

HUMAN PAPILLOMAVIRUS- ASSOCIATED CERVICAL INTRAEPITHELIAL NEOPLASIA FOLLOWING LESBIAN SEX

Katherine A. O'Hanlan, MD, and
Christopher P. Crum, MD

Background: Less than 3% of lesbians develop cervical dysplasia, with increasing risk correlating with previous heterosexual activity. Because they are not currently sexually active with men, many lesbians do not perceive themselves to be at risk for developing dysplasia and do not obtain regular Papanicolaou smears. There are no standard recommendations for Papanicolaou smear intervals for lesbians.

Case: A 36-year-old, nonsmoking woman had a Papanicolaou smear history of a high-grade squamous intraepithelial lesion of the cervix, which was confirmed by biopsy and successfully treated by laser ablation. Human papillomavirus type 16 was identified in the cervical biopsy by polymerase chain reaction amplification and restriction fragment polymorphism analysis. The patient gave a clear history of having had sexual activity only with women.

Conclusion: Regular Papanicolaou testing should be recommended to all lesbians, regardless of type of sexual activity. Papanicolaou testing intervals should be determined using standards similar to those used for heterosexual women: annually after onset of sexual activity or after age 18, and possibly less often after three normal smears at her physician's discretion. An extensive number of sexual partners, current smoking, and prior dysplasia may influence the physician to advise continued yearly Papanicolaou testing for lesbians, similar to advice given to heterosexual patients. (*Obstet Gynecol* 1996;88:702-3)

The most powerful risk factors for developing cervical intraepithelial (CIN) or invasive neoplasia include the number of lifetime sexual partners of either a woman or her male consort.¹ With the discovery of genital human papillomaviruses (HPV), the above associations have been explained by the sexual transmission of HPV. Moreover, cancer-associated (high-risk) HPV types have been related to high-grade CIN and invasive carcinoma. The documented routes of HPV transmission include male to female (or the reverse), male to male, and mother to neonate. There has been little known of the risk of transmitting genital papillomavi-

rus from female to female via lesbian sexual activity. We report a case of transmission of a high-risk (HPV 16) HPV type by exclusive lesbian activity that resulted in the development of CIN.

Case Report

A 36-year-old woman presented for colposcopy for a history of high-grade squamous intraepithelial lesion (SIL) diagnosed by Papanicolaou smear 1 month earlier. The patient was a nonsmoker and had never had an abnormal Papanicolaou smear. She reported that she was a lesbian who had never had physical intimacy or sex with a male. Her sexual activity consisted of active and receptive, oral and digital stimulation of the clitoris and vagina. She never received or performed stimulation of the anus or rectum.

Satisfactory colposcopy revealed an area of thick white epithelium extending 1.5 cm from the squamocolumnar junction anteriorly and posteriorly. A biopsy was performed, which revealed a high-grade SIL lesion consistent with CIN II. Laser ablation to a depth of 7.0 mm was used on the cervical lesion, further ablating laterally 1.0 cm beyond the lesion margin to a 2.0-3.0 mm depth. Subsequent Papanicolaou smears obtained every 3 months for 1 year have been negative.

Human papillomavirus DNA was detected by polymerase chain reaction (PCR) amplification of DNA extracted from the paraffin block. Four 6- μ sections were incubated in digestion buffer with 100 μ g/mL proteinase K and incubated at 62C for 4 hours in an Eppendorf centrifuge tube. Chelex (Biorad, Burlingame, CA) was added; specimens were placed in boiling water for 10 minutes and centrifuged for 5 minutes in an Eppendorf centrifuge, as detailed previously.² A 2- μ L aliquot was removed and subjected to PCR amplification with degenerate consensus primers designed to amplify a wide range of HPV types, as described previously.³ Polymerase chain reaction products were analyzed on 2.0% agarose gels by ethidium staining. Potential positives were reamplified, digested with a combination of restriction enzymes (*Pst* I, *Rsa* I, *Hae* III), and underwent electrophoresis on a 2.5% agarose gel, using a modification of the technique of Lungu et al.^{2,3} The presence of HPV DNA and specific HPV type were determined by restriction fragment polymorphism analysis, in which fragment sizes were compared to known or published sequences available from the literature. As a negative control, digestion buffer alone was analyzed.

The results of HPV DNA analysis revealed a 450-base pair product by ethidium staining consistent with HPV DNA. Restriction enzyme digestion produced fragment sizes characteristic of HPV type 16 (data not shown). Reagent controls were negative.

Discussion

Two reports^{4,5} about lesbian health have documented cervical dysplasia among 2.7-2.9% of lesbians studied. In both of these studies, 11-22% of lesbians had not had prior sexual intercourse with men. In one study,⁴ the

From the Division of Gynecologic Oncology, Gynecology and Obstetrics, Stanford University, Stanford, California; and Harvard Medical School and Division of Women's and Perinatal Pathology, Brigham and Women's Hospital, Boston, Massachusetts.

sexual behavior of the four women with dysplasia was not identified. In the other,⁵ the risk of developing clinical dysplasia was found to be more than double with any prior coitus. Within the subgroup of exclusive lesbians, the incidence of gonorrhea, chlamydia, syphilis, herpes, condyloma, and AIDS is extremely low.^{4,5} In addition, without the need for a birth control method, many lesbians do not have a gynecologist or primary care provider and do not receive regular Papanicolaou testing.

Documentation of specific transmission of HPV by lesbian sexual activity has not been reported. Human papillomavirus has been shown to colonize the oropharynx of some individuals with genital warts.⁶ It is reasonable to expect that HPV, like human immunodeficiency virus,⁷ can be transmitted by oral-genital contact between women. Although it may appear likely that the patient contracted HPV as a result of oral sexual contact with another woman, it must be recognized that the precise manner in which HPV is transmitted, even male to female, is not clear. Not all male sexual partners of HPV-positive women demonstrate evidence of HPV themselves, nor are identical HPV types always identified in male-female pairs. Thus, the exact source and route of transmission during sexual activity cannot be ascertained specifically, leaving open the possibility that HPV may be transmitted by any form of genital manipulation during sexual activity.

In a 1981 report,⁴ the interval between Papanicolaou tests was observed to be 21 months for lesbians and 8 months for heterosexual women. More recent studies⁸ have shown that many lesbians forego annual Papanicolaou testing, perceiving themselves to be at low risk for cervical cancer, even though 70–90% have been sexually active with men. There are currently no prospective data on which to base recommendations for Papanicolaou test frequency to women who no longer have sex with men. Moreover, it is not clear whether the cervical cancer risk for lesbians who have been infected with HPV or have HPV-related CIN is similar to heterosexual women. It is prudent to counsel lesbians that a risk, albeit small, of transmitting HPV or other infections exists with exclusive lesbian sexual activity.⁸ Papanicolaou smear interval for lesbians should be

determined using similar standards as those used currently for heterosexual women: annually after onset of sexual activity or age 18, and possibly less often after three normal smears at her physician's discretion. Large number of sexual partners, current smoking, and prior dysplasia may influence the physician to continue yearly Papanicolaou testing.

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Address reprint requests to:

Katherine A. O'Hanlon, MD
H-302 Gynecologic Cancer Section
Department of Obstetrics and Gynecology
Stanford University School of Medicine
Stanford, CA 94305-5317

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