

# Congenital syphilis in Italy

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The cases are described of two infants who developed clinical and laboratory signs of congenital syphilis in Northern Italy, a region where the disease had not been documented for several years. The report urges greater vigilance and screening for syphilis among pregnant women and newborns, and contributes to the evidence that the incidence of syphilis is rising among women in Italy.

The re-emergence of infectious syphilis in Western Europe and the USA after a period of decline has been described.<sup>1,2</sup> In Italy, cases of early syphilis (primary, secondary and early latent) increased significantly after 2001.<sup>3</sup> In all these settings, the epidemic of infectious syphilis has largely been confined to homosexual men, although in the UK there is evidence that diagnoses of syphilis rose by 255% in women between 2000 and 2004.<sup>4</sup> The spread through the heterosexual route, the involvement of women and re-emergence of congenital syphilis have not been clearly documented in Italy and other Western European countries. We describe two cases of early, symptomatic congenital syphilis in a region where the disease had not been documented for several years.

## CASE 1

In March 2006, a 5-month-old boy born in Italy to immigrant parents was brought to the emergency department of a general hospital in Italy, because of pain in the right forearm. A physical examination revealed a well-developed, well-nourished infant with dysmorphic face due to prominent frontal bumps, mild swelling in the right forearm, non-tender and mobile joints and hepatosplenomegaly. A diagnostic procedure was started. Radiographic examination of the infant's long bones of the upper limbs revealed multiple symmetrical periosteal dystrophic lesions involving the median tract of the metaphysis. Laboratory studies found anaemia (red blood cells  $4 \times 10^6/\mu\text{l}$ , haemoglobin 9.5 g/dl, packed cell volume 0.28), with normal leucocyte and platelet counts. Raised aminotransferase activities were noted (aspartate aminotransferase 90 U/l and alanine aminotransferase 173 U/l; normal limits 5–35 U/l). Syphilis serological tests were performed. Both the non-treponemal rapid plasma reagin (RPR) test and the fluorescent treponemal antibody absorption (FTA-ABS) IgG and IgM tests were reactive. Congenital syphilis was diagnosed. Further evaluation procedures were performed: cerebral ultrasound and eye examination were normal. Examination of the cerebrospinal fluid (CSF) revealed no white blood cells, a protein and glucose content of 28 mg/dl and 57 mg/dl, respectively, and a non-reactive RPR test. The infant was treated with intravenous ceftriaxone 100 mg/kg/day for 14 days, as penicillin was not available at the time. The mother's history was re-evaluated. She had become pregnant and delivered in Italy, where she received her antenatal screening at public health facilities. She was in fact screened for syphilis during the first trimester of pregnancy and presented reactive RPR at 1:16 dilution and reactive FTA-ABS. Despite these findings, she had not been prescribed syphilis

treatment. The newborn was not considered at risk of contracting syphilis because the maternal clinical chart at delivery reported absence of positive serology.

## CASE 2

In March 2006, a woman in the 33rd week of gestation was admitted to the obstetric department of a general hospital in Italy for pre-term delivery. She gave birth to a baby girl weighing 2100 g with an Apgar score of 4 after 1 min and 6 after 5 min. Eight minutes after birth, the baby was given mechanical ventilation because of cardiorespiratory depression. On physical examination, she had ascites and hepatosplenomegaly. Cutaneous lesions were evident, consisting of a pale maculopapular rash with fine superficial desquamation particularly on the palms and soles. Immunoglobulins were administered. Five days after birth, mucopurulent rhinitis developed. Haematochemical investigations showed anaemia (red blood cells  $2.6 \times 10^6/\mu\text{l}$ , haemoglobin 8.1 g/dl, packed cell volume 0.24), with normal leucocyte and platelet counts. Liver enzymes were abnormal, with aspartate aminotransferase 125 U/l and alanine aminotransferase 93 U/l (normal limits 5–35 U/l). Syphilis serology showed reactive RPR (1:16 dilution) and FTA-ABS IgG and IgM. Congenital syphilis was diagnosed. Radiographic examination of the long bones revealed initial signs of osteochondritis and periostitis at metaphyses level. Cerebral ultrasound was consistent with stabilised bilateral germinative matrix haemorrhages. Abdominal ultrasound showed mild hepatomegaly, enlarged pancreas, thickened bowel walls and ascites. Heart sonography was normal. A lumbar puncture was performed; the CSF was characterised by 22 mononuclear cells, 379 mg/dl protein and 38 mg/dl glucose; CSF RPR was negative. The newborn was treated with intravenous aqueous crystalline penicillin G 50 000 U/kg for 19 days. The history of the mother revealed that she had received her antenatal screening at public health facilities. However, she had never been investigated for syphilis during the gestational period. Five days after delivery, the mother had a reactive RPR at 1:2 dilution and a reactive FTA-ABS. Her physical examination revealed no sign of symptomatic syphilis.

## DISCUSSION

We report on two infants with typical features of symptomatic congenital syphilis in one hospital in Northern Italy, where no cases had occurred in the preceding 5 years. The occurrence of congenital syphilis is a failure of preventive public health interventions because penicillin treatment of the mother virtually abolishes the risk of syphilis in the newborn.<sup>5</sup> It is recognised that early detection of syphilis and treatment of infection in pregnant women and their sexual partners is cost-beneficial and cost-effective in controlling maternal and congenital syphilis.<sup>6</sup> However, the effectiveness of the present control strategies have recently been questioned.<sup>7</sup> Both the infants we describe were borne to untreated women. In the first

**Abbreviations:** CSF, cerebrospinal fluid; FTA-ABS, fluorescent treponemal antibody absorption; RPR, rapid plasma reagin

### Key messages

- This report suggests that the incidence of congenital syphilis is rising in Italy as a consequence of the re-emergence of acquired syphilis among women.
- Testing strategies for syphilis among clandestine immigrants in Western Europe need to be strengthened.
- Skills to diagnose and treat neonates and infants with symptomatic congenital syphilis are necessary in Western European countries.
- Surveillance of congenital syphilis in Europe should be established.

case, the mother did not receive treatment despite reactive serology, and in the second case the mother was not screened at all. Both mothers had latent syphilis of unknown duration. Although the risk of vertical transmission of syphilis is as high as 70% when the mother has primary or secondary syphilis or is in the first 4 years of infection,<sup>1</sup> a transmission rate of 10% is also estimated in late latent syphilis.<sup>5</sup>

Diagnosis of congenital syphilis may be difficult because clinical manifestations can involve several organs,<sup>8</sup> their severity may vary significantly, and because of limited awareness of the disease among healthcare providers. Our first case was not recognised at birth, and diagnosis was later elicited by bony lesions, accompanied by liver and haematological manifestations. In the second case, the baby was severely ill at birth, with mucocutaneous manifestations, bony lesions, liver and haematological abnormalities, and involvement of the central nervous system.

This report cannot confirm, but does suggest, that the incidence of congenital syphilis is rising in Italy as a consequence of the re-emergence of acquired syphilis among women. The number of cases of congenital syphilis in Europe is unclear because no specific surveillance system is in place.<sup>9</sup> The two cases we describe occurred in women originating from Eastern Europe and the Balkans. A recent study has provided evidence that recent migration dynamics from Eastern Europe are associated with a resurgence of asymptomatic congenital syphilis in Italy.<sup>10</sup> Our report further suggests that symptomatic congenital syphilis may also be on the rise. In Italy, antenatal care services are ensured by law regardless of the legal status of the mother; this provides healthcare practitioners with appropriate tools to tackle the health implications of migration from areas where syphilis prevalence is high. Indeed, both mothers described here had adequate access to antenatal care facilities. What is still needed is greater awareness of the importance of syphilis screening (ie, case 2) and adequate skills in interpreting syphilis serology and prescribing treatment (ie, case 1).

In summary, to meet the WHO European target for congenital syphilis,<sup>11</sup> current control strategies for syphilis in pregnancy need to be urgently reviewed, and immigrant women should receive screening irrespective of their legal status. Active surveillance of the disease would also help to increase awareness about its relevance as a public health problem. Finally, although congenital syphilis is currently rare, clinicians should be able to diagnose and treat it adequately.

### CONTRIBUTORS

MA supervises clinical activities at the STI clinic and wrote the article. CAC contributed fundamentally to the writing of the manuscript. VdaIP, LRT, GdeI and RB provided clinical care to the mothers and managed the infants at the STI clinic. They revised the manuscript at all development stages. MS and AA provided clinical care to the infants at the neonatal department and revised the manuscript at all development stages. All authors have read, discussed and approved the final version of the manuscript.

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