

Return of symptomatic congenital syphilis- is it time to reassess the current prevention guidelines

Abstract

Symptomatic congenital syphilis (SCS) is rare and a nationally notifiable disease reported as a sentinel event. The Center for Disease Control and Prevention has strict guidelines for universal screening of pregnant women for syphilis during the first and third trimesters and at delivery. Whereas, the rate of congenital syphilis had decreased steadily in the United States between the years 2008 and 2012, an increase of 38% was noted during 2012–2014. This reflects a break in the public health policies for the prevention of maternal-fetal transmission with missed opportunities at different levels. Here, we report a case of symptomatic congenital syphilis presenting with bullous lesions on palm and sole born to a mother who received the recommended antenatal care with strict adherence to the CDC guidelines for prevention. This case is an example of the resurgence of SCS and suggests that the current guidelines for its prevention may need to be redefined with additional and more stringent specifications.

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Case report

An appropriate for gestational age Hispanic male infant was born at 37weeks and 5days of gestation to a 21year old primi gravida, who had an uneventful pregnancy until 36 wks of gestation, when her repeat rapid plasma reagent (RPR) test was found to be reactive in the titers of 1:64, along with a positive fluorescent treponemal antibody absorption test (FTA-Abs). Her earlier RPR test performed during the 1st trimester was non-reactive. The tests for other sexually transmitted diseases and for rectovaginal colonization with group B Streptococcus yielded negative results. The mother denied use of illicit drugs during pregnancy or before. She was treated with 2.4million units of Benzathine penicillin at the time of diagnosis.

After 12days of maternal treatment the infant delivered vaginally with Apgar scores of 9 at both 1 and 5minutes of life. On physical examination at birth multiple bullous lesions with surrounding erythema were noted on both palms and soles. Some of the bullae ruptured with peeling within few hours of delivery. The infant remained otherwise asymptomatic until day of life 3 when small to moderate amount of mucopurulent non-hemorrhagic nasal discharge appeared. Infant's RPR test was reactive with titers of 1:64 and his FTA-Abs test was positive. The cerebrospinal fluid (CSF) was contaminated with blood with white cell count of 18/mm³, protein of 214 mg/dl and glucose of 61mg/dl. The DNA polymerase chain reaction for Treponema Pallidum in CSF was negative. The total serum IgM level was elevated at 250mg/dl. Rest of the work up, including C – reactive protein, total and differential white blood cell count, serum electrolytes and kidney and liver function tests was normal. Blood culture sent on admission was negative. Additional work up included long bone x-rays, retinal examination, echocardiography and MRI examination of brain, which were all within normal limits. The infant passed a hearing assessment test. Maternal placental pathology revealed mild to moderate acute chorioamnionitis and mild acute funicitis with a negative Warthin-Starry stain for spirochetes.

The infant was treated with intravenous aqueous crystalline Penicillin G, in the doses of 50000u/kg every 12hrs, which was switched to every 8hrs after 7days. The treatment continued for a total of 10days. The palm and soles lesions, as well as, the nasal discharge

resolved after 3-4days of treatment. He was discharged to home with mother on day of life 11. Father admitted to having penile lesions but tested negative for syphilis. He was, as per guidelines, treated with an intramuscular dose of Benzathine penicillin. As part of the management, ongoing STD prevention education was continued with the parents.

Discussion

Congenital syphilis (CS) is a nationally notifiable disease and case data from all over the United states including the District of Columbia are reported to CDC.¹ Occurrence of CS is considered to be a sentinel event reflecting missed opportunities to prevent maternal infection and fetal transmission. The two major opportunities to prevent CS are primary prevention of syphilis among men and women of reproductive age and treatment of pregnant women who are already infected with syphilis.² The US Preventive Services Task Force and the Center for Disease Control and Prevention recommend universal syphilis screening of all pregnant women in the first and third trimester, and at delivery for women at high risk for syphilis.²

The rate of congenital syphilis decreased steadily in the United States between the years 2008 and 2012 reaching a nadir of 8.4 cases per 100,000 live births in 2012.³ After that, an increase of 38% was noted during 2012–2014, which coincided with a 22% national increase in the rates of primary and secondary syphilis among women of reproductive age.³ These reports reflected a break in the public health policies for the prevention of maternal syphilis and fetal transmission with missed opportunities at different levels. Among the 458 cases of CS reported in 2014, majority were due to inadequate or no treatment of maternal syphilis. Rest were related to a lack of maternal prenatal care.³

Congenital Syphilis results from the transplacental transmission of Treponema pallidum from an infected mother to the fetus. Fetal infection may result in miscarriage, stillbirth, severe illness and even early infant death.³ Among those who deliver after 20weeks of gestation, maternal treatment with penicillin is 98% effective at prevention if given appropriately and at least 4weeks or more before birth.⁴ In our case, despite maternal detection at the recommended

second serological testing and appropriate treatment, fetal transmission and infection could not be prevented as the therapy did not commence four weeks prior to delivery.

Congenital syphilis is generally asymptomatic.² Among the 458 cases of CS reported in 2014 only 6.5% of neonates presented with symptoms. Signs and symptoms vary according to the duration of in-utero infection and provision of adequate maternal treatment. Among the symptomatic neonates early clinical signs may be cutaneous rash, especially on the palms and soles, rhinitis, nasal snuffles, uveitis, chorioretinitis, generalized lymphadenopathy, hepatosplenomegaly, jaundice, hemolytic anemia, thrombocytopenia, osteochondritis and /or periostitis, failure to thrive and non-immune hydrops fetalis. Our infant exhibited vesiculobullous desquamating rash on palms and soles and hemorrhagic rhinitis as the only presenting features.

There were only 30 cases reported in north east USA in 2014. This is the only symptomatic case recorded in Nassau County in 2016 according to the Nassau County health department. We present this case to draw attention to and reiterate the importance of providing STD prevention education and appropriate testing in pregnant women to prevent maternal infection and fetal transmission of not only syphilis but all other STDs. Acquisition of syphilis late in pregnancy despite adherence to the recommended preventive measures, including appropriate testing and education as in this case, reflects a failure of the system, which might need to be revisited and redefined with additional and more stringent guidelines, such as, on-site testing, same-day treatment, screening of all pregnant women attending emergency clinics and most important, improving access to antenatal care⁵ (Figure 1-4).



Figure 1



Figure 2



Figure 3



Figure 1-4 Echocardiogram showed the presence of 2.5x1.5cm² vegetation of the aortic valve.

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None.

Conflict of interest

The author declares no conflict of interest.

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