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Case Series

Concomitant primary and secondary syphilis: a case series from a reference center in Mexico

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ABSTRACT

Primary syphilis is characterized by the presence of a chancre and secondary syphilis by the presence of syphilis. The presence of chancres within secondary syphilis have been reported, however, this form of presentation is rare. Patients with synchronous diagnosis of primary and secondary syphilis were included. They underwent a reverse sequence algorithm for syphilis diagnosis with a rapid syphilis test, if positive, a rapid plasma reagin (RPR) or venereal disease research laboratory (VDRL) tests were performed. A total of 15 patients were included. All were men. In primary syphilis, penile chancre predominated in 13 patients (86.6%), and one (6.7%) was in the tongue. In secondary syphilis syphilitic roseola was the most common type of presentation in 10 patients (66.6%), followed by the palmoplantar plaques in 6 patients (40%) and condyloma lata in 2 patients (13.3%). One patient presented alopecia in a "moth-eaten" pattern and this presentation coexisted with a condyloma lata and the palmoplantar plaques. Other patient presented with syphilitic roseola, palmoplantar plaques and condyloma lata. Clinical presentation as coexistent primary-secondary syphilis will become more frequent. First contact physicians and dermatologists would have to take more in consideration infrequent and atypical clinical forms of this disease.

Keywords: Syphilis, Chancre, HIV, VDRL, Condyloma lata, Mexico

INTRODUCTION

Syphilis is a bacterial sexually transmitted infection caused by *Treponema pallidum*. It is estimated that 6 million cases are diagnosed each year around the globe.[1] Most cases occur within low and middle income countries, however, there has been an increase in Western Europe and the USA, especially in men who have sex with men (MSM).[2] In the USA more than 15-20% of the patients diagnosed each year have history of a prior diagnosis.[3] In this country the incidence tripled from 2.1 cases per 100,000 population in 2000 and 2001 to 8.7 cases per 100,000 in 2016.[4] In Mexico the reported incidence is 0.67 cases per 100,000 population.[5]

The HIV infection is highly associated with syphilis, as syphilitic ulcers provide a portal of entry due to their dense lymphocyte infiltrate. In the USA it has been reported that 40% of the patients diagnosed with early syphilis had concomitant HIV infection.[6] MSM constitute a high risk group, as condomless sexual practices have become more frequent with the introduction of the pre-exposure prophylaxis (PrEP).7 The use of dating apps aids to easily find multiple sexual partners without too much effort within same area, this activity also increase the risk of acquiring other sexual transmitted diseases.[8]

Syphilis is known to present different stages; each one is characterized by determined clinical manifestations.

When they occur within the first 12 months after the inoculation, they are labeled as early syphilis, and if they occur after this period of time are called late syphilis. The early stage is divided in primary syphilis, secondary syphilis and early non-primary non-secondary syphilis or formerly known as early latent syphilis.[9] The first is characterized by the presence of a chancre that occurs 3 to 90 days after inoculation. If the patient is not treated, 3-12 weeks after Chancre´s resolution secondary syphilis appears. This phase occurs as a result of hematogenous dissemination and lesions are mainly mucocutaneous and are named syphilis, the most common syphilis is a diffuse maculopapular exanthem on trunk and extremities, palms and soles are involved in 40-80% of cases, presenting as red to brown macules or papules with a collared scale.[10] Other clinical manifestations in this stage include condyloma lata which are moist papules or nodules with verrucous appearance in mucosas; oval exudative erosions, alopecia with moth-eaten pattern, paronychia, and lues maligna, this last one is characterized by the presence of ulcers or necrotic plaques in scalp, face, trunk and extremities.[11] And lastly, early non-primary non-secondary syphilis refers to a stage where patients are diagnosed based on serological studies without symptoms of primary and secondary syphilis.[9]

The presence of chancres within secondary syphilis have been reported, however, few literatures mention the frequency of this particular presentation and its clinical characteristics, for this reason the aim of this study was to report the incidence and clinical features of this rare form of presentation of syphilis.

CASE SERIES

This study was held at “clínica especializada condesa” in Mexico City, which is a clinic specialized in sexually transmitted diseases and LGBTTTIQ health. The patient selection was held from October the 1st 2016 to April the 30th 2020. All the patients with synchronous diagnosis of primary and secondary syphilis were included. These patients underwent a reverse sequence algorithm for syphilis diagnosis, initially with a rapid syphilis test using a finer-prick whole blood sample (immuno-chromatographic strip-based TT assay), this test is usually performed by the nurse staff, giving results within 20 minutes; if this test is positive, a non-treponemal tests as RPR or VDRL, were performed. All the patients were re-evaluated 6 months later (or 3 months if they were HIV positive) with a non-treponemal tests (RPR or VDRL, depending on which was initially performed). In those patients without history of HIV a 4th generation test was performed initially and 4 weeks later. All positive non-treponemal tests expressed with titers (quantitative).

Information regarding age, gender, sexual orientation, HIV co-infection, history of sexual abuse, age of onset of sexual activity, number of sexual partners in last 5 years, percentage of condom use during sexual intercourse, history of drug abuse, and prior sexually transmitted diseases; was registered. All patients with incomplete data, lab tests/lost during follow up were dismissed.

A total of 15 patients were enrolled. All of them were men. The mean age was 27.2-years. Just 5 patients were HIV positive, however, all of them had a former diagnosis. The 13 patients (86.6%) were MSM and 2 (13.45%) had heterosexual partners. Age of onset of sexual life varied from 11 years-old to 24 years-old with a mean value of 16.3 years-old. Six patients (40%) had history of sexual abuse, 4 of these patients initiated their sexual life the same year they were sexually abused.

The number of sexual partners in the last 5 years ranged from 2 to 250. Condom use in intercourse varied from no use at all-in-one patient, to a total compliance in three patients, with a mean value of 73.6% and a median value of 80%, likewise condom use was absent in oral sex in all patients. Substance use was present in 12 patients (80%), alcohol and marijuana were the most common used substances in 8 patients each (53.3%), followed by poppers in 6 patients (40%), 8 patients (53.3%) had history of using more than one substance.

The most common chancre location in primary syphilis was the penis in 14 patients (93.3%) and just 1 patient presented chancre in tongue (6.7%). In case of secondary syphilis, syphilitic roseola was most common type of presentation in 10 patients (66.6%), followed by palmoplantar plaques in 6 patients (40%) and condyloma lata in 2 (13.3%). Just 1 patient presented alopecia in “moth-eaten” pattern and this type of presentation coexisted with condyloma lata and palmoplantar plaques; and other patient presented with syphilitic roseola, palmoplantar plaques and condyloma lata (Figure 1). All patients had positive non treponemal tests at time of diagnosis, titles. All HIV positive patients with VDRL/ RPR titles >1:32 underwent lumbar puncture for ruling out neurosyphilis, even with neurological symptoms, just 1 patient with RPR 1:2048 resulted to have neurosyphilis and hospitalized for receiving treatment.

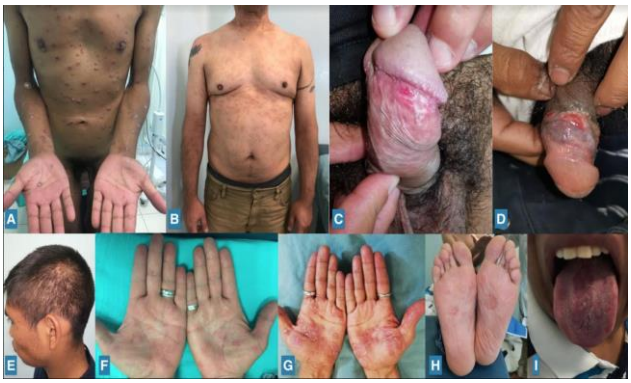

Figure 1 (A-I): Patients presenting with syphilitic roseola, penile syphilitic chancres, alopecia in a “moth-eaten” pattern, palmar erythematous plaques, plantar erythematous plaques and patient presenting chancre in tongue.

DISCUSSION

To our knowledge there are few reports in the medical literature regarding the coexistence of both presentations of syphilis. The proportion of patients with secondary syphilis presenting with a persistent chancre according to Forrest and cols, in a retrospective study held in Adelaide, Australia from 2004 to 2014, was 5 from 17 patients. From these 5 patients, 3 just had a maculopapular rash distributed on trunk, one had mucosal erosions and plantar plaques, and the last one had just mucosal erosions.[12] Similarly in a study performed Brosh-Nissimov and cols, in Tel Aviv Israel, in a population of 23 patients were 96% were HIV positive, the authors found that the incidence of this presentation was 22% (5 patients), in comparison to primary syphilis which was 9% (2 patients) and secondary syphilis of 70% (16 patients), however, the clinical presentation of these patients was not evaluated in this study.[12]

In this study all patients were men and MSM population predominated representing the 86.6%, this finding is related to the fact that MSM patients tend to be more sexually active with numerous sexual partners and are more prone to get involved in risky sexual practices as unprotected sex.[14] Drug use in this group of patients its important, being methamphetamines one of the most used substances in these patients mostly for chemsex, furthermore the use of dating apps as GRINDR for matching sexual partners is a frequent activity, increasing the risk of sexually transmitted diseases.[15,16] In our population substance use was present in 12/15 patients, being marijuana the most common, followed by alcohol and ´poppers´, where contrary to what is reported methamphetamine use, was found in just one patient. The high prevalence of marijuana uses in our population it's because patients believe it facilities receptive anal sex.

Rompalo et al reported that men infected with HIV and genital ulcers resulting from syphilis were more likely to have secondary syphilis with concurrent primary chancres men without HIV infection. Other investigators have suggested that syphilis may progress more rapidly in patients with HIV infection, and that signs and symptoms of infection are more florid in patients living with HIV.[17]

However, we cannot conclude in this case series if HIV infection had a certain role towards a determined clinical presentation in secondary syphilis because most of the HIV positive patients seen in our clinic are treated by the infectology department, therefore, conclusions in this population can be biased. In HIV negative patients, syphilitic roseola was the most common clinical presentation followed by the palmoplantar plaques. Regarding primary syphilis a single penile chancre predominated in 14/15 patients (93.3%).

The strength of this study is that is the first contemporary report that evaluates the exact clinical features of the coexistence of primary and secondary syphilis, considering the rise in the number of cases in the recent years. Another strength is that this investigation was held in a reference center for sexually transmitted diseases that attends patients from many parts of the city and neighbor cities, being syphilis the main reason of consultation, thus, it may be a reflex of the clinical behavior of this entity in our country. Although the number of patients seems to be little, its worth to mention that this type of clinical presentation is atypical and is not easily obtain in many medical institutions.

CONCLUSION

Syphilis continues to be one of the most frequent bacterial sexually transmitted disease worldwide, and the main cause of genetic ulcer in developing countries. With the prEP and dating apps use, the number of cases will continue to increase. Thus, the clinical presentation as coexistent primary-secondary syphilis will become more frequent, for that reason first contact physicians and dermatologists in charge of taking care of these patients would have to take more in consideration infrequent and atypical clinical forms of this disease.

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