High Prevalence of Anal Squamous Intraepithelial Lesions and Squamous-Cell Carcinoma in Men Who Have Sex With Men as Seen in a Surgical Practice

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INTRODUCTION: Anal high-grade squamous intraepithelial lesions are probable invasive anal squamous-cell cancer precursors, and although unproved, treatment of high-grade squamous intraepithelial lesions may prevent progression to anal squamous-cell cancer. Men who have sex with men are often treated for benign anorectal disorders without consideration given to the possibility of concurrent high-grade squamous intraepithelial lesions or anal squamous-cell cancer. We determined the prevalence of anal high-grade squamous intraepithelial lesions and anal squamous-cell cancer in an urban surgical practice of men who have sex with men referred for treatment of anal condyloma and other benign anorectal disorders. METHODS: One hundred thirty-one HIV-positive and 69 HIV-negative men who have sex with men referred for surgical treatment of presumed benign anorectal disease were evaluated by anal cytology, high-resolution anoscopy, and biopsy. Anal cytology and histology were reported with a modified Bethesda classification. RESULTS: One hundred fifty-seven patients (79 percent) were referred for condyloma, 4 (2 percent) for anal squamous intraepithelial lesions (anal high-grade squamous intraepithelial lesions) diagnosed by primary care providers, and 39 (19 percent) for other benign anorectal disorders. One hundred forty-three patients (93 percent) had abnormal anal cytology, with 107 (54 percent) having high-grade squamous intraepithelial lesions on cytology. Biopsy results revealed 120 patients (60.0 percent) with high-grade squamous intraepithelial lesions and 5 patients (3 percent) with invasive squamous-cell carcinoma. Four of five men with anal squamous-cell cancer were HIV positive. Fourteen men (36 percent) who have sex with men referred for noncondylomatous benign anal disorders had high-grade squamous intraepithelial lesions, and three (8 percent) had anal squamous-cell cancer. High-grade squamous intraepithelial lesions and anal squamous-cell cancer were seen most often at the squamocolumnar junction. CONCLUSIONS: Men who have sex with men referred for treatment of either condyloma or noncondylomatous benign anorectal disease had a high prevalence of anal high-grade squamous intraepithelial lesions and anal squamous-cell cancer. All men who have sex with men referred for treatment of benign anorectal disease should have high-resolution anoscopy and aggressive biopsy of all abnormal areas. Treatment of external lesions alone could miss high-grade squamous intraepithelial lesions or anal squamous-cell cancer. [Key words: Anal cancer; Dysplasia; Human papillomavirus; Homosexual; Bisexual men; Condyloma; Anal disorders; Squamous intraepithelial lesion; Squamous-cell carcinoma]

The incidence of anal squamous-cell carcinoma (ASCC) is considerably higher among men who have sex with men (MSM) than among the general population, and MSM infected with human immunodeficiency virus (HIV) are at even greater risk. Current estimates for the incidence of ASCC in MSM are up to 35/100,000 for HIV-negative men, which approximates the incidence of cervical cancer in women before the advent of routine cervical pap smear screening. The incidence of ASCC in HIV-positive MSM is estimated to be approximately twice that of HIV-negative MSM. The higher incidence of ASCC in MSM has been attributed to anal-receptive intercourse and resultant infection with oncogenic strains of human papillomavirus (HPV). The anal canal with its squamocolumnar transformation zone is in many ways anatomically analogous to the cervical transformation zone. Cervical cancer arises from cervical squamous intraepithelial lesions. Screening women for cervical squamous intraepithelial lesions...
with cervical cytology smears, colposcopy, and ablation of cervical high-grade squamous intraepithelial lesions (HSILs) has contributed to reduction in the incidence of cervical cancer from in the range of 40 to 50/100,000 to approximately 8/100,000. These same techniques have been used in MSM to diagnose anal squamous intraepithelial lesions (ASILs) and to combine anal cytology with visualization of suspicious lesions by high-resolution anoscopy (HRA) and HRA-directed biopsies. Like cervical colposcopy, HRA consists of application of acetic acid and visualization of the anal mucosa under magnification.

With HPV detection techniques, anal cytology, and HRA-directed biopsies, a high prevalence of both oncogenic HPV infections and ASILs has been found among MSM, with rates highest among those with HIV infection. A direct link between anal HSILs and ASCC has not been proven because of the difficulty in performing the necessary studies. However, given the biological similarities between anal and cervical cancer and the high incidence of both anal HSILs and ASCC in MSM, it can be inferred that HSIL is a precursor to ASCC in this population.

Recent analysis has projected that annual anal cytology screening for HIV-positive MSM and biannual or triennial screening for HIV-negative MSM is cost-effective to prevent ASCC in these groups and offers quality-adjusted life-expectancy benefits comparable to other clinical preventive measures.

MSM with benign anal conditions are often referred to surgeons for evaluation and treatment, and symptoms and signs of early ASCC are often similar to common anorectal disorders. Moreover, certain benign anal conditions, including hemorrhoids, fissures, and fistulas, are often present with and may predispose to the development of ASCC. Anal HSIL or ASCC may be found unexpectedly along with these lesions. Despite the growing body of evidence showing that MSM are at high risk of HSIL and ASCC, they are often treated for these benign anorectal disorders without consideration given to the possibility of associated HSIL or ASCC. We therefore endeavored to determine the prevalence of HSIL and ASCC in MSM referred to a surgical practice in an urban area with a large population of HIV-positive and HIV-negative MSM.

METHODS

Between November 1997 and December 1999, all MSM referred for surgical evaluation and treatment of presumed benign anorectal disease were considered for inclusion in this study. The surgical practice was located in New York City. A thorough history, including history of HIV infection, was taken, but HIV testing was only performed at the patient’s request. A general physical examination was performed. Before anorectal examination, the patient was placed in the knee/chest or lateral position. To obtain a sample for anal cytology, the anus was spread gently so the anoderm pouted out, and a nonlubricated, moistened Dacron swab or cytobrush was inserted into the anus 2 to 3 cm. The swab was moved in and out several times while being rotated 360° before it was withdrawn. Either a conventional cytology smear on a clean plate-glass slide was prepared or the swab or brush was agitated in CytoLyt® solution (Cytyc Corporation, Roxborough, Massachusetts) for liquid-based cytology. A digital rectal examination followed by HRA was then performed. To carry out HRA, a lubricated anoscope was inserted, through which a stick wrapped in 3 percent acetic acid-soaked gauze was passed. The anoscope was removed over the stick, which was left in for one minute and then removed. The anoscope was then reinserted, and a colposcope was positioned to view the perianal skin, anal canal, and transition zone under magnification through the anoscope. Findings were noted by the method of Jay et al., including acetowhite areas with punctation, ringed glands, and abnormal vessels (Fig. 1). Abnormal areas were biopsied. If patients required surgical treatment of their anorectal disease, biopsy specimens were obtained at that time. Only patients from whom biopsy specimens were obtained by HRA,