

Syphilis: the great imitator. A case report and literature review

Sífilis la gran imitadora. Reporte de caso y revisión de la literatura

Sífilis o grande imitador. Relato de caso e revisão da literatura

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Abstract

Syphilis is a sexually transmitted disease caused by *Treponema pallidum*. Without treatment, it is chronic and highly contagious. Its varied clinical manifestations make it challenging to diagnose. We present the case of a syphilis oral lesion with a strong clinical suggestion of squamous cell carcinoma.

Clinical case: a 31-year-old man with a large ulcer in the right lower lip mucosa with indurated edges, two months of evolution, associated with two enlarged neck lymph nodes (lymphadenopathy). A thorough history is taken, and laboratory tests are run, confirming the treponemal infection diagnosis. He was treated, and the injury resolved. Follow-up tests were nonreactive.

Conclusions. It is important to suspect a syphilitic infection when a patient has lymphadenopathy and an oral lesion. Making the correct diagnosis allows for the proper care and recovery, avoiding complications that affect the patient's quality of life and sexual partners.

Keywords: syphilis, oral cavity, sexually transmitted diseases, *Treponema pallidum*.

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Resumen

La sífilis es una enfermedad de transmisión sexual causada por el *Treponema pallidum*. Sin tratamiento es crónica y altamente contagiosa. Sus variadas manifestaciones clínicas dificultan su diagnóstico. Presentamos el caso de una lesión sifilítica en cavidad oral con alta sugerencia clínica de carcinoma de células escamosas.

Caso clínico: hombre de 31 años que presenta gran úlcera en mucosa labial inferior derecha de bordes indurados, 2 meses de evolución, asociada a dos adenopatías en cuello. Se realiza una minuciosa anamnesis y exámenes de laboratorio, confirmando el diagnóstico de una infección treponémica. Se le brindó tratamiento y la lesión resolvió. Los títulos de seguimiento fueron no reactivos. **Conclusiones:** Se demuestra la importancia de mantener sospecha de infección sifilítica cuando un paciente presenta linfadenopatía y una lesión oral, fundamentar un diagnóstico correcto proporciona una pronta atención y recuperación del paciente, evitando complicaciones que afecten su calidad de vida y a sus parejas sexuales.

Palabras clave: Sífilis. Cavidad Oral. Enfermedades de transmisión sexual. *Treponema pallidum*.

Resumo

A sífilis é uma doença sexualmente transmissível causada por *Treponema pallidum*. Sem tratamento, é crônico e altamente contagioso. Suas variadas manifestações clínicas dificultam seu diagnóstico. Apresentamos o caso de uma lesão sifilítica na cavidade oral com uma alta sugestão clínica de carcinoma de células escamosas.

Caso clínico: homem de 31 anos de idade, com úlcera grande na mucosa do lábio inferior direito, com bordas endurecidas, 2 meses de evolução, associado a linfadenopatia do pescoço. Uma anamnese completa e exames laboratoriais são realizados, confirmando o diagnóstico de uma infecção treponêmica. O tratamento foi realizado e a lesão resolvida. Os títulos de acompanhamento não foram reativos.

Conclusões: A importância de manter uma suspeita de infecção sifilítica quando um paciente apresenta linfadenopatia e uma lesão oral é demonstrada, justificando um diagnóstico correto, proporcionam atenção e recuperação imediatas do paciente, evitando complicações que afetam sua qualidade de vida e seus parceiros sexuais.

Palavras-chave: Sífilis. Cavidade oral. Doenças sexualmente transmissíveis. *Treponema pallidum*.

Introduction

Syphilis is a sexually transmitted disease (STD) caused by a bacterium called *Treponema pallidum*, whose only natural host is humans⁽¹⁻²⁾. Its main site of inoculation is the genital organs. However, new sexual practices have caused this bacterium to have tropism for the oral cavity and anal region⁽³⁻⁵⁾. Mother to fetus transmis-

sion may also occur during pregnancy or childbirth^(6,7). There is a high risk of infection when sharing syringes for drug use⁽⁸⁾. Few cases of blood transfusion transmission have been reported^(1,8).

The World Health Organization (WHO) considers syphilis a global public health problem as it is one of the eight most prevalent STDs⁽⁷⁾.

Most people do not even realize they have syphilis as the onset of symptoms is highly variable, and the disease develops over prolonged latency periods. This leads to the spread of the disease, making it essential to diagnose and treat it ⁽⁹⁾. Untreated syphilis is a chronic disease ^(10,11). The treatment of choice is penicillin G benzathine. Treatment dosage and duration depend on the stage of the disease and the patient's clinical manifestations ^(5,10).

This paper aims to present the case of a syphilis oral lesion with a strong clinical suggestion of squamous cell carcinoma. It also seeks to demonstrate the importance of an accurate and quick diagnosis. This increases the effectiveness of the treatment strategy for patients and their sexual partners, which prevents further infections.

Background

Symptoms vary at different stages: primary syphilis usually manifests as a single ulcer (chancre) at the site of inoculation. This usually occurs between 9 and 90 days after the incubation period, and it takes approximately 3 weeks to spontaneously disappear, although periods of up to 8 weeks have been reported ^(3,5,12). The chancre is painless, highly contagious, and can go unnoticed ^(5,13).

If left untreated, the disease progresses to the secondary stage that can cause a rash in different parts of the body between 2 and 12 weeks after the chancre disappears (in some cases, it remains) ^(1,14). Erythema on the palms and soles is highly suggestive of secondary syphilis ^(5,13). Besides, a variety of mouth lesions may appear, which are more common at this stage than at the primary stage ⁽³⁾.

Syphilis has been called "the great imitator" because of its many possible symptoms that resemble those of other diseases ⁽¹⁵⁾. Oral mu-

cosal lesions are quite variable and similar to pathologies such as lichen planus, eosinophilic ulcer, lymphoma, necrotizing sialometaplasia, and oral squamous cell carcinoma (OSCC) ⁽¹⁶⁾. Tertiary syphilis manifests as perforating ulcers called syphilitic gummas that can lead to neurosyphilis or cardiovascular syphilis ^(11,14). The infection may have latency periods (no symptoms and/or signs) between the secondary and tertiary stages, when it can only be detected with a serological test ⁽¹⁷⁾.

Case description

A 31-year-old Nicaraguan male deprived of liberty is brought to the School of Dentistry of the University of Costa Rica (UCR) with the main complaint of lower lip injury of approximately two months of evolution. He does not report a history or systemic contraindications in the direct interview. He currently does not take any medications. He states that he is a chronic smoker: 30 cigarettes a day from the age of 16. When asked about his sexual activity, he reports being single, bisexual, and having had unprotected oral sex with males.

Dry and cracked lower lip vermilion border was observed during the clinical examination. A 3 x 4 cm ulcer appears at the lower right lip mucosa. It has very hardened edges associated with erosive areas. The base is covered with a yellowish pseudomembrane that is painful to palpation and when brushing against the teeth. The patient reports a smaller lesion at first, which he thought was a bite or injury. But the lesion did not heal and instead grew in two months (Fig. 1A). He had two enlarged lymph nodes measuring 2 cm on the neck, on the right level III. They were ovoid and painful on palpation, with an evolution of two days. No facial or skin contour alterations were observed (Fig. 1B).

Fig. 1: A. Ulcer on the right lower lip mucosa, 3 x 4 cm, hardened edges associated with erosive areas and the base covered with yellowish pseudomembrane. B. Two 2 cm enlarged lymph nodes, ovoid in shape, at level III of the right side of the neck



Given the findings, OSCC vs. syphilitic chancre were established as clinical diagnosis. An ultrasound-guided fine-needle aspiration biopsy (FNAB) was taken from the neck, and laboratory tests were run: complete blood count, VDRL (Venereal Disease Research Laboratory), and human immunodeficiency virus (HIV).

The neck ultrasound detected two enlarged lymph nodes at level III. They measured 22 mm and 18 mm, had no hilum, and the FNAB was negative for malignant cells and compatible with reactive adenopathy. The HIV test was negative; VDRL was positive. The fluorescent treponemal antibody absorption (FTA-ABS) test was performed, and the result was positive. With the definitive diagnosis of syphilis, he was referred to the Costa Rican Social Security System. He was treated with penicillin 2.4 million unit, intramuscular injection every eight days for three weeks. He was told to ask his sexual partners to take blood tests to rule out syphilis.

The lesion healed within one week of treatment (Figure 2). Follow-up was performed with negative VDRL blood test at 3, 6, 12, and 24 months. He reported oral functionality and comfort and is lesion-free.

Fig. 2: The check-up eight days after starting the treatment already shows healing in the area



The patient provided his free and informed written consent for the publication of his case.

Discussion

According to the WHO, the rate of reported syphilis cases has increased worldwide ⁽⁹⁾ according to the WHO, with an estimated 5.6 million new cases each year ⁽¹⁸⁾. In our country, the people most affected are in the 20-65 age range. It is more prevalent among men ⁽¹⁹⁾.

At-risk populations include men who have sex with other men, sex workers and their clients, people who have numerous sexual partners, transgender people, or those who already have an STD ^(7,20,21). There are also vulnerable populations, such as adolescents, children, and young people living on the streets, prisoners, and drug users ⁽⁷⁾. This coincides with our case: the patient was a man, deprived of liberty, and has sex with men and women.

Treponema pallidum enters the mucosa or eroded skin and starts dividing at the site of inoculation, producing primary syphilis ⁽⁵⁾. The primary lesion appears after an incubation period of 21 days on average (range between 9 and 90 days) ⁽¹¹⁾. It is a hardened and painless chancre, with a clean base, firm and raised edges, and rich in treponemas. It is usually accompanied by local ⁽¹⁾ or regional lymphadenopathy ⁽¹³⁾. In this case, the syphilitic chancre was located in the lower lip mucosa, so the inoculation was due to oral sex. The patient was asymptomatic but had non suppurative neck adenopathy. This case was similar to OSCC in appearance. OSCC is cancer more widely associated with men: it has been reported that over 90% of patients with oral cancer have been smokers ⁽²²⁾. In advanced stages, it can present as a large tumor with or without ulcerations, a deep ulcer with an irregular vegetating surface raised edges, and a hard infiltration of oral tissues; prone to rapid spread to the lymphoid nodes and metastasis ⁽²³⁾. The above is consistent with the case under study: clinically high suspicion

of OSCC. Therefore, the interviewer's ability to make a differential diagnosis is of paramount importance.

Early diagnosis of syphilis requires details of sexual history and drug use, which people seldom provide voluntarily and easily ⁽²⁴⁾. It is essential to conduct a thorough physical examination. The professional must know the clinical manifestations, which is as important as the laboratory tests used and their correct interpretation to diagnose syphilis ⁽²⁾.

The screening and non treponemal tests to run are RPR (Rapid Plasma Reagin) and VDRL. These tests are easy and quick to perform. They are valuable because they can distinguish between an active infection and a previous one. Their disadvantage is their low specificity at certain stages of the disease, which leads to false positives ^(6,11,17). Therefore, a confirmatory test is required—CMIA (chemiluminescence immunoassay), HTPA (*Treponema pallidum* hemagglutination) and APTP or FTA-ABS—because they detect antibodies, remain positive for life, and do not distinguish an active infection from a treated one. This is why they must be run together with a presumptive test ^(6,17). VDRL and FTA-ABS were the diagnostic tests for syphilis used in this case.

It is recommended that men who have sex with other men be tested annually. If there are more associated risk factors, such as numerous partners or sex combined with illicit drugs, they should be tested every three months ^(13,24).

A biopsy might be necessary because, clinically, the lesion can be confused with various oral pathologies such as oral tuberculosis, aphthous ulcerations, lymphomas, necrotizing sialometaplasia, OSCC, among others ^(16,25-27), in particular when the lesion is the only sign of the disease. The biopsy must show an inflammatory plasma cell infiltration to suggest the diagnosis, leading to the anti-treponemal immunohistochemistry test, where spirochetes can be observed to confirm the presence of syphilis ^(28,29). Furthermore, it is helpful to run a FNAB

of the affected lymphoid nodes. In this case, it allowed us to rule out malignancy and confirm a reactive adenopathy, allowing us to reach the definitive diagnosis of syphilis in conjunction with serological tests.

Parenteral Penicillin G is the drug of choice at all stages of the disease since it has maximum efficacy and no resistance ⁽¹⁰⁾. The health professional must follow up on the treatment to observe the patient's response and treat the patient's sexual partners of the previous 90 days ^(20,30). If the contact with sexual partners took place over 90 days before, laboratory tests are suggested to confirm whether they are infected or not; if so, treatment should be provided ^(10,20,30). Both elements were addressed in our case.

Oral sex and illicit drug use have increased, especially among adolescents, and probably as a safe way to avoid pregnancy, without worrying or having the correct information about the risks and consequences of highly infectious oral injuries caused by STDs ^(4,11,24,31).

The WHO has a global strategy (2016-2021) to reduce STDs and STD-related deaths drastically ⁽⁷⁾. The 2030 target is to reduce the global incidence of syphilis by 90% ⁽³²⁾. This requires

each country to define the specific populations that are most affected and have political support and resources to promote sustainable actions ^(7,33).

This case report is essential because syphilis was diagnosed early. It is also a clear example that teamwork with other health specialists is essential.

Conclusions

It is of the utmost importance for health professionals, especially dentists, to become familiar with this pathology. It is important to consider the suspicion of syphilitic infection when a patient has lymphadenopathy and an oral injury. The quick diagnosis and correct treatment of this case allowed for the patient's prompt care and recovery, as well as that of his sexual partners. This prevented more people from becoming infected and having their quality of life affected.

Expert advice can improve people's ability to recognize STD symptoms, thus increasing their chances of seeking care or encouraging their sexual partners to do so.

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Note informed consent:

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Authors' contribution note:

1. Conception and design of the study
2. Acquisition of data
3. Data analysis
4. Discussion of results
5. Drafting of the manuscript
6. Approval of the final version of the manuscript

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