomegalovirus, and hepatitis B infection, which potentially lead to hearing loss.[5]

In a patient with syphilis alongside tinnitus, hearing loss, or vestibular symptoms, the recommended diagnosis includes prompt audiologic testing and evaluation by otolaryngologists. The CDC recommends that all patient with otosyphilis receive LP to establish whether there are concomitant CSF abnormalities.[22] However, coordinating the LP should not delay initiating treatment, and positive CSF VDRL is not always required to establish the diagnosis of otosyphilis, given the low sensitivity (<10%) of the test.[2,23] Otosyphilis may also present with or without a diagnosis of neurosyphilis. CSF results in neurosyphilis include elevated WBC, elevated protein, and positive CSF VDRL.[9] Theeuwen et al[1] reported 67% of otosyphilis with positive CSF results, while only 5.6% was reported by Yimtae et al.[15] Definite diagnosis of otosyphilis cannot be practically confirmed by a treponemal test of inner ear fluid or histologic examination of temporal bone.[15] Therefore, otosyphilis is usually a presumptive diagnosis based on identifying audiometric abnormalities in patient with current or recent syphilis, as shown by clinical symptoms and confirmed through

treponemal and nontreponemal serologic tests, with exclusion of other diagnoses.[17] In this case, hearing loss was accompanied by the manifestation of skin lesions suggesting secondary syphilis, which prompted immediate consideration of otosyphilis in the diagnosis, despite the negative CSF result. Although LP was performed after 7 days of antibiotic administration, the possibility of false-negative VDRL should be excluded because VDRL usually becomes nonreactive over 6–12 months after therapy.[24]

Due to the rarity, treatment guidelines are based on results from case series and reports. Syphilis affecting sensory organs, such as the ear and eye, should be treated similarly to neurosyphilis, with a course of intravenous (IV) aqueous crystalline penicillin G 18–24 million units per day, administered as 3–4 million units every 4 hours or continuous infusion for 10 to 14 days. When compliance is ensured, an alternative regimen includes procaine penicillin G 2.4 million units IM once daily combined with probenecid 500 mg orally 4 times per day, both for 10–14 days.[22] Aqueous crystalline penicillin G is time-consuming, labor-intensive, and expensive, frequently necessitating inpatient care or the use of a peripherally inserted central catheter for outpatient antibiotic administration. Coordinating these treatments can be challenging in rural areas with limited access to specialists and hospitals. The treatments may also be linked to complications, such as catheter-related upper extremity venous thrombosis.[2] Some experts suggested that penicillin treatment primarily aims to inhibit disease progression rather than fully restore hearing ability. However, otosyphilis can be effectively treated when diagnosed early. Alternative antimicrobial treatments include ceftriaxone 2 grams daily either intramuscularly or intravenously for a duration of 14 days, and oral doxycycline at 400 mg per day for 21 days.[17,25] Ceftriaxone is active against *T. pallidum*, has intermediate diffusion rates in CSF, and can be administered once daily intramuscularly, thereby reducing the duration of hospitalization and serving as an option for outpatient parenteral antimicrobial therapy.[26] Systemic steroids have been used as an adjunct treatment for otosyphilis to reduce inflammation and prevent a Jarisch-Herxheimer (JHR) reaction, with some reports suggesting improvements in hearing. However, controlled studies have not confirmed the effectiveness.[2,14] Common steroid regimens for treatment include prednisone or prednisolone at doses of 0.5–1 mg/kg/day, administered orally or intravenously and gradually tapered over 1–2 months. Despite the effectiveness, many case reports lack specific information regarding the type, dosage, and tapering schedule of the steroids, with considerable variation in treatment duration and tapering patterns.[2] Therefore, current treatment guidelines do not recommend systemic steroids as a supplementary therapy for otosyphilis due to the limited evidence supporting efficacy.[22] The patient in this case was treated with IM injection of ceftriaxone 2 grams daily for 14 days, which resulted in significant clinical improvement of hearing loss.

Given that otosyphilis is a serious complication of syphilis,[27] patient should be screened routinely for hearing loss, and those with new, sudden, or fluctuating SNHL are recommended for syphilis evaluation.[2] Current guidelines for screening of otosyphilis suggest inquiring about symptoms, such as hearing loss, tinnitus, or gait imbalance.[22] Although some patient experience improved hearing following treatment for otosyphilis, others do not return to baseline hearing levels. The reasons for persistent hearing deficits are unclear and may include delays in treatment, insufficient treatment, irreversible damage, or diagnostic inaccuracies.[2] In 2012, Bradshaw et al[28] reported that 40% of 7 otosyphilis patient in the United Kingdom have improved or stabilized hearing with treatment. Patient with longer duration of hearing loss are less probable to benefit from treatment and more prone to disease progression. In late disease, the cochleovestibular system may suffer irreversible damage, underscoring the importance of early otosyphilis diagnosis.[2] Therefore, post-treatment follow-up should include clinical evaluations, assessments of audiometric improvement, and serological responses, which is a fourfold reduction in nontreponemal serologic titers up to 12 months for primary, secondary, or early latent syphilis and 24 months for late latent disease.[17] In this case, audiometry was repeated a month after therapy showed a return of normal hearing. VDRL titer had reduced two-fold, from the initial titer of 1:64 to 1:32 over the course of 1 month. Seroconversion was reached over the course of 6 months after therapy.

As stated previously, SNHL has been reported in secondary syphilis.[1,28] The classic rash of secondary syphilis consists of painless, macular, reddish or copper-colored lesions on the palms or soles, but can be extremely variable.[29] Malignant syphilis is a rare manifestation of secondary class, which primarily occurs in immunocompromised individuals, particularly those who are coinfected with HIV. Among 45 reported cases, 33 (73%) occurred in HIV-positive individuals, with the majority having CD4 counts <500 cells/mm^3. The pathogenesis of malignant syphilis is unknown, but it is generally believed that immunosuppression due to HIV coinfection enables T. pallidum to become more virulent.

The most common presentation of malignant syphilis is ulceronodular cutaneous lesions with central adherent crust. The skin lesions mainly affect the trunk and extremities, although the face, scalp, mucous membranes, palms, and soles can also be affected.[30] According to a study in Indonesia by Wibisono et al[30] in 2021, malignant syphilis cases predominantly occur in men (84%), with the 40–44 years old age group being the most frequently affected. Fisher et al[31] defined the classical diagnostic criteria for MS as follows: the presence of compatible macroscopic and microscopic skin lesions, high serology titers, the occurrence of a JHR reaction upon initiating antibiotic therapy, and a rapid clinical improvement with treatment. However, high serologic titer and rapid response to therapy were not clearly defined, and JHR was reported in only 24% of cases.[4] Histopathological evaluation typically shows nonspecific features, but tissue specimens may show a lichenoid interface dermatitis, a dense perivascular and interstitial infiltrate rich in plasma cells, lymphocytes, and histiocytes, along with vascular abnormalities including endothelial proliferation, thrombotic vasculopathy, and endarteritis obliterans.[32] There are currently no specific treatment guidelines for malignant syphilis. The most frequently used treatment regimen is the same as for late latent syphilis, which includes three consecutive weekly IM injections of benzathine penicillin 2.4 million units per dose.[30] Treatment using ceftriaxone 2 grams per day for 14 days was also reported to be effective for malignant syphilis.[33,34] The associated complications include ocular involvement, such as uveitis and keratitis, and neurosyphilis.[4] In an analysis of 135 cases in China between 2008 and 2018, Zhu et al[35] reported that a higher proportion of patient with malignant syphilis present with concurrent neurosyphilis (30%) compared to secondary syphilis without manifestation. The coexistence of otosyphilis and malignant syphilis in this immunocompromised patient may reflect the synergistic impact of HIV-related immune dysregulation, in which impaired cell-mediated immunity facilitates widespread Treponema pallidum dissemination and the simultaneous role of multiple organ systems.[1,2,4] In this case, the manifestation of skin lesions was consistent with malignant syphilis. The associated complication of malignant syphilis in the patient was otosyphilis. The HIV status was also positive with a CD4 count of 247 cells/μL. However, histopathological examination was not conducted because of rapid improvement after receiving ceftriaxone, which occurred before the scheduled biopsy.

The interaction between syphilis and HIV is considered bidirectional. Studies confirmed that syphilis could facilitate the transmission and acquisition of HIV by increasing shedding, replication, and viral diversity, while also making individuals more susceptible by mucosal disruption, immune changes in the genital area, and alteration in the microenvironment. Conversely, HIV can alter the manifestations of syphilis and blur the distinction between the stages.[7] Immune status of the host determines the pathogenesis and course of syphilis through the various stages. A strong delayed-type hypersensitivity response, mediated by CD4 cells, is essential for control of syphilis. Meanwhile, humoral immunity and CD8 cytotoxic T cells are ineffective in clearing the infection and preventing the progression. In delayed-type hypersensitivity, a growing number of antigen-specific CD4 cells release Th1 cytokines that recruit and activate macrophages at the site of infection, resulting in phagocytosis and pathogen killing. Continuous localized exposure to the antigen leads to excessive inflammation, characterized by plasma cell infiltration, granuloma formation, and tissue damage. In HIV patient, CD4 T cell depletion results in increased tissue infiltration and activation of cytotoxic T cells and neutrophils.[4] Individuals with both HIV and syphilis also face a higher risk of treatment failure and the development of neurosyphilis.[7] The burden of HIV, syphilis, and co-infection is disproportionately high among high-risk populations, specifically among MSM. In Southeast Asia, the overall prevalence of HIV and syphilis is 7.38% and 10.65%, respectively. A significant portion of the MSM population engages in high-risk behaviors, including having multiple male sexual partners (casual, regular, or paid) as well as inconsistent condom use with both male and female partners, which contributes to a heightened risk of HIV transmission and infection.[6] In 2020, the population of MSM in Indonesia was 811.129, with a prevalence of 5.3% testing positive for serological treponemal and nontreponemal tests.[36] The patient in this case admitted having multiple male sexual partners receptively without using any condom, which consequently led to the diagnosis of both HIV and syphilis, manifesting as otosyphilis and malignant syphilis.

Limitations

This case has several limitations, first, histopathological confirmation was not obtained due to the rapid clinical improvement before the scheduled biopsy. In addition, the lumbar puncture was performed after antibiotic administration, potentially affecting the CSF results. The follow-up period was limited to six months, which may not fully capture the

potential for late relapse or long-term sequelae. However, the consistent serological response and sustained clinical improvement during follow-up support the validity of the reported outcome.

Conclusion

In conclusion, this case shows the atypical and severe manifestations of syphilis in the context of HIV co-infection, including malignant syphilis and otosyphilis. Prompt recognition and timely treatment are essential to prevent irreversible complications such as permanent hearing loss. Intramuscular ceftriaxone proved to be an effective alternative to penicillin, leading to complete clinical and serological resolution. As a recommendation, dermatologists should maintain a high index of suspicion for otosyphilis in HIV-infected patient presenting with hearing loss, even in the absence of neurological symptoms, and routinely evaluate for dermatological signs of malignant syphilis. Early diagnosis and appropriate therapy can lead to favorable outcomes in these complex co-infected cases. In addition, long-term follow-up is recommended to monitor for potential relapse or late sequelae.

Ethical Approval

This study was conducted in compliance with the Declaration of Helsinki, Good Clinical Practices, local regulatory requirements and was approved by the Medical Ethics Committee of Hasan Sadikin General Hospital Bandung (approval number DP.04.03/D.XIV.6.5/227/2025).

Consent Statement

The authors certify that they have obtained all appropriate patient consent forms. The patient signed a consent form to publish the case details and images.

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Disclosure

The authors declare that there are no conflicts of interest in this work.

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