



H174 Recognizing Congenital Syphilis: The Consequences of the Return of an Epidemic

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Learning Overview: After attending this presentation, attendees will better understand the epidemiology and findings of congenital syphilis in the neonate.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the potential impact of the current syphilis epidemic on the forensic community and highlight the characteristics of congenital syphilis that can be found at the time of autopsy so an appropriate workup and diagnosis can be made.

Introduction: Syphilis, despite being an ancient infection, remains a significant global health concern with newborn syphilis cases reaching a 20-year high in 2017.¹ This study describes an accidental death of a premature infant with concurrent congenital syphilis and amphetamine toxicity. With infection rates rising and neonates of women with poor prenatal care and substance abuse at particular risk, the importance of medical examiner and coroner offices being able to recognize congenital syphilis is pertinent.

Case Description: The decedent was a less-than-24-hour-old prematurely born female infant at approximately 34-35 weeks gestation. The mother was unaware of the pregnancy until presenting to an emergency department with vaginal discharge and pain. During the admission, a congenital rash was noted, initiating an infectious workup and a *Treponema pallidum* antibody enzyme immunoassay that was positive. The case fell under medical examiner jurisdiction due to a positive maternal urine drug screen at the hospital. At autopsy, anomalous facies and a diffuse skin rash were present. Congenital pneumonia, acute pancreatitis, and inflammatory skin changes were present in histologic sections, consistent with underlying congenital syphilis. Toxicology studies revealed levels of amphetamine in the blood.

Discussion: Syphilis is caused by *Treponema pallidum*, a motile spiral-shaped Gram-negative bacterium, with a steady increase in congenital infections since 2012. Congenital syphilis cases within the United States has more than doubled since 2013, with 918 new cases reported in 2017, including 13 infant deaths, coinciding with increases in rates of primary and secondary syphilis in women; 70% of the cases occurred in Florida, California, Arizona, Texas, and Louisiana.¹ An important risk factor for congenital syphilis is underutilization of prenatal care, with substance use as one of many obstacles to accessing care.²⁻⁴ In congenital syphilis, there is widespread dissemination of spirochetes to almost all organs, with most frequent and severe involvement of the bones, liver, pancreas, intestine, kidney, and spleen. While pathologic changes in the fetus can be seen as early as 15 weeks gestation, two-thirds of live-born cases can be fully asymptomatic, depending on the timing of infection *in utero*. Clinical manifestations of early congenital syphilis appear by three months of age in untreated infants, with most common manifestations including hepatosplenomegaly, mucocutaneous involvement (skin maculopapular eruption, desquamation, and crusting), and skeletal anomalies (periostitis, cortical demineralization, and osteochondritis). Manifestations of late congenital syphilis, arbitrarily defined by clinical manifestations with onset after two years of age, include anomalous facies, interstitial keratitis, Hutchinson teeth, palatal perforation, and anterior bowing of the shins. Congenital syphilis should be suspected in all infants born to women with positive non-treponemal and treponemal tests for syphilis and in infants and children with compatible clinical findings. The diagnosis of syphilis requires direct identification of the bacteria or by positive serologic findings.⁵ This case is an example of the impact of the growing syphilis epidemic on medical examiner and coroner's offices and a review of congenital syphilis features.

Reference(s):

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Syphilis, Congenital, Rash