Intravenous Penicillin for Antenatal Syphilotherapy

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The present authors describe a pregnancy with a severely affected fetus that had complete resolution of fetal hydrops and placental thickening 3 weeks after institution of maternal I.V. infusion of penicillin G, with no clinical stigmata of congenital syphilis identified at birth.

A 21-year-old black woman (G2P0101) at 24 weeks of gestation was diagnosed with syphilis of unknown duration at her initial prenatal visit to the local health department. There was no previous history of syphilis. She had had multiple sexual contacts in the past. Her rapid plasma reagent (RPR) was 1:64, and the microhemagglutination assay for antibodies to Treponema pallidum (MHA-TP) was reactive. Spinal tap was not performed because the results of a neurological examination were normal. She was started on weekly injections of 2.4 million U of Bicillin for 3 weeks, as recommended by the Centers for Disease Control (CDC) for syphilis of unknown duration. Ultrasound, performed at the start of therapy, revealed fetal hydrops and placental thickening, and enlarged liver, intestinal echodensities, and dilated loops of small bowel. Parvovirus B-19 levels showed immunity. Repeat ultrasound 8 days after initiation of therapy revealed a pericardial effusion and progression of the ascites.

Because of worsening fetal conditions despite 1 week of Bicillin treatment, the patient was admitted to the antepartum service for aggressive I.V. penicillin G therapy with doses routinely used to treat adult neurosyphilis. Daily penicillin G at 18 million U continuous I.V. infusion was initiated and continued for 10 days. The patient tolerated her treatment well and remained afebrile throughout her hospitalization.

Serial ultrasound was performed throughout the hospitalization. After 4 days of therapy, the ascites and pericardial effusion were unchanged. Six days after therapy, there was a slight improvement of the ascites. On day 8 of therapy, significant improvement of both ascites and effusion was noted. On the day of discharge, after 10 days of I.V. penicillin, ultrasound revealed even less ascites, and the pericardial effusion was just detectable. Three weeks after initiation of treatment, follow-up ultrasound revealed complete resolution of fetal hydrops and placental thickening. There was good interval growth. The patient delivered at 37.4 weeks of gestation after the onset of spontaneous labor. No stigmata of congenital syphilis were evident on the newborn. Complete blood count showed no evidence of anemia or thrombocytopenia. It was felt that the infant had been treated adequately in utero, but, because there was concern about the ability to follow this child closely over a long period of time, the infectious disease consulting service chose to treat the child again with 200,000 U of aqueous penicillin G intramuscularly twice daily for 14 days.

(The incidence of primary or secondary syphilis and congenital syphilis has recently increased. There are many factors related to this increase: exchange of sex for illicit drugs, the lack of prenatal care, failure of serial serologic testing in a high-risk population, failure of follow-up, and the increase in HIV infection in women, from substance abuse and heterosexual contacts.

Rawstrom et al. performed a retrospective chart review of 403 pregnancies over a 23-month period that were associated with positive syphilis serologic findings; 73 pregnancies (18 per cent) resulted in 75 cases of congenital syphilis (35 live-born and 40 stillborn neonates). Mothers with syphilitic infants tended to have higher serology titers than those whose infants were not infected, which probably indicates a recent infection. Some women in the study who were treated before or during pregnancy nonetheless delivered infants with congenital syphilis; either the treatment was inadequate or re-infection occurred (Am J Dis Child 1993;143:727).

The current Centers for Disease Control recommended treatment for syphilis in pregnant women is similar to the treatment recommended for nonpregnant women (MMWR 1988;37:S-1). Galan et al. treated a woman at 24 weeks' gestation with weekly intramuscular (I.M.) injections of 2.4 million U benzathine penicillin G for 3 weeks, as recommended by the CDC. Sonogra-
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phy revealed fetal hydrops and placental thickening that worsened under maternal therapy. The patient was admitted for intravenous (I.V.) infusion of 18 million U of penicillin G daily for 10 days, with serial sonograms showing improvement of fetal hydrops after the start of I.V. therapy and complete resolution within 3 weeks. On examination at birth, the fetus showed no evidence of congenital syphilis, and laboratory tests indicated adequate treatment (Infect Dis Obstet Gynecol 1993;1:17).

Penicillin is the preferred drug in the treatment of a pregnant patient with syphilis. With laboratory confirmation and evidence that the infection has existed for less than 12 months, the recommended therapy is 2.4 million U of benzathine penicillin G I.M. If the duration of the infection is unknown, the recommendation is for three doses of 2.4 million U of benzathine penicillin G I.M. a week apart. After the initial treatment, titers should be obtained at 4-week intervals; a 4-fold rise in titer or a failure of a 4-fold drop in titer after 3 months should be retreated. If the patient is allergic to penicillin, she should be desensitized in the hospital. Any subsequent treatment with penicillin will require a course of desensitization. If the mother is treated adequately during the first trimester, congenital syphilis should be prevented. In treatment after the first trimester, penicillin may cure the fetal infection; however, there is a 14 per cent failure rate (MMWR 1988;37: S-1).

In 1978, there were 108 cases of congenital syphilis reported to the CDC; in 1989, 1747 cases were reported. If we are to decrease the incidence of congenital syphilis, we must perform serologic screening in the first trimester; the tests must be repeated in areas where there is a high prevalence of syphilis, and in high-risk groups screening should occur again at the beginning of the third trimester or more importantly at delivery (Chhabra RS, et al., Pediatrics 1993;91:88; Survey 1993;48:411). Prompt treatment is mandatory during pregnancy, and must be followed by proper serology during and postpregnancy to determine efficacy of treatment. Of course, ensuring prenatal care may be a larger problem.—RCC

Ultrasound Screening During Pregnancy: Psychological Strain Experienced by the Investigating Staff

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Psychological reactions of the pregnant woman during ultrasound screening have been documented, but the experience of the medical staff has not been studied.

Ultrasound screening during pregnancy in Sweden is usually performed by midwives. The Swedish midwife is a registered nurse who has been especially trained in obstetrics and gynecology. A midwife who performs ultrasound screening has special training in obstetrical ultrasound diagnostic techniques also.

In the majority of Swedish ultrasound units, the midwife herself performs the investigation, interprets the findings and discusses these with the pregnant woman and her partner (if present). Specialized help is readily available when needed. In smaller hospitals, the midwife works to a great extent in isolation and has to refer the patient with a questionable finding to a more qualified unit. The aim of the present study was to investigate the emotional reactions of the staff and to analyze deficiencies, if any, in the organization being observed.

A total of 120 questionnaires were mailed to midwives.