Natural history of primary syphilis: clinical and serological aspects of chancre concurrent with Follmann's balanitis

Evolução natural dos aspectos clínicos e sorológicos de um caso de cancro duro concomitante com balanite de Follmann

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ABSTRACT

Introduction: Primary syphilis is classically represented by a hard chancre, but other rare forms such as Follmann's balanitis are occasionally described. **Objective:** To show an iconography of the clinical presentations of the classic hard chancre and Follmann's balanitis, in parallel with the serological results in the course of diagnosis and treatment. **Methods:** Descriptive case report of a patient of an outpatient clinic for sexually transmitted infections in a tertiary hospital in the city of São Paulo, SP, Brazil. **Conclusion:** Syphilis lesions acquire different clinical expressions according to the natural evolution of the disease. Recognizing these presentations, as well as knowing how to interpret the serological results, is essential for the diagnosis and adequate treatment of the infection.

Keywords: syphilis; chancre; syphilis serodiagnosis; serology; diagnosis.

RESUMO

Introdução: A sífilis primária é representada classicamente pelo cancro duro, porém outras formas raras, como a balanite de Follmann, são ocasionalmente descritas. **Objetivo:** Apresentar uma iconografia dos estágios evolutivos da lesão clássica de cancro duro e da balanite de Follmann em paralelismo com os resultados sorológicos no curso do diagnóstico e do tratamento. **Métodos:** Relato descritivo evolutivo de paciente atendido em ambulatório de atendimento de infecções sexualmente transmissíveis de hospital terciário da cidade de São Paulo (SP), Brasil. **Conclusão:** As lesões da sífilis adquirem expressões clínicas diversas conforme a evolução natural da doença. Reconhecer essas apresentações, bem como saber interpretar os resultados sorológicos, é fundamental para o diagnóstico e o tratamento adequado da infecção.

Palavras-chave: sífilis; cancro; sorodiagnóstico da sífilis; sorologia; diagnóstico.

INTRODUCTION

Syphilis is referred to in the scientific literature as the "great imitator," due to its diverse clinical manifestations. Some of these presentations acquire different aspects depending of the disease's natural history. Recognizing each lesion and associating it with serologic results stimulates logical reasoning and provides valuable information in diagnosing and treating the disease.

The primary stage of the disease is classically represented by hard chancre. Although this concept is well established, its clinical representation is not always easily recognized, as it can take almost any conceivable morphological form and can occur in any accessible part of the human body, except teeth, hair and nails[1]. In addition to this usual representation, other rare forms are occasionally described, such as Follmann's syphilitic balanitis, a lesion little described in the literature and easily confused with irritative or fungal conditions[1,2].

Thus, serology for syphilis can be used for diagnostic aid. It is classified into treponemal tests (TT), which recognize the invasion of treponema in the body and remain positive for life in about 85% of cases, and nontreponemal tests (NTT), which corresponds to the immune response to cardiolipinic elements released by the parasite's cell lysis that occurs in the host's defense reaction.

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OBJECTIVE

This report presents an iconography of the evolutionary stages of primary syphilis manifested by the concomitance of hard chancre with Follmann's balanitis, in an immunocompetent patient.

METHODS

We present a descriptive study of a case from the Sexually Transmitted Infections (STI) outpatient clinic of a tertiary hospital in the city of São Paulo. The photographic records and clinical details were authorized by the patient for publication, according to the standard consent form signed in his care. Both images and the data presented herein do not allow his identification.

CASE REPORT

A 19-year-old man with a history of treated syphilis sought outpatient dermatological care with an asymptomatic lesion on his penis that appeared after unprotected sexual intercourse for four weeks. In this first consultation, he presented an isolated hypochromic macula with well-defined edges on the penis shaft, without other commemorative elements (**Figure 1**). Syphilis, HIV, hepatitis B and C serology were requested, and a return visit was scheduled within two weeks. In this return, the lesion evolved to a nodule measuring 0.5 cm in diameter with a mild central depression, no exudate, and a positive dory flop sign. He also had areas of erosion on the glans and bilaterally palpable inguinal lymph nodes (**Figure 2**). Serological tests were non-reactive, with the exception of serology for syphilis, which showed

Figure 1 – Initial aspect of the hard chancre lesion on the penis shaft presented in the first consultation, characterized by an asymptomatic hypochromic macula.

Figure 2 – Lesions presented at the first return visit, with evolution of the lesion on the penis shaft to the classic form of hard chancre and Follmann's balanitis in the glans.

TT performed by the chemiluminescent microparticle immunoassay (CMIA) method as reagent. Due to clinical suspicion of primary syphilis, the condition was explained to the patient, who was treated with benzathine penicillin, and a return visit was scheduled in four weeks with a new serology to confirm the diagnosis. In this second return, the lesion on the body of the penis regressed to a plate with mild elevation, but a larger diameter than the previous nodule, and the lesions on the glans were also in the process of regression (**Figure 3**). In this consultation, only one left inguinal lymph node was swollen on palpation. Serological tests evolved with a positive VDRL (TNT) to 1/32.

DISCUSSION

The classic lesion of primary syphilis is the painless chancre, which identifies the place of inoculation of the bacteria in the organism. It occurs between 3 to 90 days after inoculation (average of 21 days) and evolves from macula to papule and nodule, which loses its covering epithelium and then becomes erosion. The loss of deeper tissue produces an ulcer, typically 0.5 to 3 cm in diameter, with a

Figure 3 – Evolution of lesions after four weeks of treatment with benzathine penicillin 2,400,000UI IM.

clean, smooth and mucoid surface that produces a discrete serous exudate[1,2]. In the present report, it was possible to observe this progression of the elementary lesion from a hypochromic macula to an infiltrated and indurated nodule with central ulceration, followed by regression to a thin plaque with a tendency to cure. The hardened appearance of the nodule to touch is due to the surrounding edema and lymphocytic infiltration, giving the name "hard chancre" to the lesion. In the case presented, we evidenced this infiltration in the static inspection by the interruption of the skin folds close to the infiltrated lesion, as well as in the dynamic inspection with the presence of the "dory flop sign", in Portuguese called "flag sign" or "button sign," which represents moving the lesion in blocks[2,3].

At the first return visit, there was a conflict of interpretation of the serological result, as it could be compatible both with probable primary syphilis and with the serological scar after treatment. In primary syphilis, there are three serological possibilities, depending on the time of collection in relation to the duration of the disease: both tests are non-reactive, only the reactive treponemal test, or both reactive. This is because the TT is the first to become positive in contact with the treponema, followed by the NTT. In serological scarring, TT remains reactive in 85% of cases even after treatment, and NTT remains reactive at low or non-reactive levels[4]. Therefore, it was important to repeat the serology for the analysis of NTT progression, which would be positive only in the case of an evolving primary syphilis. Thus, the case described is valuable both for recording the evolution of the clinical aspect of hard cancer and for the serological progression of seroconversion in the nontreponemal test. It is worth emphasizing the importance of treating the disease whenever there is clinical suspicion, in order to prevent its progression, as well as to break the chain of transmission to other people.

Other cutaneous manifestations are described in the primary form of the infection in addition to hard chancre, such as multiple erosions on the glans that are easily confused with a fungal or irritative etiology. This presentation is named after its first descriptor, "Follmann's syphilitic balanitis," and can develop before or after the onset of primary cancer. Its occurrence is rare, and articles indicate a rate of 0.05% of the cases described[1,5-9].

Inguinal lymphadenopathy is present in primary syphilis, usually unilateral and inflammatory, mainly in lesions located in the male genitalia. This manifestation is so frequent that Fournier stated that

the lymph node "follows the cancer as the shadow follows the body," being also recognized as "Ricordi's perfect lymph node"[1]. In the case presented herein, it was evident that as in the dermatological evaluation of the lesions the timing of the clinical examination of the patient is essential to demonstrate the characteristic of the lymph node enlargement, which was initially bilateral and evolved into the most described form of unilateral involvement.

Strengths

This is a well-recorded and conducted case of a rare clinical presentation of primary syphilis, with valuable information for the clinical and serological diagnosis of the infection.

Limitation

As a scientific production, clinical cases are of lesser value to the scientific community than randomized double-blind studies.

CONCLUSION

The case presented includes not only the rare presentation of Follmann's balanitis, but also a chancre in three dermatological manifestations according to its natural evolution. Serological findings complement the discussion and help to understand this "great imitator."

Participation of each author

John Verrinder Veasey: Conception and design of the study, Data collection, Analysis and interpretation of data, Writing of the article, Critical review of important intellectual content, Effective participation in guiding the research, Intellectual participation in the propaedeutic and/or therapeutic conduct of studied cases, Critical literature review, Final approval of the final version of the manuscript.

Sandy Daniele Munhoz: Conception and design of the study, Data collection, Analysis and interpretation of data, Writing of the article, Obtaining, analyzing and interpreting data, Critical review of important intellectual content, Intellectual participation in the propaedeutic and/or therapeutic conduct of studied cases, Critical literature review

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Conflict of interests

None.

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