

# International Journal of Health Science

Acceptance date: 16/10/2024

Submission date: 10/10/2024

## CASE REPORT: OSTEOMYELITIS IN A HEALTHY PATIENT: INITIAL PRESENTATION OF CONGENITAL SYPHILIS WITH NEGATIVE VDRL

---

***Bruna Cristine Zoz***

Estácio idomed College, Jaraguá do Sul/sc  
<http://lattes.cnpq.br/0000-0002-2103-7561>

***Suelen Borges Andreo***

Estácio IDOMED College, Jaraguá do sul /SC  
<http://lattes.cnpq.br/0000-0002-0763-2292>

***Priscila Gabriella Carraro Merlos***

children's hospital dr jeser amarante Faria,  
Joinville/SC  
<https://lattes.cnpq.br/4826995563406407>

***Fernando Merlos***

Estácio IDOMED College Jaraguá do Sul  
Joinville / SC  
<http://lattes.cnpq.br/0009-0002-4833-0458>

***Juliana Cecconello***

Dr. Jeser Amarante Faria Children's Hospital  
Joinville-SC  
<http://lattes.cnpq.br/7343397710548528>

***Mylena Denardi Proença***

Dr. Jeser Amarante Faria Children's Hospital  
Joinville-SC  
<http://lattes.cnpq.br/0000-0002-8746-7687>

***Isadora Fachim***

Dr. Jeser Amarante Faria Children's Hospital  
Joinville/SC  
<http://lattes.cnpq.br/8018090241172111>

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



**Aline Plucinski**

Dr. Jeser Amarante Faria Children's Hospital  
Joinville/SC  
<https://lattes.cnpq.br/2906802877449246>

**Beatriz Corrêa Pamplona**

Dr. Jeser Amarante Faria Children's Hospital  
Joinville/SC  
<http://lattes.cnpq.br/0821963481260927>

**Abstract:** The authors report the case of an 8-month-old pediatric patient with progressive and significant bone involvement. Radiography and computed tomography revealed osteolytic lesions which raised the hypothesis of congenital syphilis, where the mother had been previously treated during pregnancy. This is a relevant case due to the absence of symptoms at birth and a negative VDRL test, which was positive after 8 months. There are few case reports of patients with congenital syphilis presenting with osteomyelitis, and especially with a negative VDRL result at birth. Epidemiological data, as well as X-ray and CT scan findings, are relevant and will be discussed throughout the report until the diagnosis is made.

**Keywords:** Congenital syphilis; osteomyelitis.

## INTRODUCTION

Congenital syphilis (CS) is a clinical condition that severely affects newborn babies (NB) in various organ systems and, in extreme cases, can lead to death. It is caused by the hematogenous spread of the bacterium *Treponema pallidum*, transmitted from the infected pregnant woman to the fetus through the placenta. CS is a preventable disease through appropriate prenatal care, which involves early diagnosis and treatment of the infection in pregnant women(1). However, even with appropriate treatment, around 14% of cases may result in fetal death or the birth of children with evidence of congenital syphilis(2).

However, despite medical advances and health programs, congenital syphilis continues to affect a significant number of newborns in Brazil and other parts of the world, since the incidence rate of congenital syphilis and the detection rates of syphilis per thousand live births in Brazil between 2010 and 2017 were 2.4 to 8.6 and 3.5 to 17.2, respectively (3). This transmission can occur at any stage of pregnancy or stage of maternal infection.

The main factors influencing the likelihood of transmission include the stage of syphilis in the mother and the length of time the fetus is exposed to the bacteria during intrauterine development. Therefore, the transmission rate tends to be higher in the early stages of the disease, when there is a greater quantity of spirochetes circulating in the mother's body.(3)

The most characteristic signs of early congenital syphilis include fetal hydrops, mucosal lesions, skin lesions and bone lesions, such as osteitis, osteochondritis, periostitis and metaphysitis, characterized by the Weimberg sign. These bone lesions, part of which was found in the report described, are often associated with crying when the child tries to move, Parrot's pseudoparalysis, hepatosplenomegaly, jaundice and severe anemia.(4) In addition to bone and systemic manifestations, early congenital syphilis is also marked by distinct ophthalmological characteristics. Chorioretinitis, which has a "salt and pepper" appearance, is one of these distinctive features. In addition, there are lesions of an immunoallergic nature, such as deafness resulting from lesions in the VIII cranial nerve, Clutton's arthropathy (characterized by arthritis in the knees) and interstitial keratitis, which can progress to blindness. These complications usually result in permanent sequelae, but can be avoided if treatment of the syphilitic infection in the child is started by the third month of life after birth.(4) The progression time of the congenital infection is highly variable and can result in severe deformities, in which bone and cutaneous-mucosal tissues are destroyed and replaced by syphilitic granulation tissue. However, it is important to note that this destructive process can be interrupted with appropriate treatment, emphasizing the importance of early detection and therapeutic intervention in congenital syphilis.(4)

## CASE REPORT

Patient DVSC, 8 months old, weighing 9.25 kg, was brought by his mother to the emergency room on September 27, 2023, complaining of pain in his right leg for five days. The mother reported that the child was unable to support himself when held upright and showed discomfort when moving his leg. She also reported an episode of fever with a temperature of less than 38°C. A bilateral X-ray of the knees was taken, revealing osteolytic lesions in the distal third of the femur and the proximal third of the tibia in both limbs, as shown below (image 1).



Image 1 - Radiograph showing radiolucent lesions in the distal metaphyseal regions of the femur and distal tibia, bilaterally.

To complement the X-ray, a CT scan was taken (image 2), which corroborated the osteolytic lesions found.

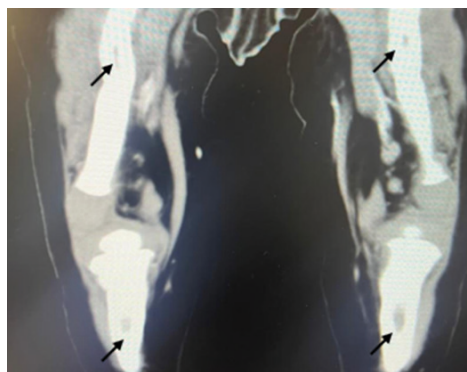


Image 2 - Tomography showing osteolytic lesions in the metaphyseal region of the right and left femur and metaphyseal region of the right and left tibia, poorly delimited in some places with cortical rupture (black arrows), located in the subcortical periphery.

Based on the clinical and laboratory history, a multifocal infection was diagnosed. A bone biopsy was chosen for the etiological diagnosis, since the clinical and laboratory picture was not characteristic of acute hematogenous osteomyelitis. The anatomopathological examination of the left proximal tibia confirmed the presence of chronic osteomyelitis, with other negative results. During an investigation into the patient's previous history, the mother reported having been diagnosed with syphilis during pregnancy and said that she had been adequately treated, as had the father. The VDRL at the patient's birth was non-reactive and the physical examination was normal, so the child was classified as a NB exposed to syphilis and should only be followed up as an outpatient in accordance with the Ministry of Health's protocol (which he did not do). In view of the bone lesions characteristic of congenital syphilis, the decision was made to carry out the entire investigation as CS in accordance with the Ministry of Health's protocol. In addition to the bone alteration, cerebrospinal fluid alteration was also found, with a positive VDRL in the cerebrospinal fluid and serum titration of 1/204, corroborating the diagnostic hypothesis of congenital syphilis. The patient was hospitalized and treated with a combination of Crystalline Penicillin for a period of 10 days. After discharge, the patient continued to be monitored with monthly/bimonthly VDRL tests.

## DISCUSSION

In this study, the mother underwent appropriate treatment during pregnancy and the newborn had a negative VDRL test at birth and was asymptomatic. After a few months, as he developed, he began to show clinical manifestations (pain in the lower limbs) which led to suspicions of congenital syphilis.

Among the clinical manifestations present, the child developed Parrot's pseudoparalysis, which, as already described, is characterized

by periostitis with pain on movement - the main complaint that led the mother to bring her child to hospital. In this pseudoparalysis, the etiological agent treponema affects the bone metaphysis and diaphysis, generating inflammation - metaphysitis - which accentuates fractures due to bone fragility (8). As a result, there is a reduction in movement associated with the patient's pain and local periostitis. Thus, the hypothesis of bone lesions - characteristic of congenital syphilis - was raised and the search for the etiology of the symptoms began. At the time, he had no ocular involvement and was released by the ophthalmologist.

According to Oliveira et al., 2023, the diagnosis of congenital syphilis should be made through a clinical-laboratory and epidemiological association, including a clinical-epidemiological history, non-treponemal laboratory tests (blood and cerebrospinal fluid), X-rays of the long bones and a blood count. Radiography is predominantly carried out on the most affected sites, the long bones, such as the radius, ulna, tibia, femur, humerus and fibula (10). In this case, the distal femur and proximal tibia and fibula were X-rayed, as described in the report (image 1), and multifocal osteolytic lesions were observed, which, as described in the literature, was suggestive of osteomyelitis - confirmed after biopsy. With a positive VDRL test in blood 1/2048 and cerebrospinal fluid 1/4, the diagnosis was confirmed, along with the correlation between clinical history, complementary exams and laboratory data. Treatment was started with Crystalline Penicillin 50,000UI/kg/dose 4/4h IV for 10 days. During the drug treatment, the patient began to evolve without pain and to slightly support his lower limbs, but he still couldn't crawl. After being discharged from hospital with the end of the antibiotic treatment, he began to be monitored by a physiotherapist to improve the mobility of his lower limbs, and he remained afebrile and in good general condition.

## CONCLUSION

In view of the above, it is essential to emphasize the importance of following up all patients exposed to syphilis during pregnancy, even if they do not qualify as congenital syphilis. It is clear from this case that if this patient had been properly followed up, an early diagnosis would have been made and the

patient would probably not have developed bone lesions. It is important to always think about this diagnosis, when we have a patient presenting symptoms of pain and discomfort when moving the lower limbs, characteristic of Parrot's pseudoparalysis, and also X-rays with bilateral lytic lesions in both long bones, to consider congenital syphilis as a possible clinical diagnosis.

## REFERENCES

1. AVELLEIRA, João Carlos Regazzi; BOTTINO, Giuliana. **Syphilis: diagnosis, treatment and control**. Anais brasileiros de dermatologia, v. 81, p. 111-126, 2006.
2. Diretrizes para controle da sífilis congênita: manual de bolso/Ministério da Saúde, Secretaria de Vigilância em Saúde, Programa Nacional de DST/Aids. 2nd edition. Brasília: Ministry of Health; 2006.
3. DOS PASSOS FRAUCCHES, Sandy et al. **PSEUDOPARALISIA DE PARROT: IMPORTANCE OF COMPLETE TREATMENT OF CONGENITAL SYPHILIS**. In: ANNALS OF THE III CONGRESS OF MEDICINE STUDENTS OF UNIFESO-III CEMED. p. 111.
4. Figueiredo DCMM, Figueiredo AM, Souza TKB, Tavares G, Vianna RPT. **Relationship between the provision of syphilis diagnosis and treatment in primary care and the incidence of gestational and congenital syphilis**. Cad Saúde Pública. March 23, 2020;36(3):e00074519Portuguese. doi: 10.1590/0102-311X00074519. PMID: 32215510.
5. Mohammad H, et al. **Skeletal manifestations of congenital syphilis: rare but clinically relevant**. Radiol Case Rep. 2021;16(12):3635-3637.
6. OLIVEIRA, Laíse Andrade; LOPES, Izailza Matos Dantas. **Evaluation of bone alterations in radiographs of long bones in early Congenital Syphilis: integrative review**. Revista Brasileira de Desenvolvimento, v. 9, n. 05, p. 17536-17548, 2023.
7. RAC, MWF; REVELL, PA; EPPES, CS **Syphilis during pregnancy: a preventable threat to maternal-fetal health**. American Journal of Obstetrics and Gynecology, St. Louis, v. 216, n. 4, p. 352-363, 2017. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0002937816321676> . Accessed on: October 13, 2023.
8. Schulz KF, Murphy FK, Patamasucon P, Meheus AZ. Congenital syphilis. In: Holmes K, Mardh P, Sparling PF, et al., eds. **Sexually transmitted diseases**. 2nd ed. New York: McGraw-Hill, 1990:821-42.
9. SONDA, Eduardo Chaida et al. **Congenital syphilis: a review of the literature**. Revista de Epidemiologia e controle de Infecção, v. 3, n. 1, p. 28-30, 2013.
10. TREATADO DE PEDIATRIA: Sociedade Brasileira de Pediatria, 4th edition, Barueri, SP: Manole, 2017.