Leprosy, Syphilis, and Human Immunodeficiency Virus Coinfection: A Case Report

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Abstract: Coinfection between leprosy, syphilis and HIV is very rare, and this association remains unclear. We report 55 years old man from Bantul, Indonesia, who present almost all over the body covered with erytematous patches and plaques in various sizes, multiple, discrete with ulnaris nerve enlargement. This patient was diagnosed as BL leprosy, secondary syphilis and HIV infection. Laboratory investigation showed Bacterial Index 3+ and Morphological Index 43.75%, positive TPHA, VDRL 1/32, and HIV reactive with CD4 count 4. Histologic finding demonstrated as acute viral exanthem. We treated this patient with WHO-multidrug therapy regimen for MB leprosy, benzathin penicillin 2.4 million unit IM single dose, and triple FDC (tenofovir, hiviral, and efavirenz) once a day. A month after therapy, VDRL was surprisingly increasing to 1/256 in titer. Hence, we re-treated him with benzatin penicillin 2,4 million unit once a week for 3 consecutive weeks. We conclude that coinfection between these three diseases make the clinical manifestation and histological become atypical, and it amay influence each other. Treatment of these diseases combination was the same as the disease separately.

1 INTRODUCTION

Leprosy is a chronic infection of the skin and peripheral nerves by *Mycobacterium leprae* (*M. leprae*). The clinical spectrum of leprosy depends on specific host immunity. Patients with tuberculoid leprosy have good cell-mediated immune responses to *M. leprae*, whereas those with lepromatous disease do not have cell-mediated immune responses but rather produce high titres of *M leprae*-specific antibodies (Britton,2004) (Ustianowski,2006).

Syphilis and human immunodeficiency virus (HIV) are both transmitted sexually and so it is not surprising that a substantial number of people are infected with both agents. HIV has several effects on the presentation, diagnosis, disease progression, and therapy of syphilis (Lynn,2004)(Stevenson,2006). The interaction between syphilis and HIV infection is complex and remains incompletely understood, despite there being more than 2 decades of clinical experience with coinfected patients (Stevenson,2006).

Prevalence rates of HIV infected persons are also increasing in many countries where leprosy is endemic. Although the number of coinfected patients has not been estimated, the increasing geographic overlap of these two diseases will result in increasing number of individuals being dually infected (Ustianowski,2006). Meanwhile, there are few number of case reports of leprosy that association with HIV (T.S. Chandra Gupta, 2007). Furthermore, the long incubation period and low incidence of leprosy make it hardly to do studies about coinfection leprosy and HIV (Ustianowski,2006).

Clinical manifestasion of leprosy present with skin lesion from hypopigmented to nodular lesion and nerve damage (Ustianowski,2006). Likewise syphilis, the skin lesion can form ulceration, maculopapullar, to nodular (lynn,2004). Patients with HIV often have several simultaneous or sequential cutaneous conditions. In general, noninfectious cutaneous abnormalities are not prognostic of rapid progression of immunosuppression, but it might be specific markers of the stage of HIV disease (Maurer,1998). All of them can resembling other diseases and lead misstaken and delayed diagnosed for the clinician.

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Coinfection between leprosy, syphilis and HIV are very rare, and their correlation remain unclear. This report is to present a man of 55 years of age diagnosed of leprosy with laten syphilis and HIV. Hopefully, this paper may remind clinicians the possible co-incidence between these infectious diseases.

2 CASE

A 55 years old man, lived in Bantul, visited outpatient clinic of dermatology and venerology, Dr. Sardjito General Hospital with reddish spot in almost all over the body. The history of present illnes had started from 2 months before admitted the clinic with reddish spots on the face and scalp, which gradually extended to the whole body. No itch nor pain were reported. He had seen dermatologist, and treated as allergy, but no improvement. He was then refered to our hospital. He frequently applied hair dyes, and various cosmetics. Beside his wife, he had multisexual-partners of three other men. , with last sexual activity was 6 month ago with wife. According to patient confession, he was forced for sexual intercourse with three man 5 years ago, then after that he never had sex except with his wife. He also reported that he travelled alot due to his profession. No history of diabetes mellitus, hypertension, nor were reported

Dermatological status demonstrated erytematous patches and plaques in various sizes, multiple, discret distributed all over the body (Fig. 1-3). There was enlargement of both ulnar nerves but no sensitibility impairment in lesions, and nor motoric and sensoric nerve impairment. The differential diagnosis were made Morbus Hansen-Multi Bacillary (MH-MB) BL/ LL type, Secondary Syphilis, HIV/AIDS, and Allergic Contact Dermatitis (ACD).

Laboratory examinations showed bacterial index (BI) 3+ and morphological index (MI) 43.75%, treponema palidum haemaglutination (TPHA) positif, venereal disease research laboratory (VDRL) 1/32, HIV rapid test positive, and enzym linked fluouroscent assay (ELFA) test for HIV was 23.31 (normal range <0.25) with CD4 only 4. Biopsy from right upper arm lesion demonstrated histologially as acute viral exanthem (Fig.4).

Working diagnosis in this case were MH MB type BL/LL, latent syphilis, and HIV. We treated him with MDT-MB regimen, intramuscular injection of benzatin penicillin 2.4 million units in single dose, and triple Fixed Drugs Combination (FDC) (tenofovir 300mg, hiviral 300mg, and efavirenz 600mg) once a day.

After a month, the skin manifestations were improved leaving only hyperpigmentation in almost all over the body. However, VDRL titer was even higher which was 1/256. And the AFB smear were +3 for BI and 20% MI. So, unresponsive diagnosis of syphilis was made. Benzatin penicillin 2.4 million units injection once a week in consecutive 3 weeks was performed.. A month followed up showed that VDRL titer was decreasing to 1/32.

3 DISCUSSION

Diagnosis for leprosy is made when one or more cardinal sign are present, i.e hypopigmented or reddish skin lesions with definite loss of sensation, involvement (thickened) of the peripheral nerve, and skin smear positif for acid fast bacilli (Britton,2004) (ILA Technical Forum,2002). According to the immunity, Ridley and Jopling clasifies the leprosy as follows; indeterminate (I), tuberculoid tuberculoid (TT), borderline tuberculoid (BT), borderline borderline (BB), borderline lepromatous (BL), and lepromatous leprosy (LL).[8] Which is tuberculoid pole can be associated with rapid and severe nerve damage, whereas lepromatous pole is associated with chronicity and long-term complications. Borderline disease is unstable and can be complicated by reactions (Britton, 2004).

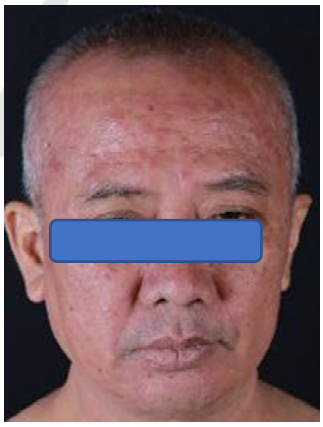

Figure 1. patches-plaques on the face

Figure 2. patches on the palm

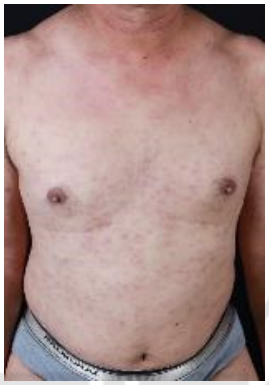

Figure 3. patches-plaques on the trunk

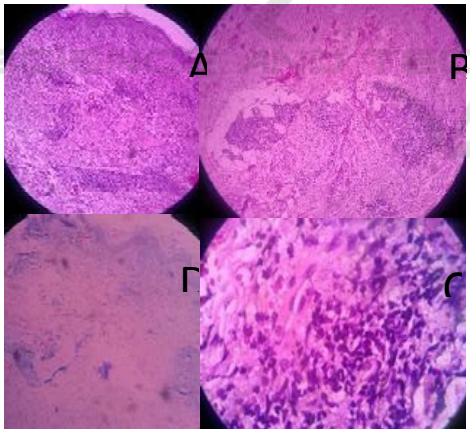

Figure 4. A. HE staining 40x. B. HE staining 100x. C. HE staining 400x. D. FF staining.

In this case, two cardinal sign was appear, i.e thickened of the ulnaris nerve, and skin smear for acid fast bacilli was positf 3 for BI and 43.75% for MI. And there was no sensoric or motoric nerve impairment. Even though histopathology examination result was not suitable for leprosy. This might be because the biopsy sample in the upper right arm is a lesion from other diseases in this patient. From this finding, we diagnosed the patient as leprosy.

Syphilis is diagnosed using serological test, with treponemal and non treponemal test. In majority, this serological test can be accurately to diagnose syphilis. However, direct testing methods, such as dark-field microscopic examination, direct fluorescent antibody-treponema pallidum (DFA-TP), and polymerase chain reaction (PCR), should be considered when the diagnosis of syphilis cannot be confirmed (Stevenson,2006). In this case, serological test with TPHA was positive, and VDRL was positif with 1/32 in titer. With the manifestasion rash almost all over the body and also found in palms and soles, at the beginning we diagnosed with secondary syphilis. But as the histopathology result did not demonstrate skin lesion of syphilis, hence, latent syphilis was considered. This was also supported by the fact he might get the syphilis was around 5 years ago, and that a month after treatment with benzathin penicilin, the titer of VDRL was increasing to 1/256 in titer.

Human immunodefiency virus were diagnosed using rapid test with immunochromatographic (ICT) and ELFA, which is the result was positif. With the sensitivity 100% and specificity 98% for ELFA, we can confirm the diagnosis for HIV (Ortiz,1996). In this case, rapid test using ICT was done,with the result was positive. Then we confirmed the result with ELFA, and the result was positif. So, we diagnosed this patient as HIV infection.

The therapy for leprosy with syphilis and HIV coinfection is still the same with leprosy without coinfection. HIV infection might affect the efficacy of multidrug therapy for leprosy, with HIV-positive patients potentially taking longer to clear mycobacteria from lesions or experiencing a higher relapse rate, but some published data suggest that leprosy-HIV coinfected patients respond equally well to multidrug therapy without the need for prolonged treatment.[1] relapses are rare after multidrug therapy, being about 1 per 1000 person-years for tuberculoid patients and 0–20.4 per 1000 person-years for multibacillary patients (Britton,2004)(Ustianowski,2006).

Penicillin remains the main therapy for all stages and sites of syphilis and in all patient groups (Lynn,2004)(US Centers for Disease Control and Prevention,2002). the difference from syphilis patients with and without HIV are in early phase of the disease (< 2 years), where are patients without HIV are treated with intramuscular benzatin penicillin 2,4 million units in single dose. In coinfetion with HIV, early disease can be treated

same as with non-HIV patient, but some clinician recommend 3 dose at weekly interval (US Centers for Disease Control and Prevention,2002).

4 CONCLUSION

We reported a case of 55 years old man with BL/ LL leprosy, with latent syphilis, and HIV infection. The skin manifestation and histopathological were atypical, but these were supported by the laboratory examinations which were acid fast bacilli, serological test for syphilis and HIV serology. From this case, we demonstrate that coinfection between these three diseases is apparently possible, make the clinical and histological features may be atypical, as interactions each other between them. . In general, the therapy is the same as the disease was separately.

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