



Beware of infants with respiratory distress, rash, and hepatomegaly at birth: a case of congenital syphilis

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Pregnant women with syphilis may be asymptomatic, hence identification is dependent on serological screening. Despite New Zealand (NZ) having a longstanding policy of such screening at pregnancy booking, congenital syphilis still occurs.

Case report

An 1800-gram infant was born to a 21-year-old NZ European woman, with an unrecognised pregnancy who had no antenatal care. This was her second pregnancy; the first resulted in a live spontaneous vaginal birth at term. Spontaneous onset of labour occurred at 32 weeks' gestation, based on approximate last menstrual period (LMP), with rapid delivery shortly thereafter.

A live male infant was born in the ambulance, with an initial cry and some respiratory effort. He deteriorated quickly despite receiving bag-mask positive-pressure ventilation and chest compressions in the ambulance. On arrival at the hospital he was cold and limp with a heart rate of 40 bpm—but responded to intubation, positive-pressure ventilation, and cardiac massage. Once stabilised, he was transferred to the neonatal unit.

On admission examination, there were multiple, punched out, pale, blistered lesions mainly on peripheries but also on ears and bridge of nose and associated desquamation of palms and plantar surfaces of the feet (Figure).



Additionally, there was meconium staining of the skin and marked hepatomegaly. The initial chest radiograph was consistent with a congenital pneumonia and the diagnosis of congenital sepsis with pneumonia was made. Antibiotics were commenced with amoxycillin and gentamicin in standard neonatal doses. Blood cultures were negative as were viral cultures of both stool and nasopharyngeal aspirate. Swabs from the ear, lesions, gastric contents and placenta did not reveal any pathogen.

However, the diagnosis of congenital syphilis was confirmed with positive venereal disease research laboratory (VDRL) screen and reactive rapid plasma regain (RPR) and *Treponema pallidum* particle agglutination assay (TPPA) tests. Maternal serology was also positive, with RPR and TPPA reactive. Examination of the infant's cerebrospinal fluid (CSF) revealed VDRL was reactive, red cells $244 \times 10^6/L$, white cells $17 \times 10^6/L$ (polymorphs 5% lymphocytes 58% monocytes 37%), elevated protein 1.47 g/L (0.15–0.45 g/L), glucose: 3.1 mmol/L (2.8–4.4 mmol/L), with no growth on culture. Subsequent cerebral ultrasound scans were within normal limits. He completed 12 days of parenteral penicillin G.

The neonatal course included pulmonary hypertension treated with positive pressure ventilation, two doses of surfactant, and nitric oxide for 3 days—the infant recovered well. The family were referred to the adult infectious diseases and sexual health teams, and the infant to the paediatric infectious diseases (ID) team for follow-up.

Discussion

A resurgence in syphilis has been documented in a number of developed countries in recent years.^{1–3} In NZ, a recent paper suggests an increase in the number of people being diagnosed with syphilis at sexual health services.⁴ An apparent increase was seen in heterosexual cases including two women found to be positive on antenatal screening.

Antenatal screening for syphilis is an effective method of identifying women for treatment to prevent the birth of an infected child. However, it does have some limitations. Firstly, it will not identify women who acquire syphilis during later stages of pregnancy after the antenatal screening has been performed or those incubating disease at initial testing.⁵ Secondly, as in our case, when the woman does not have antenatal bloods performed, the potential for treatment in pregnancy is lost. Thirdly, the clinician may have difficulties in interpreting abnormal syphilis serology resulting in either lack of follow up or suboptimal treatment.^{6–8}

Although the VDRL/RPR is used as a screening test for syphilis, it is a nonspecific test and biological false positives do occur in a number of other conditions, including pregnancy. In the past, yaws has also caused confusion and difficulty interpreting syphilis serology, particularly in women from the Pacific. Therefore for any women with a positive syphilis screen in pregnancy, a specific syphilis test—TPPA/FTA-ABS (fluorescent treponemal antibody absorption test)—should be performed and appropriate treatment given if syphilis confirmed. If concerns remain at the time of delivery, then the neonate should be investigated.

Congenital syphilis can present with protean manifestations and lead to delayed diagnosis. Characteristic features include, rash (maculopapular or vesicular),

mucousal lesions, nasal discharge, hepatomegaly, bony tenderness, or eye lesions. The Hutchinson's triad, first described in 1858, describes the late findings of congenital syphilis of notched incisor teeth, interstitial keratitis, and eighth cranial nerve deafness. However children can be born with no obvious clinical manifestations initially, and the disease can present much later.

In the current era of rising rates of sexually transmitted diseases in NZ, it is important to check maternal serology and consider this disease in any child with suspicious clinical findings, particularly if antenatal screening has not occurred, but even if the initial pregnancy screening on the mother has been negative.

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