Residência RP Pediátrica
Publicação Oficial da Sociedade Brasileira de Pediatria
ISSN-Online: 2236-6814

Submitted on: 10/29/2018
Approved on: 04/21/2019

CASE REPORT

Congenital syphilis diagnosed through the red reflextest

Rafaela Silva Acácio[1], Arikleber Freire Silva[1], Francis Sharaym Melo Carvalho[1], Mariele Aparecida Santana[1], Rachael Choucair Ferreira[1], Teresa Zavaris Nobre[1], Typhanie Soares Santos[1], Izailza Matos Dantas Lopes[2]

Keywords:
Syphilis, Congenital, Chorioretinitis, Prenatal Care.

Abstract

Objectives: To describe the case of congenital syphilis (CS) with diagnosis after discharge from the maternity hospital, showing ocular and bone manifestations of the disease. **Methods:** Case report of a child with late diagnosis of early CS performed by detecting ocular changes in the child found in the Red Reflex Test. **Discussion:** With the negative maternal VDRL in the third trimester and intrapartum, by the current protocol of the Ministry of Health, this newborn does not enter the screening criteria at the time of delivery and subsequent follow-up. In addition, diagnosis is made difficult because 70% of infected children are asymptomatic. The improvement of the prenatal service, with diagnosis and early treatment of pregnant women and their partners may be a strategy to improve the rates of congenital syphilis in Brazil. **Conclusions:** The case described shows the fragility of this protocol and suggests the need to develop epidemiological studies that reflect the Brazilian reality and ensure a protocol more sensitive to the detection of children at risk of neonatal infection. If this child did not have ophthalmological changes, it would hardly be treated for CS at risk of dying or developing severe complications of the disease.

[1] Santa Isabel Maternity and Hospital, Pediatrics Resident - Aracaju - Sergipe - Brazil.
[2] Santa Isabel Maternity and Hospital, Pediatrics Residency Coordinator - Aracaju - Sergipe - Brazil.

Correspondence to:
Izailza Matos Dantas Lopes.
Hospital e Maternidade Santa Isabel. Av. Simeão Sobral, s/n, Santo Antônio. Aracaju - SE. Brazil. CEP: 49060-640. E-mail: izailzamatos@gmail.com

INTRODUCTION

Congenital syphilis (CS) is an infection resulting primarily from the hematogenous dissemination of Treponema pallidum to the fetus through the placenta of a mother infected during pregnancy.[1]

The World Health Organization (WHO) estimated the incidence of syphilis at 12 million new cases a year, one million of which involving pregnant women. Even in developed nations syphilis infection during pregnancy is a significant cause of infant death and morbidity. A quarter of the pregnant women inadequately treated or left untreated during pregnancy have miscarriages in the second trimester or experience fetal death; 11% of their fetuses die after full-term pregnancies; 13% die after preterm birth or with low birth weight; and 20% of the newborns present signs suggestive of congenital syphilis.[2,3]

According to the Brazilian Ministry of Health (2016), adequate treatment during pregnancy is defined by a protocol in which every pregnant woman is treated with benzathine benzylpenicillin based on the clinical stage of the disease. Administration starts 30 days before delivery with proper intervals and dosage. Patients are assessed for the risk of reinfection and have documented VDRL test results showing decreases of two dilutions in test titers three months and four dilutions six months after the end of treatment.[4]

Recent data from the 2017 Syphilis Epidemiology Report revealed increasing incidence rates and infant death by the disease. In 2006, the incidence rate of CS was 2.0 cases/1,000 live births; in 2016, the number went up to 6.8 cases/1,000 live births. The number of reported cases of the disease increased by 4.7% from 2015 to 2016 in Brazil, thus pushing incidence rates up. The incidence rate of CS in the Brazilian State of Sergipe (8.8 cases/1,000 live births) is above the national average. Aracaju is one of the State capitals in Brazil with an incidence rate of syphilis that is higher than the detection rate of the disease in pregnant women, a possible indication of gaps in diagnosis during pregnancy.[3]

The red reflex test (RRT) was designed to identify early ocular disorders and prevent infant blindness. Conditions picked up by the test include retinoblastoma, cataracts, glaucoma, and chorioretinitis. They may be associated with a number of congenital diseases, including syphilis. Fundoscopy is performed to confirm the presence of these conditions. Ocular involvement by syphilis may occur at any stage of the disease and requires medical attention and investigation, since two thirds of the infants with CS are asymptomatic and the symptoms manifested by the other third may be non-specific and subtle.[5,6]

This paper describes a case of CS undiagnosed at the time of delivery. The red reflex test was used to indicate treatment completion.

CASE REPORT

The mother included in the study was a 28-year-old woman pregnant for the first time. She had high school education and worked as a receptionist for a minimum wage. Her partner was an unemployed 22-year-old man with incomplete middle school education. She went to nine prenatal care visits during pregnancy. Her VDRL test titer on week 16 was 1:32 and her partner's was non-reactive. The two were treated with benzathine benzylpenicillin 2,400,000 IU three doses every seven days. The VDRL tests performed in the third trimester and at the time of delivery were non-reactive.

The infant was born of a cesarean section after a full-term pregnancy. He had an Apgar score of 9 at 1 and 5 minutes. His weight, length and head circumference were 3925g, 51 cm, and 34 cm, respectively. Since his mother had a non-reactive VDRL test at the time of delivery, the infant did not undergo peripheral blood VDRL testing. RRT performed during neonatal screening at the maternity hospital yielded altered results. At the age of 75 days, the infant was referred to an ophthalmologist and was diagnosed with scarring in his left eye suggestive of congenital disease.

At the age of five months and five days, the infant was admitted with early-stage CS based on positive epidemiology findings for maternal syphilis during pregnancy, ocular disorders, and long bone metaphysitis, which combined yielded a diagnosis of presumptive congenital syphilis. Serology for congenital diseases was negative, syphilis included. CSF-VDRL was non-reactive (Table 1). The infant was treated with crystalline penicillin for 10 days. The infant progressed without complications or complaints since admission and during treatment. He was discharged and referred to outpatient care at the CS ward.

At the age of one year, the infant was asymptomatic with growth z-scores of 0 and 2 for length, head circumference, and weight. The global development milestones for his age were met. His peripheral blood VDRL test remained non-reactive and his long bones presented metaphysitis

DISCUSSION

The obstacles to diagnosing infants with early-stage congenital syphilis impair the management of the disease. The diagnosis of CS is complex, since maternal IgG transfers to the fetus and affects the interpretation of newborn serology results. There is no specific immunologic test to unequivocally diagnose infection in neonates, but protocols can be used to define cases suspected for disease and indicate possible courses of treatment.[7]

The diagnosis of congenital syphilis requires the existence of a positive VDRL test performed during pregnancy and calls for the administration of proper treatment to the mother,

Table 1. Data used to diagnose the patient described in this case with presumptive congenital syphilis.

Prenatal maternal peripheral blood VDRL test	01:32
Maternal peripheral blood VDRL test at delivery and 5 months after delivery	Non-reactive
Partner VDRL test at delivery and 5 months after delivery	Non-reactive
Newborn symptoms at birth	Asymptomatic
Infant complete blood count 5 months after birth	Normal
Infant long bone X-rays 5 months after delivery	Metaphysitis in all long bones
Infant peripheral blood VDRL test 5 months after delivery	Negative
Infant CSF-VDRL 5 months after delivery	Negative
Newborn red reflex test at birth	Altered
Infant fundoscopy at the age of 75 days	Chorioretinitis

Source: authors.

detailed physical examination of the newborn, laboratory tests (complete blood count, peripheral blood VDRL test, CSF-VDRL test, cell counts, and protein levels), and long bone X-rays. Regardless of the quality of treatment provided to their mothers, neonates with a non-reactive peripheral blood VDRL test must be followed on a monthly basis at the outpatient ward until they are six months old and then every two months until they reach the age of two years. Peripheral blood VDRL testing must be repeated at 1, 3, 6, 12, and 18 months of age.[4]

Early-stage congenital syphilis (signs and symptoms appearing until two years of age) may lead to prematurity, low birth weight, hepatosplenomegaly, jaundice, leukocytosis or leukopenia, thrombocytopenia, serous bloody nasal discharge, palmar/plantar bullous pemphigoid, and secondary stage syphilis sores. Chorioretinitis and congenital cataracts can be identified via the red reflex test.[8] The bone alterations viewed in X-rays were metaphysitis (more prevalent), periostitis, osteosclerosis, osteochondritis, and epiphysitis less frequently. They may be associated with Parrot's pseudoparalysis and are symmetric, bilateral, and affect 50% of the newborns with syphilis.[6,9]

According to the Brazilian Ministry of Health, the clinical condition, diagnosis, and treatment of syphilis during pregnancy is not different from the treatment prescribed to non-pregnant individuals, but treatment may fail in 14% of the cases compared with acquired syphilis. Treatment failure may occur due to pregnancy changes, co-infection by HIV or other agents, or inadequate treatment.[10]

Immunologic tests are not very specific at detecting disease in pregnant women provided proper treatment with infection and non-reactive VDRL tests in the third trimester and at the time of delivery, as in this case report. This places neonates at risk, since they may not be offered treatment. The newborn discussed in this case was born from a mother with a non-reactive VDRL test at delivery and, therefore, was not included in the screening protocol established by the Ministry of Health or followed up for congenital syphilis.[3]

According to Cerqueira et al. (2017), sentinel studies found that the prevalence of congenital syphilis in Brazil has decreased in the last decade. This finding was not reflected in some Brazilian States, including Rio de Janeiro, in which poor delivery of prenatal treatment to pregnant women and their partners and the practice of unprotected sex have increased the prevalence of infection.[11]

CONCLUSION

Congenital syphilis is a public health issue and an indicator of maternal and neonatal healthcare quality. Improving prenatal care with early diagnosis and treatment for pregnant women and their partners might decrease the number of cases of syphilis in Brazil. Fundoscopy confirmed the alterations seen in our patient's RRT and indicated the infant had chorioretinitis. Long bone X-rays revealed he had metaphysitis, which confirmed the diagnosis of CS. The case described herein exposes the weaknesses of the protocol currently in effect in Brazil and indicates the need to perform epidemiology studies to reflect the reality of the condition in the nation to ensure a more sensitive protocol is implemented to improve the diagnosis of infants at risk of neonatal infection. Had it not been for the ocular disorders, it is unlikely that the infant described in this report might have been treated for CS, which could have caused his death or the development of more severe complications of the disease.

REFERENCES

1. Patel NU, Oussedik E, Landis ET, Strowd LC. Early congenital syphilis: recognising symptoms of an increasingly prevalent disease. J Cutan Med Surg. 2018 Jan/Feb;22(1):97-9.
2. Andrade ALMB, Magalhães PVVS, Moraes MM, Tresoldi AT, Pereira RM. Diagnóstico tardio de sífilis congênita: uma realidade na atenção à saúde da mulher e da criança no Brasil. Rev Paul Pediatr. 2018;36(3):376-81.
3. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Programa Nacional de DST e AIDS. Boletim epidemiológico sífilis - 2017. Brasília (DF): Ministério da Saúde; 2017.
4. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Departamento de Vigilância, Prevenção e Controle das Doenças Sexualmente Transmissíveis, Aids e Hepatites Virais. Manual técnico para diagnóstico da sífilis. Brasília (DF): Ministério da Saúde; 2016.

5. Malerbi FK, Ghanem RC, Chiang J, Takahashi WY. Descolamento de retina exsudativo bilateral associado a alterações de comportamento em paciente com diagnóstico de neurossífilis: relato de caso. Arq Bras Oftalmol. 2006 Fev;69(1):115-8.
6. Agrawal PG, Joshi R, Kharkar VD, Bhaskar MV. Congenital syphilis: the continuing scourge. Indian J Sex Transm Dis AIDS. 2014;35(2):143-5.
7. Cavagnaro FSM, Pereira TR, Pérez CP, Vargas FDV, Sandoval CC. Early congenital syphilis. A case report. Rev Chil Pediatr. 2014;85(1):86-93.
8. Dorsch FLB, Marvila MHR, Passamani RPS, Frauches DO. Alterações ao teste do reflexo vermelho em recém-nascidos internados na unidade de terapia intensiva de um hospital filantrópico em Vitória/ES, Brasil. Rev Bras Pesq Saúde. 2016;18(3):49-57.
9. Gameiro VS, Labronici PJ, Rosa IMA, Silva JAS. Sífilis congênita com lesão óssea: relato de caso. Rev Bras Ortop. 2017 Nov;52(6):740-2.
10. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Programa Nacional de DST e AIDS. Protocolo para prevenção de transmissão vertical de HIV e sífilis: manual de bolso. Brasília (DF): Ministério da Saúde; 2007.
11. Cerqueira LRP, Monteiro DLM, Taquette SR, Rodrigues NCP, Trajano AJB, Souza FM, et al. The magnitude of syphilis: from prevalence to vertical transmission. Rev Inst Med Trop S Paulo. 2017;59:e78.