

Reemerging syphilis: diagnosis from oral lesions

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Abstract:

Background: Syphilis cases have increasing worldwide recently, indicating a resurgence of the disease. Its clinical features vary widely and often challenge the establishment of the diagnosis. **Case report:** A 23-year-old woman presented with multiple erosive and patchy oral lesions, dysphagia, and pain with onset of two months. Her medical history revealed that she also presented skin macules which were misdiagnosed as pityriasis by a dermatologist. Nontreponemic test was reagent. An incisional biopsy of an oral lesion was performed and the histopathological aspects were suggestive of syphilis. Treponemic test was positive, confirming secondary syphilis. The treatment consisted of penicillin for 3 weeks. After the 6-months follow-up, clinical and serological exams did not show any sign of the disease. **Conclusions:** Diagnosing syphilis by oral lesions can be difficult once it can mimic other affections. Additionally, the reemergence of this sexually transmitted disease in the last years demands its inclusion in the differential diagnosis of either erosive or ulcerate lesions.

Keywords: Syphilis; Treponema pallidum; Diagnosis, Oral; Sexually Transmitted Diseases.

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INTRODUCTION

Syphilis is a systemic chronic infection caused by the anaerobic spirochete *Treponema pallidum* and can involve different organs and tissues depending on the stage of the disease^{1,2}. It can be sexually transmitted (acquired syphilis), vertically spread via the placenta (congenital syphilis) or, uncommonly, transmitted by contaminated objects used in blood transfusions³⁻⁴. This disease can be classified into four stages according to its activity and infectivity: primary, secondary, latent, and tertiary. The presence of oral lesions may be a feature of all phases of syphilis and can often be the first manifestation of the disease^{1,5}.

The primary stage of infection has an average incubation period of 3 weeks. It is characterized by a painless ulcer called hard chancre that occurs at the site of inoculation, heals spontaneously, and is classically located in the genital region. Although not common, hard chancre can also be extragenital and affect mainly anal or oral sites^{5,6}. After 2 to 12 weeks after the primary infection, the treponemes spread through blood and lymphatic vessels^{6,7} giving rise to the secondary syphilis phase, characterized by widely variable systemic and oral manifestations. The classic cutaneous manifestation of this phase is the maculopapular rash that often involves the palms and soles⁶. Oral lesions occur more frequently at this stage of the disease, and their clinical aspects can be quite heterogeneous^{4,6}. Tertiary syphilis, which occurs after a highly variable latent period, presents severe complications that may involve different systems. Its oral manifestation is characterized by gumma formation, which often affects the hard palate⁸. Although the diagnosis of syphilis may be challenging due to its variable clinical findings, it is effectively treated with antibiotic therapy.

Here, we report a case of syphilis diagnosed by our team from an oral manifestation in a young patient emphasizing the importance of diagnosing this reemerging sexually transmitted disease (STD).

CASE REPORT

A 23-year-old female sought our Stomatology outpatient clinic complaining about multiple lesions in the oral mucosa that appeared approximately two months before the consultation. At the history of present illness, she reported the previous onset of painful lesions in the palate, which were treated as pharyngitis with oral azithromycin and sodium diclofenac by an otolaryngologist. The clinical conditions had only

partially improved. The patient also revealed that 1 month before the consultation she had hair, eyebrows, and eyelashes loss. A dermatologist treated the case as hypovitaminosis. After this period, the oral lesions progressed to other sites causing pain, intense dysphagia, and feeding impairment. By that time, the patient was referred to our service.

On extra-oral examination, lymphadenopathies were not observed and the patient denied genital and cutaneous lesions. Intraoral examination revealed multiple and painful erosions in the labial mucosa (Figure 1a), hard and soft palate (Figure 1b), and in the right lateral border of the oral tongue (Figure 1c) in addition to red plates in the oropharynx. The clinical hypotheses included immuno-mediated diseases such as systemic lupus and discoid lupus erythematosus. Hematologic and serological tests were requested. In the following week, most of the lesions had regressed. However, erythrocyte sedimentation rate (ESR) and C-reactive protein showed high levels, and rheumatoid factor and venereal disease research laboratory (VDRL) test (titer 1:32) were reactive.

Thus, the patient's sexual behavior was questioned, but she denied having any previous sexual activity. Furthermore, her medical history was further reviewed and, in this opportunity, she reported to have had maculopapular skin eruptions in abdominal region one month ago, which were diagnosed and treated as pityriasis rosea by a dermatologist. The patient also reminded that her first oral lesion appeared in the lower lip (two months ago) and provided photographs of the cutaneous (Figure 2a) and lip (Figure 2b) lesions.

The photograph from lip showed a solitary, painless, fibrin-covered ulcer in the left lower lip measuring approximately 0.5cm in diameter and

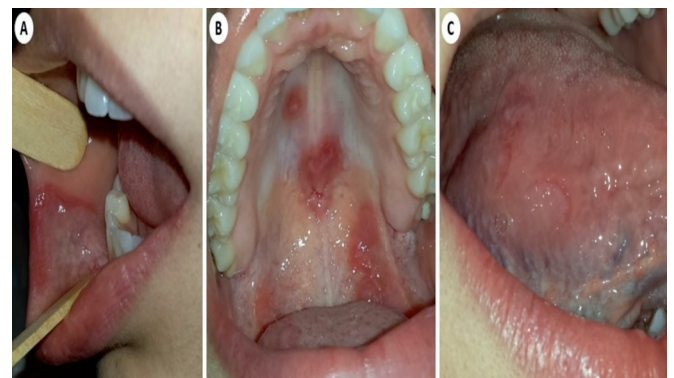


Figure 1. A. Clinical features of the “mucous patches” form on the labial mucosa and commissure. B. Erosive lesions and mucous patches covered by gray pseudomembrane on the hard and soft palate. C. Serpiginous lesions affecting the right edge of the tongue, described as snail track ulcers.

DISCUSSION

In this report, we presented a 23-year-old female patient diagnosed with syphilis by our team after the onset of oral lesions and previous consultation with other professionals. In recent years, syphilis cases have been increasing in different parts of the world mainly in USA, Canada, China, Russia, parts of Europe, Australia, and Brazil^{2,3,5,9}.

Particularly in Brazil, there was a significant increase between June 2010 and 2016, almost 230,000 new cases of the disease were reported. The states of São Paulo, Minas Gerais, Rio de Janeiro, Paraná, Rio Grande do Sul have presenting the highest increasing rates of syphilis in the year 2015¹⁰. In the last years, there were no other syphilis cases diagnosed at our service what may indicate a tendency of reappearance of this disease.

The at-risk population includes young, pregnant women, and men who have sex with men^{2,5,9}. Some of the factors that could explain the increase of syphilis cases are the high-risk sexual behavior, such as multiple concurrent sexual partnerships, and the reduction of the use of barrier protection (e.g. condoms) in the anogenital sex besides the increasing practice of unprotected oral sex^{2,5,11}. However, when our patient was recalled about her sex life, she still denied any history of sexual contact, high-risk behavior, including contact with contaminated objects or any other factor.

Primary syphilis, clinically characterized by chancre, is usually the consequence of orogenital or oroanal contact with a *Treponema pallidum* infected lesion. Extragenital chancres are rare and, when present, the lip is most commonly involved site, as result of oral sex practice and often goes unnoticed by the patient^{2,12}. It was not possible to clinically observe the chancre in our patient once she came to our Institution in a more advanced stage of the disease. Interestingly, her clinical history and self-photographed first oral lesion were compatible with primary chancre of syphilis.

Although oral lesions and skin manifestations may occur at any stage of the disease, they are mainly associated with secondary syphilis^{13,14}, which occurs in approximately 30% of untreated patients. In this phase, several systemic and mucocutaneous manifestations of the disease, such as fever, malaise, weight loss, pharyngitis, and lymphadenopathy^{5,6,14,15} occur. Some of these events were reported by our patient, additionally to hair, eyebrows, and eyelashes loss, which have been reported in about 5-6% of the patients with syphilis⁵.

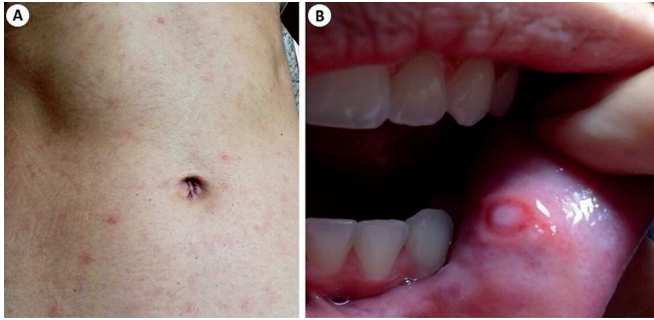


Figure 2. A. Maculopapular skin lesions in the abdomen. (Photo courtesy of patient). B. Clinical appearance of the first lesion of Oral Syphilis. Ulcer fibrin-covered, surrounded by erythematous halo in the lower lip. (Photo courtesy of patient).

surrounded by an erythematous halo, which healed spontaneously after 1 week according to patient (Figure 2b). At this time, the treponemal test Fluorescent Treponemal Antibody-absorption (FTA-Abs) was requested and an incisional biopsy of one of the palatal lesions was performed.

Microscopic analysis showed irregular acanthosis of the oral epithelium and lymphocytes and neutrophil exocytosis (Figure 3a,b). The histopathological diagnosis was suggestive of syphilis. The treponemal FTA-Abs was reactive and the diagnosis of secondary syphilis was confirmed. Once more, her sexual history was reviewed, but the patient still denied any previous sexual contact or high-risk behavior to STD. The patient was referred to an infectologist who prescribed weekly doses of intramuscular penicillin G benzathine, 2.4 million units, for 3 weeks. Gynecological evaluation to investigate genital lesions was negative. The 2-weeks follow-up showed total remission of the oral lesions and absence of symptomatology. After 6 months, clinical and serological exams did not show any sign of the disease (Figure 4).

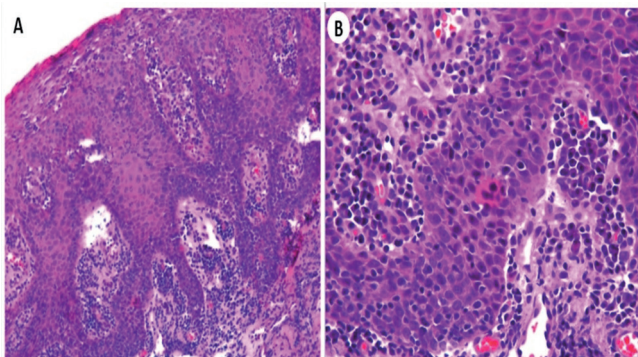


Figure 3. A. Photomicrograph showing (H & E x 10) chronic mucositis activity, characterized by an irregular acanthosis. B. Photomicrograph showing (H & E x 40) proliferated congested capillars, surrounded by inflammatory infiltrate composed of lymphocytes and plasma cells and exocytosis of lymphocytes.

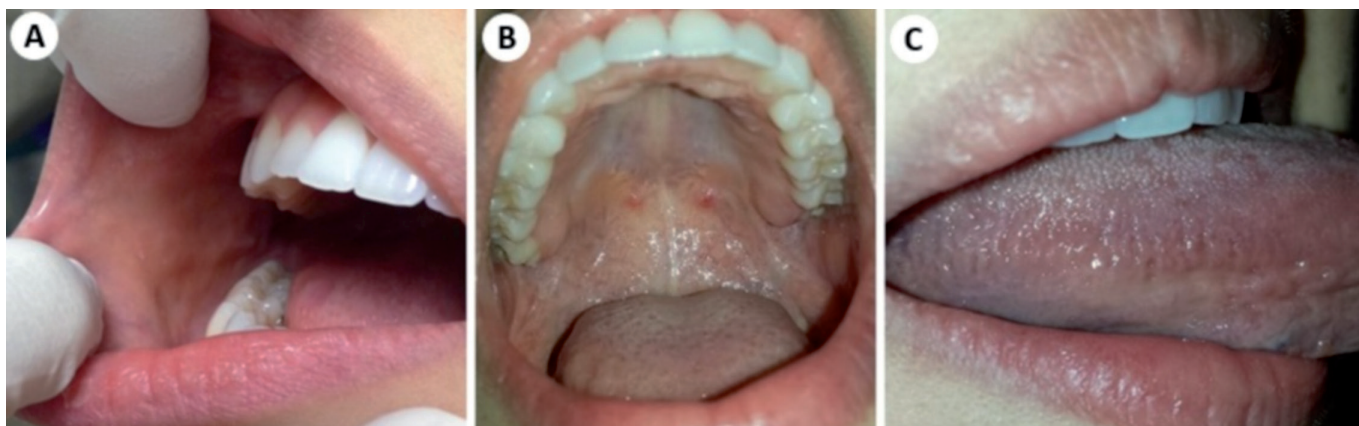


Figure 4. No clinical evidence of disease after 6 months' follow-up.

In addition, approximately 75% of patients with secondary syphilis develop skin manifestations¹⁶. Its most common presentation is called syphilitic roseola which is characterized by symmetrical, asymptomatic, and pink or red macules that last about two weeks and usually affect the trunk and extremities^{5,14}. The skin lesions from our patient were diagnosed as pityriasis rosea by a dermatologist, but we assume that these lesions were suggestive of syphilitic roseola, which is the first clinical sign of secondary syphilis and accompanying oral lesions^{2,17}.

Different from primary syphilis, that is presented as a single painless chancre, the oral lesions of secondary syphilis are usually symptomatic and multiple¹¹. The most common oral lesions associated with secondary syphilis are ulcers or erosions and "mucous patches" with two subtypes: slightly elevated-type plaques with ulcerated surface occasionally; or multiple mucous patches that may coalesce to give rise to serpiginous lesions, described as snail track ulcers^{4-6,12-14}. As seen in our patient, the usually affected sites are soft palate, tongue, lips, buccal mucosa, and vestibular mucosa^{5,14}.

In the reported case, it was possible to observe the diversity of clinical characteristics of oral lesions, a fact that challenges the clinical diagnosis of syphilis. In fact, syphilis is known as the "great imitator"⁵ due to this clinical variability. In this report, the initial clinical diagnostic hypotheses were immune-mediated diseases based on clinical characteristics of the lesions with periods of remission and exacerbation and also in her medical history. The differential diagnosis of oral lesions of secondary syphilis includes lupus erythematosus, erythema multiform, stomatitis, pemphigus, idiopathic leukoplakia, lichen planus, candidiasis, and other STD^{2,5,6,14,18}.

The confirmation of syphilis diagnosis is based on clinical signs and symptoms, sexual history, and specific serologic tests⁶. Histopathological characteristics of secondary syphilis can be very variable and are not sufficient for the diagnosis. The presence of plasma cell perivascular infiltrate associated with exocytosis of lymphocytes and neutrophils, in a psoriasis form appearance or not^{6,14} are suggestive features of syphilis. In our particular case, only serologic tests concluded the diagnosis^{4,6}.

There are 2 types of serologic tests for syphilis diagnosis. Nontreponemic tests (e.g. VDRL), and treponemic tests (e.g. FTA-Abs). The treponemic tests are used for confirmatory purposes if the nontreponemic tests are positive^{6,18}. In this case, VDRL in association with other serological tests was requested because of the suspicion of immune-mediated disease. However, only VDRL was positive, indicating a possible venereal disease. Thus, FTA-Abs was requested and it was reactive, confirming the diagnosis of syphilis.

Syphilis treatment depends on the disease stage. As the untreated, disease may progress to severe stages, long-term complications may develop¹¹ and require careful management. Penicillin is the first choice of treatment due to its efficacy at all stages of syphilis. Therapy with penicillin G benzathine, for 3 weeks, administered in our patient, resulted in the remission of symptoms and oral lesions after the first dose.

This report shows different manifestations of syphilis, a STD that is frightfully reemerging, and reinforces the urgent need to include this disease in the differential diagnosis of oral mucosa as well as systemic lesions. The variable clinical presentation of the disease, the vertiginous and recent increase in the number of cases reported added to the incomplete

information provided by the patient to us and maybe to the other health professionals consulted by her delayed the diagnosis. For this reason, the awareness of the resurgence of syphilis may be propagated in order to avoid the dissemination of this STD and prevent a public health issue.

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