

Female-to-Female Transmission of Human Immunodeficiency Virus

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We describe a case of female-to-female transmission of human immunodeficiency virus (HIV). A 20-year-old African American woman with no obvious risk factors received a diagnosis of HIV infection, and the genotype of the infecting strain closely matched that of the strain infecting her openly bisexual female partner. The route of transmission was probably use of sex toys, used vigorously enough to cause exchange of blood-tinged body fluids.

Data on transmission of HIV between women are scarce and incongruent. Although several studies have shown no evidence of transmission between women who have sex with women (WSW) [1–3], there have been a few reports describing cases of female-to-female transmission identified on the basis of the absence of a history of alternative risks for HIV infection [4, 5]. We report a genotype-supported case of female-to-female HIV transmission in the absence of other obvious risk.

Case Report. A 20-year-old African American woman presented with newly diagnosed HIV disease. She had had a negative HIV ELISA result 6 months before the positive test result. Her medical history was significant only for mild asthma. A thorough risk review revealed lesbian intercourse as her only risk factor for HIV infection. She had no history of substance abuse, including use of injection drugs, had no tattoos or body piercing, had never engaged in heterosexual intercourse, and had never received blood products. She was a student in junior college with no known exposure to body fluids. She had engaged in lesbian sex for 2 years, during which time she had had a single partner. Sexual practices included sharing of sex toys and oroanal and orogenital contact, which never occurred during menses but which was occasionally traumatic enough

to draw blood. Her partner was openly bisexual and known to have HIV disease, but used protection only with her male partners, as instructed by her physician. The partner had been careful to avoid sharing razors and toothbrushes with anyone, as instructed by her physician.

Initial physical examination revealed nothing abnormal, and was notable only for the absence of track marks, nasal abnormalities, tattoos, or body piercing. The patient had good oral hygiene with healthy gums and teeth and no evidence of bleeding. Laboratory values were as follows: hemoglobin, 11 g/dL (normal range, 12–16 g/dL); WBC count, 3.2×10^9 cells/L; CD4 count, 401 cells/mm³ (normal range, 490–1740 cells/mm³); HIV RNA, 32,000 copies/mL (as determined by RT-PCR). The HIV-1 genotype was as follows: T215Y, D30N, K103N, L63P, V77I, M41L. A hepatitis C antibody test yielded a negative result, and results of other laboratory tests, including a chemistry screen that included liver function, rapid plasma reagin, and toxoplasma IgG tests, were within normal limits. The patient's partner agreed to undergo HIV genotype testing, and the results of which were as follows: M184V, T215Y, D30N, K103N, L63P, V77I, M41L. The patient's partner was receiving nelfinavir and lamivudine/zidovudine (Combivir; GlaxoSmithKline); her previous antiretroviral therapy included nevirapine, stavudine, and lamivudine.

Discussion. Published data support the conclusion that female-to-female HIV transmission occurs rarely. Several researchers have demonstrated no evidence of such transmission among cohorts of women reporting same-sex contact [1–3]. Previous case reports of probable female-to-female transmission of HIV have been based solely on the lack of alternative risk factors, as noted by the patients in question [4, 5]. This is the first reported case of female-to-female sexual transmission of HIV supported by identification of similar HIV genotypes in the source patient and the recipient.

The true risk of sexual transmission of HIV between women may be masked by the following 2 considerations. (1) In numerous studies, WSW, as a group, have been shown to engage in higher-risk behaviors than do heterosexual women [6, 7]. WSW, therefore, often are exposed to other traditionally recognized modes of transmission, such as substance abuse and heterosexual intercourse, which are presumed to be the modes of acquisition of infection. (2) The number of women whose sexual partners are exclusively women and who have no other identified risk factor for HIV infection is small, rendering even more difficult the task of proving the existence of a risk factor—or lack thereof—with any statistical power. These consid-

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erations provide an explanation for the uneasy coexistence of case reports such as this one and the lack of firm evidence of lesbian sexual transmission of HIV in larger studies of women with multiple risk factors, among them lesbian contact.

The sexual practices engaged in by our patient—specifically, using sex toys vigorously enough to cause exchange of blood-tinged body fluids—pose a reasonable theoretical risk of HIV transmission. As this case illustrates, failure to identify lesbian sex as a potential risk for HIV transmission may result in untoward consequences. Given the higher-risk behavior among the community of WSW, HIV-seronegative WSW may be at increased risk of HIV infection on the basis of their sexual practices alone. Although the risk of HIV transmission between women needs to be elucidated further, prudence dictates that HIV-seronegative and HIV-seropositive WSW be counseled to use safe-sex practices with female partners.

References

1. Petersen LR, Doll L, White C, et al. No evidence for female-to-female HIV transmission among 960,000 female blood donors. *J Acquir Immune Defic Syndr* **1992**;5:853–5.
2. Cohen H, Marmor M, Wolfe H, et al. Risk assessment of HIV transmission among lesbians. *J Acquir Immune Defic Syndr* **1993**;6:1173–4.
3. Raiteri R, Baussano I, Giobbia M, et al. Lesbian sex and risk of HIV transmission. *AIDS* **1998**;12:450–1.
4. Monzon OT, Capellan JMB. Female-to-female transmission of HIV. *Lancet* **1987**(2):40–1.
5. Rich JD, Buck A, Tuomala RE, et al. Transmission of human immunodeficiency virus infection presumed to have occurred via female homosexual contact. *Clin Infect Dis* **1993**;17:1003–5.
6. Fethers K, Marks C, et al. Sexually transmitted infections and risk behaviors in women who have sex with women. *Sex Transm Infect* **2000**;76:345–9.
7. Bevier PJ, Chiasson MA, Heffernan RT et al. Women at a sexually transmitted disease clinic who reported same-sex contact: their HIV seroprevalence and risk behaviors. *Am J Public Health* **1995**;85:1366–71.