BJCR
Brazilian Journal of Case Reports

PCAA
Publicações Científicas de Acesso Aberto

Case Report

Clinical Case Report: Secondary syphilis in a child with no history of sexual abuse

Regina Célia de Souza Campos Fernandes [1], Enrique Medina-Acosta [2,*]

[1] Faculdade de Medicina de Campos, Rio de Janeiro, RJ, Brazil.
[2] Universidade Estadual do Norte Fluminense, Rio de Janeiro, RJ, Brazil.

* Correspondence: quique@uenf.br.

Abstract: This pediatric case report details the diagnostic and therapeutic challenges of secondary syphilis in a six-year-old child presenting with oral lesions and perianal condyloma lata. The diagnosis was confirmed through the Venereal Disease Research Laboratory (VDRL) test, and successful treatment was achieved with benzathine penicillin. The case presented significant diagnostic complexities, necessitating the evaluation of three potential transmission routes: late congenital syphilis, sexual abuse, and non-sexual transmission. Late congenital syphilis was excluded based on the absence of typical symptoms such as bone and dental abnormalities and neurosensorial deafness. Sexual abuse was thoroughly investigated and ruled out following an extensive four-month evaluation by a multidisciplinary team comprising a psychologist, nurse, social worker, and pediatric infectious disease specialist. Ultimately, non-sexual transmission, likely from an untreated family member, emerged as the most plausible cause, supported by the observation of overcrowded living conditions and inadequate hygiene practices in the child's environment. This case underscores the necessity of comprehensive diagnostic evaluations, including consideration of all possible transmission routes, in managing pediatric syphilis. Public health interventions focusing on improving living conditions and hygiene practices are essential to prevent similar cases.

Keywords: Non-Sexual Syphilis Transmission; Pediatric Syphilis; Secondary Syphilis in Children; Syphilis Differential Diagnosis; Treponema pallidum.

Citation: Fernandes RCSC, Medina-Acosta E. Clinical Case Report: Secondary syphilis in a child with no history of sexual abuse. Brazilian Journal of Case Reports. 2025 Jan-Dec;05(1):bjcr11.

Received: 6 June 2024
Accepted: 11 July 2024
Published: 15 July 2024

Copyright: This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

1. Introduction

Syphilis is a sexually transmitted infection caused by the bacterium Treponema pallidum. While it is primarily acquired through sexual contact, cases of non-sexual transmission, particularly in children, have been documented, albeit rarely [1-7]. The epidemiology of syphilis in children is complex, often linked to congenital transmission or, in rare instances, non-sexual means such as close household contact or fomites. Understanding the differential diagnosis between sexual and non-sexual transmission in children is crucial for management and treatment.

Acquired secondary syphilis manifests through the dissemination of Treponema pallidum approximately four to eight weeks following the initial chancre development [1, 8]. Its earliest signs often include a morbilliform rash that extends to the palms and soles, generalized lymphadenopathy, alopecia, and condyloma lata. This report describes a case involving a six-year-old boy who presented with perianal condyloma lata and oral mucosal plaques indicative of acquired secondary syphilis, which was corroborated by VDRL testing. The patient was successfully treated with benzathine benzylpenicillin. Although

sexual abuse was initially considered, it was ruled out after a comprehensive investigation by a multidisciplinary team.

2. Case Report

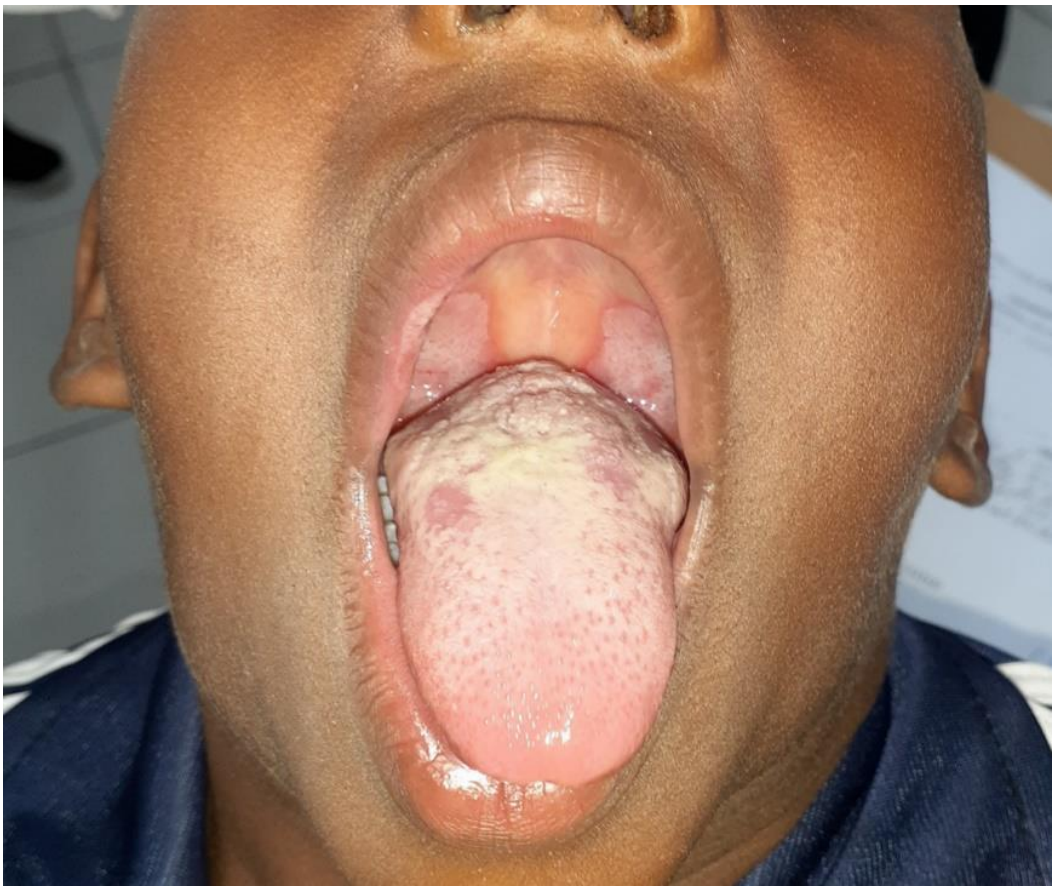
A 6-year-old male patient presented with multiple clinical features suggestive of secondary syphilis. These included a moist, smooth, whitish-pink plaque in the perianal region (Figure 1), mucosal plaques on the palate (Figure 2), inner corner of the mouth, and lips. He had painless, soft cervical adenopathies measuring 2.5 cm in diameter, which persisted following a previous episode of fever three weeks before, with no accompanying rash or desquamation of the palms and soles.

Figure 1. A moist, smooth, whitish-pink plaque measuring approximately 2-3 cm in diameter, in the perianal region of a six-year-old child. This well-defined, slightly raised, rounded lesion manifested three weeks after the patient experienced fever and cervical lymphadenopathy episodes. The surrounding skin appears normal, without signs of inflammation or secondary infection. The appearance and location of the plaque are consistent with condyloma lata, a characteristic finding in secondary syphilis, suggesting the systemic dissemination of *Treponema pallidum*.

Confirmation of secondary syphilis with condylomata lata was achieved through diagnostic tests, which showed a VDRL titer of 1/64 and reactive IgG and IgM Treponema tests. This effectively ruled out the possibility of condylomata acuminate, the most pertinent differential diagnosis [2, 3, 5, 6]. Rapid serological tests for other sexually transmitted infections, such as HIV, hepatitis B, and hepatitis C, yielded negative results. Treatment involved a single dose of intramuscular benzathine benzylpenicillin (1.2 million units), which led to the resolution of the condylomata lata within one month. Subsequent follow-up at four months post-treatment revealed a reduced VDRL titer of 1/32, prompting the

prescription of an additional dose of benzathine benzylpenicillin. Unfortunately, the patient was lost to follow-up for 18 months, which hindered continuous monitoring and assessment of long-term treatment efficacy. However, upon reevaluation, the VDRL titer was 1/2, and FTA ABS IgG was reactive, while IgM was non-reactive, confirming the success of the treatment.

Figure 2. Mucosal plaques visible on the palate and tongue of a six-year-old child, developing concurrently with the perianal plaque. The lesions are whitish, slightly raised, and exhibit a patchy appearance with a central area of more intense discoloration. These plaques developed concurrently with perianal condyloma lata, as shown in Figure 1.



The following timeline summarizes the progression of symptoms and treatments: The patient first presented with cervical lymphadenopathies, perianal, oral mucosal lesions, and fever episodes three weeks before. VDRL testing in Week 1 confirmed syphilis with a titer of 1/64, and IgG and IgM Treponema tests were reactive. In Week 2, a multidisciplinary team conducted a 4-month long extensive examination to assess sexual abuse. In Week 3, the patient received a single dose of intramuscular benzathine benzylpenicillin (1.2 million units). By Month 1, follow-up revealed a significant reduction in symptoms, but the VDRL titer was 1/32, prompting an additional dose of benzathine benzylpenicillin. The patient was lost to follow-up for 14 months but was reevaluated on Month 18, showing a VDRL titer of 1/2 and reactive FTA-ABS IgG with non-reactive IgM, confirming treatment success.

It is crucial to differentiate secondary syphilis from congenital syphilis, especially pertinent in this case as the mother, who lacked prenatal care, tested positive for syphilis at delivery via a rapid test. This situation met the diagnostic criteria for congenital syphilis, which is a notifiable condition requiring thorough investigation under the guidelines set by the Brazilian Ministry of Health [9]. The newborn's serological VDRL was 1/2, and

long bone radiography showed no abnormalities. Analysis of cerebrospinal fluid, including cellularity, protein levels, and VDRL, showed negative results, ruling out neurosyphilis. The child was given a ten-day course of intramuscular procaine benzylpenicillin, which is considered an alternative to aqueous penicillin G [10], but no further follow-up was conducted. The child was not premature, had a normal birth weight, and did not exhibit any clinical features of early congenital syphilis, such as hepatomegaly, splenomegaly, palmoplantar pemphigus, flat condyloma, periostitis, osteitis, osteochondritis, pseudoparalysis of the limbs, respiratory distress with or without pneumonia, serosanguineous rhinitis, jaundice, anemia, or generalized lymphadenopathy [9]. At age six years, bone and dental sequels, neurosensorial deafness, and typical manifestations of late congenital syphilis were absent, demonstrating the efficacy of the choice of treatment.

3. Discussion

This is a clinical account of an uncommon instance of secondary syphilis, purportedly acquired through nonsexual means, in a 6-year-old male patient. Although the literature suggests that syphilis contracted through nonsexual routes is atypical [3-7, 11], the case discussed here plausibly represents such a mode of transmission.

Non-sexual syphilis transmission in children can occur through various indirect contact mechanisms, including breastfeeding from an infected mother, close household contact with an infected individual, sharing personal items such as tableware, linens, or toothbrushes, and contact with contaminated surfaces like bedding or towels. Caregivers with oral lesions rich in Treponema pallidum can also transmit syphilis to children by pre-tasting and pre-chewing food [7]. Documented cases, such as those reported by Moscatelli et al. [4], emphasize the significance of poor living conditions and hygiene practices in facilitating transmission. These environmental factors are crucial in understanding and preventing syphilis transmission in household settings. Further research is warranted to explore the prevalence and mechanisms of non-sexual syphilis transmission in children, as this remains an under-explored but crucial area of infectious disease research [3].

As with all cases of syphilis in children, sexual abuse must be excluded [11]. The dilemma of diagnosing syphilis in young (preschool-aged) children stems from the difficulty these children have in reporting any history of sexual abuse, compounded by the possibility of parents or guardians concealing such history [5, 11]. Given the highly improbable scenario of acquiring perianal or oral mucosal syphilis, a four-month comprehensive evaluation to explore potential causes, including sexual abuse. The care process involved weekly visits by the patient to the pediatric outpatient clinic of the municipal STD program, always accompanied by the maternal grandmother. A comprehensive team comprising a pediatrician, nurse, psychologist, and social worker cared for the child at each visit. A psychologist, nurse, and social worker conducted monthly home visits. The primary aim of these visits was to observe the child's behavior in their home environment in relation to the diagnostic hypotheses. Throughout these interactions, the child exhibited normal behavior, cooperatively participating in clinical examinations, and responding to inquiries with no constraints. The assessment ruled out sexual abuse as a cause and showed that the child likely acquired syphilis through nonsexual contact, possibly due to overcrowded living conditions and poor hygiene practices. It is important to note that the child belongs to a family of five adults and five children who live in a two-room house. Despite recommendations, the family declined further examination and testing.

Acknowledging the highly contagious nature of condylomata lata, which can be transmitted through sharing bed sheets, towels, cups, or toothbrushes, is crucial. Clinicians should consider the influence of living conditions and hygiene practices on disease transmission [2, 4-7]. Notably, the presence and location of condylomata should not be misconstrued as indicators of sexual abuse, but as associated with local environmental factors conducive to the development of Treponema pallidum.

The strengths of this case report lie in several key areas. First, we were able to definitively diagnose the 6-year-old child with secondary syphilis through rigorous testing

while effectively ruling out other sexually transmitted diseases. No late-stage manifestations of congenital syphilis were observed, reinforcing the acquired nature of the disease in this case. However, the study is not without limitations. A significant drawback was the absence of maternal attendance during follow-up consultations aimed explicitly at assessing congenital syphilis. The lack of maternal participation in the study precluded essential assessments in the child, including VDRL and treponemal tests, which would have been informative at 18 months when maternally transferred antibodies would have waned. The absence of maternal follow-up is a practice we strongly discourage. The child's disease progression was not longitudinally monitored in the context of secondary syphilis, creating a gap in the data timeline. Another limitation was our failure to perform syphilis testing on all family members, a lapse that may have provided further insight into the transmission dynamics. It should be noted that the child was consistently brought to outpatient visits by the grandmother and not by other family members, which might have implications for understanding familial patterns of disease transmission and care.

We concede that the unavailability of syphilis serology status in the immediate family members presents a limitation in the interpretability of this case. The family's reluctance to participate in joint consultations with the child is disquieting. To mitigate these concerns, we have elucidated the systematic and multifaceted approach employed to exclude the possibility of sexual abuse, highlighting:

- The absence of physical signs suggestive of sexual abuse, such as trauma or scarring in the perianal region.
- The child’s demeanor during clinical evaluation did not exhibit reluctance or fear when examined, particularly in the perianal area.
- The child’s consistent behavioral profile is marked by active participation and cooperativeness throughout the clinical assessments.
- The normalcy of the child's interactions in structured environments, as evidenced by unremarkable school attendance records.
- Psychological assessments revealed no indicators of emotional distress or trauma commonly associated with sexual abuse.
- Home assessments reported socioeconomic hardships, including poverty, unsanitary conditions, and cramped living spaces, without signs indicative of abuse.
- The grandmother's consistent presence during clinical visits was attributed to the mother's commitment to the care of another child with encephalopathy, a factor that was considered in the context of the family's overall dynamics.

4. Patient perspective

The experience of secondary syphilis and its treatment was marked by significant cooperation despite the discomfort associated with the condition and its interventions. While showing remarkable compliance during the diagnostic and treatment procedures, the six-year-old boy expressed discomfort, specifically with the intramuscular administration of benzathine benzylpenicillin, which is common given the nature of the treatment. The pain from the injections was outweighed by the relief of symptoms and the supportive care provided by the healthcare team. The child's resilience and the successful outcome testify to the importance of patient-centered care in pediatric medicine, particularly in cases involving sensitive diagnoses and treatments.

5. Conclusions

This manuscript underscores the diagnostic complexities of secondary syphilis in pediatric populations, particularly the challenge of distinguishing between sexual and nonsexual transmission routes. It emphasizes the importance of a thorough, multi-faceted evaluation by healthcare professionals, including home assessments, to understand the patient's environment. The case reveals key insights into the role of environmental factors, such as overcrowding and poor hygiene, in facilitating the nonsexual transmission of

Treponema pallidum. This is relevant in settings where close quarter living and shared personal items are common, increasing the risk of infection through cutaneous and mucosal lesions. Crucially, this case highlights the need for careful consideration of nonsexual transmission in differential diagnoses for pediatric syphilis and demonstrates the vital role of comprehensive evaluations in ruling out sexual abuse, thus preventing misdiagnosis and ensuring accurate treatment. Public health interventions, including community health education programs, play a pivotal role in raising awareness about the nonsexual transmission routes of syphilis and the specific preventive measures needed, such as improving hygiene practices and reducing overcrowded living conditions.

Practical recommendations for physicians and healthcare professionals dealing with similar cases

1. Confirm etiology with laboratory tests.
2. Conduct thorough multidisciplinary evaluations to rule out sexual abuse.
3. Consider environmental and social factors in syphilis transmission, especially in poor living conditions.
4. Ensure follow-up to monitor treatment efficacy and patient recovery.
5. Screen and treat all household members, including close contacts, to prevent re-infection and halt further transmission. Since voluntary screening often results in poor adherence, comprehensive and enforced household screening should be implemented as a standard procedure in managing pediatric syphilis cases.
6. Improve environmental hygiene and educate families about proper hygiene practices. Emphasize the importance of not sharing personal items and maintaining clean living conditions to reduce transmission risks.

Future research should focus on understanding the prevalence of non-sexual syphilis transmission in children and identifying effective preventive measures. This is relevant in settings where close quarter living and shared personal items increase the risk of infection through cutaneous and mucosal lesions.

Funding: The author(s) declare that no financial support was received for this article's research, authorship, and/or publication.

Research Ethics Committee Approval: Municipal Program approved the studies involving humans of Sexually Transmitted Diseases. The studies were conducted following the local legislation and institutional requirements. The participants' legal guardians/next of kin provided written informed consent for participation in this study. Written informed permission was obtained from the individual(s) and minor(s)' legal guardian/next of kin to publish any potentially identifiable images or data in this article.

Acknowledgments: None.

Conflicts of Interest: The authors declare that the research was conducted with no commercial or financial relationships that could be construed as a potential conflict of interest.

Supplementary Materials: The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding author.

References

1. Woods CR. Syphilis in children: congenital and acquired. Semin Pediatr Infect Dis. (2005) 16(4):245-57. doi: 10.1053/j.spid.2005.06.005.
2. Moreira-Silva SF, Frauches DO, Prebianchi PA, Riccio CSB, Andreata GR, Oliveira CM, et al. Presence of condyloma lata in children with syphilis. DST - J Bras Doenças Sex Transm, (2006). 18(1):80-84. Available from: https://bdst.emnuvens.com.br/revista/article/view/620.
3. Deshpande DJ, Nayak CS, Mishra SN, and Dhurat RS. Verrucous condyloma lata mimicking condyloma acuminata: An unusual presentation. Indian J Sex Transm Dis AIDS. (2009) 30(2):100-2. doi: 10.4103/0253-7184.62766.
4. Long FQ, Wang QQ, Jiang J, Zhang JP, and Shang SX. Acquired secondary syphilis in preschool children by nonsexual close contact. Sex Transm Dis. (2012) 39(8):588-90. doi: 10.1097/OLQ.0b013e3182515764.

5. Narang T, Kanwar AJ, and Kumaran MS. Condyloma lata in a preschooler: The dilemma of sexual abuse versus non-abuse. Indian J Sex Transm Dis AIDS. (2013) 34(2):135-7. doi: 10.4103/0253-7184.120561.
6. Moscatelli G, Moroni S, Garcia Bournissen F, Falk N, Destito A, Gonzalez N, et al. Acquired Syphilis by Nonsexual Contact in Childhood. Pediatr Infect Dis J. (2021) 40(10):892-898. doi: 10.1097/INF.0000000000003215.
7. Yang WJ, Hu HH, Yang Y, Li JH, and Guo H. Unusual erythematous plaque with white scales, a case of acquired syphilis in a child and literature review. BMC Infect Dis. (2021) 21(1):528. doi: 10.1186/s12879-021-06114-7.
8. Forrestel AK, Kovarik CL, and Katz KA. Sexually acquired syphilis: Historical aspects, microbiology, epidemiology, and clinical manifestations. J Am Acad Dermatol. (2020) 82(1):1-14. doi: 10.1016/j.jaad.2019.02.073.
9. Brazil. Guidelines for the control of congenital syphilis: pocket manual [Portuguese]. (2006).72. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/manual_sifilis_bolso.pdf.
10. Committee on Infectious Diseases AAoP, Kimberlin DW, Barnett ED, Lynfield R, and Sawyer MH. Red Book: 2021–2024 Report of the Committee on Infectious Diseases. (2021): American Academy of Pediatrics. Available from: https://doi.org/10.1542/9781610025782. doi: 10.1542/9781610025782.
11. Vrolijk-Bosschaart TF, Brilleslijper-Kater SN, Benninga MA, Lindauer RJL, and Teeuw AH. Clinical practice: recognizing child sexual abuse-what makes it so difficult? Eur J Pediatr. (2018) 177(9):1343-1350. doi: 10.1007/s00431-018-3193-z.