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A Case of Congenital Syphilis Presenting with Atypical Skin Manifestations

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Abstract:

Introduction:
Congenital syphilis, an infection caused by Treponema pallidum, remains a significant cause of morbidity and mortality in newborns worldwide. While preventable, the disease continues to affect many infants due to inadequate antenatal care and missed screenings. This case report highlights an atypical presentation of congenital syphilis with unusual dermatological manifestations.
Case Description: A 2-month-old female infant was brought to the pediatric intensive care unit (PICU) with symptoms including abdominal bloating, yellowing of the skin, blood-tinged nasal discharge (snuffles), and peeling skin lesions. The infant's mother had insufficient prenatal care and had experienced genital lesions during pregnancy, which were untreated. Born at full term with a birth weight of 1.8 kg, the infant was healthy at birth, crying immediately after delivery without needing NICU support. On examination, the infant presented with microcephaly, pale skin, keratoderma with peeling skin, and hepatosplenomegaly. Laboratory tests confirmed a positive RPR titer in both the infant and mother, confirming a diagnosis of congenital syphilis. The infant was treated with intravenous benzylpenicillin, resulting in resolution of the skin lesions after 14 days.
Discussion: Congenital syphilis often goes undiagnosed due to a lack of clinical awareness and insufficient prenatal screening. Early identification and treatment are crucial for preventing severe outcomes. The most common dermatological signs of congenital syphilis include rashes and desquamation, typically on the palms and soles. This case is unique in its presentation of keratoderma and fissures along with hepatosplenomegaly. It emphasizes the importance of comprehensive prenatal care, early detection, and effective treatment in preventing the long-term effects of congenital syphilis.
Conclusion: Congenital syphilis is a preventable disease that is often overlooked. Clinicians must remain vigilant in diagnosing the condition, particularly in infants presenting with skin eruptions and a history of inadequate maternal care. Prompt antibiotic treatment is essential for improving outcomes and preventing lasting complications.
Categories: Family/General Practice, Pediatrics, Dermatology

Keywords:

skin eruption, maternal screening, perinatal morbidity, RPR, keratoderma, quality of antenatal care, neonatal infection, dermatological manifestations, treponema pallidum, congenital syphilis

Introduction

Congenital syphilis, an infectious disease caused by Treponema pallidum [1], is one of the oldest recognized congenital infections, and it continues to account for considerable global perinatal morbidity and mortality [2]. Congenital syphilis results from hematogenous transmission of Treponema pallidum through the placenta [1]. The increasing prevalence of congenital syphilis symbolizes the failure of the antenatal care system. [3] The rise in congenital syphilis cases highlights the critical need for improved maternal screening, early detection, and treatment during pregnancy to prevent transmission. Addressing this issue is essential for reducing both the morbidity and mortality rates associated with this preventable disease.

Case Description

A 2-month-old female infant presented to PICU with her mother with complaints of a distended abdomen for 2 months, blood-tinged nasal discharge for 10 days before 1 and a half months, yellow discoloration of the whole body, and desquamative lesions. She was second born to a G2P2 mother; she had poor antenatal care. The mother did not have an RPR or VDRL test during pregnancy, but she had a history of multiple painless nodular lesions over the genital region during the second month of pregnancy for which she took medication, and the lesions subsided after 5 days of treatment. The infant was born full term following spontaneous normal vaginal delivery. Birth weight was 1.8 kg. The patient cried immediately after birth, and there is no history of NICU admission. The infant was started on breastfeeding within one hour of delivery.

On examination at the time of presentation, her weight was 2.4 kg (within the 3rd percentile), length was 47 cm (within the 3rd percentile), and head circumference was 33 cm (within the 3rd percentile). Vital signs were stable (temperature: 98.6, respiratory rate: 36 breaths per minute, heart rate: 102 bpm, blood pressure: 96/78 mmHg). The infant was pale and poorly built and nourished. There were no dystrophic features. Microcephalic was present. The patient had a depressed nasal bridge with blood-tinged nasal discharge (snuffles). Skin examination showed diffuse keratoderma with desquamation and fissures on her hands, feet, and chest (see figures 1-4). The abdomen was distended with superficial veins prominent above the umbilicus. The liver was palpable 4 cm below the right costal margin, and the spleen was palpable 7 cm below the left costal margin. There were no symptoms suggestive of nervous system involvement. The rest of the examination was unremarkable.

A complete blood cell count showed hemoglobin of 5 g/dl, white cell counts of 23000/micro-liter, differential counts of polymorphs 45%, lymphocytes 51%, eosinophils 3%, monocytes 1%, and platelet counts of 85000/micro-liter. CRP negative. The results of the liver function test were an AST level of 62 U/L and an ALT level of 25 U/L. Renal function tests were normal: Urea 16 mg/dl and creatinine 0.5 mg/dl.
The infant had a positive RPR titer of 1:32. Concurrently, the mother had a positive RPR titer of 1:16, and the father had a positive RPR titer of 1:4.

Treatment

The patient was treated with intravenous benzyl penicillin at a dose of 50,000 u/kg/dose every 8 hours for 10 days. The dermatological reference was made, and the following medications were prescribed: petroleum jelly for skin lesions, neomycin on fissures, and Zincal lotion on the perianal region. The dermatological manifestations resolved after 14 days of treatment [figure 5].

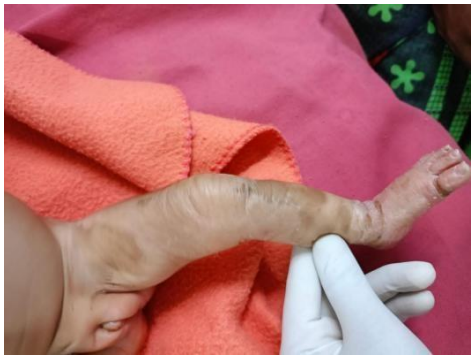

Figure 1: Desquamation and fissure on foot

Figure 2: Desquamation of hand and fissure at the wrist

Figure 3: Diffuse keratoderma and ichthyosis over the chest and dilated veins above the umbilicus.

FIGURE 4: Saddle nose deformity

Figure 5: Improvement after treatment

Discussion

Congenital syphilis is one of the serious public health issues. There is a recent surge in cases of congenital syphilis [1]. The incidence of congenital syphilis in childhood sexually transmitted diseases is
< 1/1000 in Indian patients.[11]

Congenital syphilis remains undiagnosed and often inadequately treated. Lack of adequate antenatal care is one of the leading factors that is responsible for congenital syphilis [4].

Lower socioeconomic status and low education level [5] are some of the associations with congenital syphilis. An infant has a higher chance to develop congenital syphilis when the mother has primary syphilis, higher plasma non-treponemal test titers at treatment or delivery, a shorter duration between treatment and delivery, or untreated syphilis. [4]

Congenital syphilis can be of the early or late type. The early type of congenital syphilis has clinical manifestations before 2 years of age, and the latter has an onset after 2 years of age [1]. Around 60% of patients are asymptomatic at birth, but most of them get detected around 3-8 weeks of age [6]. [1] Clinical manifestations of early congenital syphilis include prematurity and low birth weight [4], non-immune hydrops [3], skin rash, snuffles, jaundice, hepatomegaly with or without splenomegaly, fever, and generalized lymphadenopathy. Affected infants may have Coombs-negative hemolytic anemia, thrombocytopenia, leukocytosis, hypoproteinemia, hypoalbuminemia, hyperbilirubinemia, and elevated liver enzymes [7], neurosyphilis, pneumonia, hepatitis, and skeletal abnormalities. Skeletal abnormalities may include erosions, lucencies of proximal medial tibial metaphysis, metaphyseal lucent bands, metaphyseal serrated appearance at epiphyseal margins of long bones, diaphyseal periostitis, irregular areas of increased density and rarefaction, and multiple sites of osteochondritis that cause pseudo paralysis [4]. A clinical study done in the NETHERLANDS found radiological changes in eight out of ten children with CS [8]. Mucocutaneous manifestations are present in 70% of patients [6]. Typically, it includes small, copper-red maculopapular lesions, usually on the buttocks, thighs, palms, and soles, followed by desquamation, blistering, and crusting prominent on palms and soles. [3]Other manifestations include vesiculobullous lesions, condyloma lata lesions, and erythema multiforme-like lesions. Ocular: salt and pepper chorioretinitis, glaucoma, uveitis [3]. Renal-nephrotic syndrome.

Late congenital manifestations include facial changes like bony prominence of the forehead, saddle nose, prominent maxilla, saber shin [9], thickening of the sternoclavicular portion of the scapula, scaphoid scapula, Hutchinson teeth (peg-shaped upper central permanent incisors and notched enamel), and perforated nasal septum. Others include juvenile paresis, tabes dorsalis, aortitis, interstitial keratitis, Clutton's joints, and sensory neural deafness. [2]

Sir Jonathan Hutchinson (1828-1913) inspired the name Hutchinson's triad. It is a frequent pattern of late congenital syphilis presentation that comprises three phenomena: interstitial keratitis, deformed teeth (Hutchinson incisors and mulberry molars), and eighth nerve deafness. [5, 10]

Congenital syphilis is a disease that may be prevented and treated if doctors are aware of its many clinical manifestations. As a result, clinical suspicion, official confirmation of prenatal screening results, and a comprehensive maternal

history all contribute to the diagnosis of congenital syphilis.

Conclusion

A long-forgotten sickness has reappeared. Congenital syphilis is not extinct, but it is commonly overlooked. We present a 2-month-old child with unique congenital syphilis symptoms. Physicians should be aware of the many clinical signs of congenital syphilis and have a high index of suspicion in order to make an accurate diagnosis and commence therapy as soon as possible.

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