



Management of Early Congenital Syphilis in a Newborn Case with Maculopapular Rash

Makülopapüler Döküntüsü Olan Erken Konjenital Sifilizli Olguda Tedavi Yönetimi

Özgün Uygur¹, Burçe Emine Yaşar¹, Zümrüt Şahbudak Bal², Özge Altun Köroğlu¹, Mehmet Yalaz¹, Mete Akisü¹, Fadıl Vardar², Nilgün Kültürsay¹

¹Ege University Faculty of Medicine, Department of Pediatrics, Division of Neonatology, İzmir, Turkey

²Ege University Faculty of Medicine, Department of Pediatrics, Division of Pediatric Infectious Diseases, İzmir, Turkey

ABSTRACT

Congenital syphilis is preventable with proper antenatal follow-up and treatment of the pregnant woman infected with *Treponema pallidum*, and the rapid evaluation and early treatment of the newborns. Here we report a newborn with early congenital syphilis presenting with maculopapular rash and positive treponemal test born to an inadequately treated syphilitic mother.

Keywords: Syphilis, congenital, maculopapular rash, newborn

ÖZ

Konjenital sifiliz, *Treponema pallidum* ile enfekte olan annelerin prenatal dönemde düzenli izlem ve etkin tedavilerinin sağlanması, doğum sonrası bebeklerin hızla değerlendirilip erken tedavi edilmeleriyle önlenabilir. Burada annesi sifiliz tanısıyla yetersiz tedavi almış, makülopapüler döküntülerle başvuran maternal treponemal testi pozitif saptanarak erken konjenital sifiliz tanısıyla başarıyla tedavi edilen yenidoğan hasta sunulmaktadır.

Anahtar Kelimeler: Sifiliz, konjenital, makülopapüler döküntü, yenidoğan

Introduction

Treponema pallidum, which causes syphilis, is a microaerophilic, mobile, Gram-negative spirochete. It is usually transmitted by sexual contact (1,2). Congenital syphilis is a clinical state caused by the transmission of the spirochetes from the infected mother to the baby. The baby is infected mostly transplacentally or by contact with active lesions during labor. Placental transmission incidence is 70-100% for primary syphilis, 40% for early latent syphilis, and 10% for late latent syphilis (3).

Congenital acquired infection may lead to abortion, stillbirth, prematurity, low birth weight, and a severe clinical manifestation in the neonatal period (1,4). However, the early treatment at the onset of syphilis may prevent the development of severe syphilis and late syphilis symptoms (5).

In this report, a case born to a mother with syphilis, and diagnosed via maculopapular rash on the second day of life is described in order to emphasize the importance of early treatment in congenital syphilis. Written informed consent was obtained from the family for the publication of this case report.

Address for Correspondence/Yazışma Adresi

Nilgün Kültürsay MD, Ege University Faculty of Medicine, Department of Pediatrics, Division of Neonatology, İzmir, Turkey
Phone: +90 232 390 10 11 E-mail: nilgunkultursay@gmail.com ORCID ID: orcid.org/0000-0003-0867-1514

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immunoglobulin (Ig) G + IgM (23.83 IU/mL) was detected positive. The results were evaluated as treatment efficacy. At the end of the treatment VDRL test control was planned. During the follow-up, a rapid recovery was observed in the rash and he was discharged from the hospital. The baby is now 3 months old and has had no complaints during this period. VDRL/RPR tests were negative after treatment and at the third month of life, also *T. pallidum* IgG + IgM levels of the patient were decreased at the third month control (22.42-13.48 IU/mL).

Discussion

Although the treatment of congenital syphilis is simple and effective, it is still an important health problem today. According to World Health Organization 2008 data, approximately 1.9 million syphilis-infected women get pregnant each year. Half of these pregnancies have negative consequences including syphilis-related abortion, stillbirth and many severe clinical symptoms (4).

In congenital syphilis, multiple common severe organ involvements or only laboratory findings may be observed due to antenatal hematogenous spread. Congenital syphilis is divided into two categories according to the time of appearance of the clinical findings. Early congenital syphilis is defined when the clinical findings are observed in the first two years of life. The group that is clinically symptomatic until 20 years of age after two years of life is considered late congenital syphilis.

In early congenital syphilis, the most common finding in infected infants is hepatomegaly and is observed in almost all infected infants (7). Jaundice and elevated transaminase enzymes can also be detected due to hepatic involvement (2,8). Skin rashes observed in 68% of congenital syphilis newborns are another common finding. Bullous and nonspecific maculopapular rashes involving the palms and soles of the feet are also frequently seen. The only pathological finding in our case was maculopapular rash. Syphilitic rhinitis, which is the earliest finding that can be seen in the first week of life, is often serious, it can be bloody and purulent, and is very infectious. Also bone pathologies due to syphilis involve more than one bone, usually bilateral and symmetric. Osteochondritis, which is observed the most, may cause pain and limit the movements of the baby. Therefore, this clinical situation is called "Parrot's pseudoparalysis".

Neurosyphilis is asymptomatic in 40% of the patients and has two clinical presentations. The symptoms of acute syphilitic leptomeningitis are observed usually within the first year, especially in the first 3-6 months. The clinical findings are similar to those of bacterial meningitis with symptoms including vomiting, nourishment disorders, fontanel bulging and rapid increase around the head. However, there is a resemblance between the findings of cerebrovascular fluid to aseptic meningitis, and there is mononuclear cell dominance. This clinical state responds quickly to antibiotics. Chronic

meningovascular syphilis, symptomatic at the end of the first year of life, is characterized by hydrocephalus, cranial nerve paralysis, growth retardation, optic atrophy and seizures (2,7).

The most common laboratory findings in congenital syphilis are anemia (58%), thrombocytopenia and leukopenia/leukocytosis (72%) (8). Nonimmun hydrops fetalis may occur rarely due to anemia.

Late-stage congenital syphilis symptoms are present in approximately 40% of the patients who do not receive early treatment, and these findings are often irreversible. Saddle nose, saber shin tibia, short maxilla, frontal protrusion can occur due to bone destruction. Dental anomalies can develop as a result of syphilitic vasculitis. The most common dental changes are half-moon shaped notches on the free edges of the upper cutter teeth. These lesions called Hutchinson's teeth are the most common specific dental lesions (8). Because they are seen in the fixed teeth coming after the milk teeth, they are accepted as persistent symptoms (9). For this reason, regular teeth control is recommended for children after six years of age. One of the most important findings of late-stage syphilis is the 8th cranial nerve paralysis, which usually manifests itself with hearing loss at the age of 8-10 (2,7). The coexistence of Hutchinson's teeth, interstitial keratitis, and sensorineural hearing loss are defined as the "Hutchinson triad".

Dark field microscopy, direct fluorescent antibody testing, and DNA-polymerase chain reaction testing can be performed for the diagnosis of syphilis but all these methods are difficult to apply. Therefore, serological tests are used today because they are often cheaper and faster. While non-treponemal tests (NTTs), VDRL test and RPR tests are used for screening, follow-up and treatment, treponemal tests are used to verify the diagnosis (7). Treponemal tests can be classified as *T. pallidum* immobilization (TPI) test, TPHA, fluorescent treponemal antibody test, and microhemagglutination assay-*T. pallidum* test. In our case, VDRL from NTTs and *T. pallidum* IgG + M from treponemal tests were positive, and both of the tests showed a decrease with the treatment.

After being successfully used in the treatment of three syphilitic patients, penicillin became the most effective treatment worldwide. In our case, penicillin treatment was applied for ten days in accordance with this algorithm (5,6). VDRL/RPR tests were negative after treatment and at the third month of life; also *T. pallidum* IgG + IgM levels of the patient were decreased at the third month control.

The treatment decision in congenital syphilis cases is given according to clinical findings, maternal treatment duration, and non-treponemal test titres of mother and baby at birth in accordance with the treatment modalities of the American Academy of Pediatrics (2012) and the US Centers for Disease Control and Prevention (CDC) (2010) (5,6). It is recommended that NTT titres should be monitored with 3-month-intervals after the treatment of seroreactive newborns. Fourfold reduction is expected by the sixth month in the titres of the patients receiving adequate treatment. If

there is no decrease, or an increase is detected in the titres, the cases should be re-evaluated in terms of treatment resistance, efficacy and neurosyphilis. Positivity of the treponemal tests may continue until the 15th month of life. Ongoing treponemal test positivity at the 18th month of life requires re-evaluation (7). According to the recommendations of the CDC, three doses of benzyl penicillin treatment are required with a weekly interval to give a total of 7.2 million units during pregnancy if the latent period phase of the pregnant woman is unclear. In our case, maternal treatment with a total of six million units of benzyl penicillin during pregnancy was considered inadequate (1,5,6), and therefore the baby was treated.

The main drawback to preventing congenital syphilis is the inadequate diagnosis and treatment processes of antenatal regular follow-ups of the pregnant women. NTT examination and treatment according to the titre is recommended in the first control, at the third trimester and at birth. However, even in developed countries, only 68% of the pregnant women have regular follow-ups, and half of them have their first control at the end of the first trimester (9).

In conclusion, with the regular follow-up of syphilis during pregnancy, the effective treatment of the pregnant women, and with the early treatment of infants after a rapid evaluation, the complications of congenital syphilis can be prevented.

Ethics

Informed Consent: Written informed consent was obtained from the family for the publication of this case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Ö.U., Z.Ş.B., Ö.A.K., M.Y., M.A., F.V., N.K., Concept: Ö.A.K., N.K., Design: Ö.A.K., N.K., Data Collection or Processing: Ö.U., B.E.Y., Analysis or

Interpretation: Ö.A.K., N.K., Literature Search: B.E.Y., Writing: Ö.U.

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