

# Primary Herpes Simplex Virus Infection of the Nipple in a Breastfeeding Woman

Meagan E. Barrett, MD; Misha M. Heller, MD; Honor Fullerton Stone, MD; Jenny E. Murase, MD

### PRACTICE POINTS

- Herpes mastitis should be included in the differential diagnosis for breast pain during lactation.
- Children of breastfeeding women diagnosed with herpes mastitis require immediate evaluation for a possible source of the infection, as complications of herpes viral infection in infants can be severe and life threatening.

To the Editor:

A 33-year-old woman presented with tenderness of the left breast and nipple of 2 weeks' duration and fever of 2 days' duration. The pain was so severe it precluded nursing. She rented a hospital-grade electric breast pump to continue lactation but only could produce 1 ounce of milk daily. The mother had been breastfeeding her 13-month-old twins since birth and did not report any prior difficulties with breastfeeding. Both twins had a history of mucosal sores 2 months prior and a recent outbreak of perioral vesicles following an upper respiratory tract illness that was consistent with gingivostomatitis, followed by a cutaneous outbreak secondary to herpes simplex virus (HSV) type 1 infection. The patient had no known history of HSV infection. Prior to presentation the patient was treated with oral dicloxacillin

and then cephalexin for suspected bacterial mastitis. She also had used combination clotrimazole-betamethasone cream for possible superficial candidiasis. The patient had no relief with these treatments.

Physical examination revealed approximately 20 microvesicles (<1 mm) on an erythematous base clustered around the left areola (Figure). Erythematous streaks were noted from the medial aspect of the areolar margin extending to the central sternum. The left breast was firm and engorged but



Herpes simplex virus of the left nipple.

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Dr. Barrett is from the University of Southern California, Keck School of Medicine, Los Angeles. Dr. Heller is from the Department of Dermatology, Emory University, Atlanta, Georgia. Dr. Stone is from Menlo Dermatology Medical Group, Menlo Park, California, and the Department of Dermatology, Stanford University Medical Center, California. Dr. Murase is from the Department of Dermatology, Palo Alto Foundation Medical Group, Mountain View, California, and the Department of Dermatology, UCSF Medical Center, San Francisco, California.

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Correspondence: Jenny E. Murase, MD, Department of Dermatology, Palo Alto Foundation Medical Group, 701 E El Camino Real (31-104), Mountain View, CA 94040 (jemurase@gmail.com).

without apparent plugged lactiferous ducts. There was no lymphadenopathy. No lesions were present on the palms, soles, and oral mucosa.

The patient was empirically treated with valacyclovir, trimethoprim-sulfamethoxazole, and nonsteroidal anti-inflammatory drugs while awaiting laboratory results. Bacterial cultures were negative. Viral titers revealed positive combination HSV-1 and HSV-2 IgM (4.64 [ $<0.91$ =negative,  $0.91$ – $1.09$ =equivocal,  $>1.09$ =positive]) and negative HSV-1 and HSV-2 IgG ( $<0.91$ [ $<0.91$ =negative,  $0.91$ – $1.09$ =equivocal,  $>1.09$ =positive]), which confirmed the diagnosis of primary HSV infection. Two months later viral titers were positive for HSV-1 IgG (1.3) and negative for HSV-2 IgG ( $<0.91$ ).

At 1-week follow-up the patient reported that the fever had subsided 1 day after initial presentation. After commencement of antiviral therapy, she continued to have some mild residual tenderness, but the vesicles had crusted over and markedly improved. Upon further questioning, the patient's husband had a history of oral HSV-1 and was likely the primary source for the infection in the infants.

Herpes simplex virus infection primarily is transmitted through direct mucocutaneous contact with either oral or genital lesions of an infected individual. Transmission of HSV from infant to mother rarely is described. A PubMed search of articles indexed for MEDLINE using the terms *herpes mastitis*, *herpes of the breast*, *infant to maternal transmission*, *gingivostomatitis*, *primary herpes*, and *breastfeeding* yielded 4 reported cases of HSV of the nipple in breastfeeding women from children with herpetic gingivostomatitis.<sup>1-4</sup>

Herpes simplex virus infection is common in neonatal and pediatric populations. In the United States, more than 30% of children (aged  $<14$  years) have evidence of HSV-1 infection on serology. Herpes simplex virus infections in

children can range from uncomplicated mucocutaneous diseases to severe life-threatening infections involving the central nervous system. In children, antivirals should be initiated within 72 hours of symptom onset to prevent more serious complications. Diagnostic testing was not performed on the infants in this case because the 72-hour treatment window had passed. In particular, neonates (aged  $<3$  months) will require intravenous antivirals to prevent the development of central nervous system disease, which occurs in 33% of neonatal HSV infections.<sup>5</sup> It is critically important to confirm the diagnosis of HSV in a breastfeeding woman, when clinically indicated, with a viral culture, serology, direct immunofluorescence assay, polymerase chain reaction, or Tzanck smear because other conditions such as plugged lactiferous ducts, candidal mastitis, or bacterial mastitis may mimic HSV. Rapid and accurate diagnosis of the breastfeeding woman with HSV of the nipple can help identify children with herpetic gingivostomatitis that is not readily apparent.

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