



Ensuring Treatment to Contacts: An Urgent Need in Syphilis

Lyanne Paola Mesa-Huérfano¹, Mónica Liseth Holguín Barrera², Lorena García-Agudelo^{3*}, Ledmar Jovanny Vargas-Rodríguez⁴ and Jeinny Lucero Ruiz-Muñoz⁵

¹Médico General, Departamento de Investigación, Hospital Regional de la Orinoquía, Yopal, Colombia

²Medico Residente Programa De Pediatría, Universidad del Sinú, Cartagena, Colombia

³Magíster VIH SIDA, Oficina De Investigación, Hospital Regional de la Orinoquía, Yopal, Colombia

⁴Médico Epidemiólogo, Universidad de Boyacá, Hospital Universitario San Rafael, Tunja, Colombia

⁵Médico General, Facultad De Medicina, Universidad de Boyacá, Tunja, Colombia

*Corresponding Author: Lorena García-Agudelo, Magíster VIH SIDA, Oficina De Investigación, Hospital Regional de la Orinoquía, Yopal, Colombia.

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Abstract

Introduction: Syphilis is a sexually transmitted disease, which reaches the fetus by transplacental route or by contact with lesions in the birth canal, which can produce congenital syphilis that generates multiple repercussions on the health of the newborn if it is not diagnosed and treated in a timely manner.

Case Report: Male infant, cesarean section at 34.1 weeks, mother with gestational syphilis, birth weight 2090 grams. He presented transient tachypnea requiring supplemental oxygen, abdominal distension, hepatomegaly and jaundice. Paraclinical examinations confirmed the diagnosis of congenital syphilis, so he was managed with crystalline penicillin presenting good clinical evolution, however, sequelae were not ruled out.

Conclusion: Congenital syphilis has a significant impact on the quality of life of the newborn. It is striking that in the countries there are guidelines for the control of this disease; however, the number of cases has not been reduced due to risky sexual practices, failure to adhere to treatment and the fact that treatment of contacts is not guaranteed.

Keywords: Syphilis; Congenital; *Treponema pallidum*; Transient Tachypnea of the Newborn

Introduction

Syphilis is a sexually transmitted infection caused by *Treponema pallidum*, through contact with mucosal lesions, blood transfusion, transplacental route to the fetus or contagion in the birth canal, which has a higher risk of transmission in recent maternal infection and at greater gestational age [1,2], a pregnant woman with primary or secondary syphilis has a 60 to 90% chance of transmitting the disease to the fetus, while a woman with early syphilis has a 40% chance [3].

The World Health Organization estimates that in 2016 there were 5.6 million new cases of syphilis worldwide between the ages of 15 and 49, with a global incidence rate in men and women of 1.5 cases per 1000. Based on data from 37 countries in the Region of the Americas, there were an estimated 22,800 cases of mother-to-child transmission of syphilis in 2015 [4].

Congenital syphilis may be asymptomatic in the first few days and present symptoms between the third and eighth week; early

when they occur in the first two years of life and late if they occur after two years [5].

Untreated syphilis during pregnancy leads to adverse outcomes, such as stillbirth, prematurity, and neonatal death, in up to 80% of affected pregnancies [6].

Treatment of syphilis is easily accessible, inexpensive, short and guarantees the cure of this disease [2].

A case of congenital syphilis is presented in order to highlight that it is a preventable and treatable disease continues to increase; patient education in primary care should be strengthened and treatment of maternal contacts with syphilis should be ensured.

Clinical Case

Male newborn, fruit of third pregnancy, mother of 26 years, migrant, without prenatal controls, product of cesarean section at 34.1 weeks due to unsatisfactory fetal status, severe maternal anemia (hemoglobin 4.5 g/dl), previous cesarean section and amniotic fluid with meconium.

Physical examination: birth weight of 2,090 grams, height 45 cm, head circumference: 32 cm, thoracic circumference: 30 cm, Apgar 7 per minute, 8 at 5 minutes and 9 at 10 minutes of life, with vital signs showing blood pressure 73/39 mmHg, respiratory rate 46, heart rate 130, temperature 36.3°C, oxygen saturation of 87%, distended abdomen, hepatomegaly with 3 cm below costal ridge, no other findings. started CPAP (Continuous Positive Airway Pressure), orogastric tube, ordered complementary studies and transfer to the neonatal unit. Reports of serology of admission of the mother: reactive with 256 dilutions and FTA ABS (Fluorescent Treponemal Antibody Absortion) positive, and indicated treatment with penicillin to her and her partner.

Newborn analyses reported VDRL with 8 dilutions, impaired liver function, thrombocytopenia, Mother O positive, neonate A positive (Table 1).

They considered that it presented with transient tachypnea of the newborn and pulmonary hypertension in a patient with congenital syphilis with group incompatibility, so they ordered management with simple phototherapy, sildenafil for 7 days, crystal-line penicillin 105,000 intravenously every 12 hours for 7 days and amikacin 30 mg intravenously daily for 7 days, the latter due to suspicion of early neonatal sepsis.

Laboratories	First day	Third day	Reference values
Leukocytes	23.550	29.220	
Neutrophils	61%	50%	
Lymphocytes	35%	42%	
Hemoglobin	18.3 g/dl	19.8 g/dl	
Hematocrit	54.2 %	57.4 %	
Platelets	58.800	92.000	140000-440000
PCR	48 mg/L	12 mg/L	< 6
Albumin		2.50 g/dl	2,80 - 4,40
Total bilirubins		21.53 mg / dl	1.0 - 12
Direct bilirubin		7.13 mg/dL	
AST	688 U/L	185 U/L	38 U/L
OLD	216 U/L	100 U/L	41 U/L
PTT		50.7 seconds	Daily control 26.2
PT		23.7 seconds	Daily control 13.2
		INR 1.84	
VDRL syphilis	8 dilutions		
CSF syphilis		Negative	
Rubella IgM	Negative	0.443	Cut-off point 0.9
Hemoclassification	A positive		

Table 1: Most relevant laboratory tests, within the first 72 hours of evolution.

The images performed reported: chest x-ray (Figure 1), abdominal x-ray (Figure 2a and 2b) and long bone x-ray (Figure 3a and 3b); total abdominal ultrasound reported mild dilation of intestinal loops; transfontanelar ultrasound reported grade I left germinal matrix hemorrhage; and control at 10 days within normal limits.

They performed lumbar puncture that ruled out neuroinfection, coagulation times and prolonged international normalized index (INR), so they considered management with vitamin K 1 mg daily for 5 days, discontinued amikacin for negative blood cultures and ophthalmology considered that it did not present with signs of ophthalmopathy.

The patient remained for 12 days in the neonatal unit, overcame respiratory distress, complete antibiotic regimen, received management with multivitamins, did not document syphilis lesions, explained to the mother that close follow-up should be done because there was the possibility of developing them during the first years of life and was discharged.



Figure 1: Chest x-ray. Pulmonary parenchyma without alteration, mediastinum without alterations, pleural effusion is not observed, bone structures visualized without alterations.



Figure 3a and 3b: X-ray of long bones. Adequate conformation of the bone structures of the upper and lower limb without observing traces of fractures or alterations in bone density, adequate congruence of the proximal and distal joints of the limbs (Figure 3a). Skull bones of normal morphology with preservation of fontanelar spaces (Figure 3b).

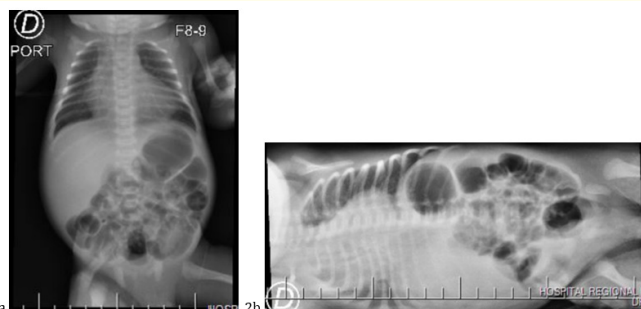


Figure 2a and 2b: X-ray of anteroposterior abdomen (Figure 2a) and lateral abdomen with horizontal lateral ulnar ray (Figure 2b). Presence of probe in distal third of the esophagus, normal intestinal luminogram, distal air present, no signs of pneumoperitoneum, silhouette of solid organs visualized within normal limits, no significant alterations in bone structures are observed.

Patient readmitted to neonatal unit at three days had 15 days of life for presenting weight loss 3.3%, referred from the kangaroo mother program in order to guarantee enteral contribution and surveillance of weight gain. They performed an echocardiogram that reported cardiac anatomy in normal parameters, without signs of pulmonary hypertension. He presented adequate weight gain so they discharged. She continued to be monitored by kangaroo mother program, at present no alterations have been documented, it was established that even the mother's partner has not received treatment for syphilis.

Discussion

Gestational syphilis is relevant because of its vertical transmission in pregnancy, by hematogenous, transplacental route or through the birth canal when having contact with lesions [7,8].

There is a dramatic increase in cases of congenital syphilis in Colombia, in 2019 an increase of 18.6% compared to 2018, and an incidence of 1.8 cases per 1,000 live births [7]. For the hospital where this case was diagnosed, the increase has been related to the increase in the migrant population in the region, in this case, the mother arrived for emergencies without previous prenatal check-ups.

The effects on the newborn depend on the time of infection in the mother and when she received treatment or was not treated [9]. Perinatal alterations occur in more than half of pregnant women with active disease without treatment, such as abortion, neonatal death in 30 to 50% of cases, premature birth, growth retardation, low birth weight and postnatal sequelae, such as mental retardation, hydrocephalus, blindness and deafness, is the second most common infectious cause of fetal death in the world [10].

Newborns with congenital syphilis usually show no visible signs of the disease at first, but after a few weeks they have visible clinical features. The early manifestations are early inflammation of the skin, rags, atrophic glossitis, hepatosplenomegaly, generalized lymphadenopathy, palmar pemphigus, diffuse maculopapular rash, petechiae, aseptic meningitis, chorioretinitis, among others. Late manifestations include: saddle nose, Hutchinson's teeth, interstitial keratitis up to optic atrophy and mental retardation, hydrocephalus, convulsions, or deafness [11]. In this report, edema and hepatomegaly were evidenced, no other alteration was documented.

According to the clinical practice guidelines in Colombia, a case of congenital syphilis is that case: the result of the gestation of a

mother with gestational syphilis without treatment or with inadequate treatment, or the result of gestation with a non-treponemal test with titers four times greater than the maternal titers at the time of delivery, or newborn child of a pregnant woman diagnosed with syphilis in the current pregnancy, with one or more manifestations suggestive of congenital syphilis, physical examination with paraclinical examinations suggestive of congenital syphilis, or fruit of gestation with demonstration of *Treponema pallidum* [12]. Criteria met by the patient we present despite the fact that no anatomical alterations typical of this condition were documented.

In the diagnostic tests are the non-treponemal ones such as the VDRL and the RPR (Rapid Plasma Reagin) that are used as screening and evaluation of the efficacy of the treatment with a specificity of 98%, low sensitivity in early primary syphilis and high in secondary 100%, and treponemal tests that have been used as confirmatory tests, such as FTA-ABS which is highly sensitive and TPH (Treponema Pallidum Haemagglutination Assay) with sensitivity of 98-99%, both with specificity of 100% [5,13]. Both the neonate and the mother underwent treponemal and non-treponemal tests.

The treatment of congenital syphilis is crystalline penicillin G 100,000 IU/Kg/IV divided into two doses, every 12 hours for 7 days and then continue with 150,000 IU/Kg/IV from day 8 to 10 administered in three doses of 50,000 IU/Kg each, and follow-up with nontreponemal test every 3 months until the year, to negativization or to persistently low titers on at least two separate measures [12]. In this case, despite the treatment established, it is not ruled out that in the future it presents significant manifestations or injuries.

Sánchez MA., *et al.* in their study of 462 migrants, where 15.4% of pregnant women had antibodies against syphilis, concluded with a high prevalence of syphilis among the population evaluated, migrants present vulnerabilities associated with sexual behavior, so prevention, diagnosis and treatment measures should be focused for this population group [14].

In a descriptive study carried out in a hospital in a city on the border with Venezuela to determine the incidence of gestational syphilis between 2017 and 2022, they showed an increase in the incidence of this pathology in the last 5 years in Norte de Santander and that it obeys to migrant population with poor prenatal controls, so they emphasize the need to carry out relevant interventions in order to mitigate vertical transmission to children newborns [15]. Same phenomenon observed in the region where this research work was carried out.

Conclusion

Congenital syphilis continues to increase worldwide, despite being a preventable and curable disease, there are guidelines that seek complete control; however, this has not been achieved due to risky sexual practices, lack of adherence to treatment and ignorance of people, we consider it essential to always guarantee treatment to contacts of maternal women who are diagnosed with gestational syphilis.

Summary

Introduction: Syphilis is a sexually transmitted disease, which reaches the fetus transplacentally or by contact with lesions in the birth canal, which can produce congenital syphilis that generates multiple repercussions on the health of the newborn if it is not diagnosed and treated in a timely manner.

Clinical Case: Male infant, cesarean section at 34.1 weeks, mother with gestational syphilis, birth weight of 2090 grams. He presented transient tachypnea that required supplemental oxygen, abdominal distension, hepatomegaly and jaundice, paraclinical examinations confirmed the diagnosis of congenital syphilis, so he was managed with crystalline penicillin presenting good clinical evolution, however, sequelae were not ruled out.

Conclusion: Congenital syphilis has a significant impact on the quality of life of the newborn. It is striking that in the countries there are guidelines seeking the control of this disease; However, it has not been possible to reduce the number of cases, due to risky sexual practices, failures in adherence to treatment and the fact that the treatment of contacts is not being guaranteed.

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