

that have spread. However, during two decades of research, investigators have not shown that treatment of high-grade cells in the anal canal prevents development of anal cancer. More importantly, a San Francisco study that attempted surgical elimination of high-grade cells in 29 HIV-positive men reported a 79 percent recurrence rate, mostly within one year.

The most important current limitation to proposed screening programs for HIV-positive gay men appears to be the lack of an effective treatment for high-grade dysplasia. This is a high priority item for clinical Human Papillomavirus (HPV) research.

Is a suitable screening test available?

The anal Pap smear is certainly an easy, safe, and relatively inexpensive procedure to perform. However, there is unlikely to be any significant role for anal Pap tests in anal cancer screening programs for HIV-positive gay men since the vast majority of tests conducted from this population show abnormal results; consequently, referrals for further examination and/or biopsy of the anal canal will be needed by practically everyone.

The anal Pap smear provides practically no useful distinction among HIV-positive men who are screened. Screening programs

might well begin with high-resolution anoscopy, an expensive procedure that was not intended for such widespread use.

The future of anal cancer screening

The current conundrum is that screening might well benefit the very few HIV-positive individuals in whom anal cancer is detected early. However, this number appears to be very small compared to the large number screened and subsequently treated for anal dysplasia. In fact, the resulting cost, inconvenience, and discomfort caused by the screening process itself is likely to far outweigh the benefit of such a large-scale program. Of note, the widely cited cost-effectiveness of anal Pap screening is too optimistic, having assumed a high cure rate for high-grade dysplasia and an implausibly high rate of progression from high-grade dysplasia to invasive anal cancer.

At present, available evidence does not support widespread, routine anal cancer screening of HIV-positive gay men however, there is a role for such screening in research contexts. High research priorities include improving our understanding of prevalence and progression rates in more representative

samples of HIV-positive men, uniform and systematic follow-up of men already treated for high-grade dysplasia to assess the effectiveness of treatments already rendered, and the clinical evaluation of alternative approaches to eradicate high-grade cells from the anorectal canal.

Researchers are now hunting for better molecular markers to identify that tiny percentage of people who will have anal cell abnormalities and who are much more likely to develop invasive anal cancer. An even more attractive approach to anal cancer prevention in HIV-positive gay men is the development of a therapeutic HPV vaccine. The aim would be to stimulate stronger immune control over HPV infection among persons already infected with selected cancer-associated strains of HPV. Such a trial began in the autumn of 2004. Others are in various phases of planning. ⊕

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A bum deal

Diagnosing and treating anal dysplasia

by Michael Connidis



Scientists have established a clear link between infection with subtypes of the human papillomavirus (HPV) and anal dysplasia and anal cancer. The prevalence of HPV infection, the most common of all sexually transmitted diseases (STDs), is highest among HIV-positive individuals, especially among men who have sex with men (MSM). There has also been an increase in the incidence of anal cancer, which began before the HIV epidemic.

How to best screen for, diagnose, and treat tissue abnormalities in the anal canal has emerged as a pressing issue in the standard of care for people living with HIV/AIDS. Another important question is whether early detection and treatment of

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anal dysplasia reduces the risk of developing invasive anal cancer (see the preceding article for an in-depth evaluation of routine anal Pap smears). A concerted effort is underway to establish an optimal standard of care and treatment for anal dysplasia and anal cancer.

What's happening here in Vancouver

The Anal Dysplasia Clinic (ADC) at the BC Centre for Excellence in HIV/AIDS (BCCfE) has become one of Canada's leading clinics involved in research into anal dysplasia, as well as in the diagnosis and treatment of the condition. Under the direction of Dr. Robert Taylor, a colorectal surgeon at Mount St. Joseph Hospital, the clinic opened in 2003 at St. Paul's Hospital in downtown Vancouver. People are referred to the clinic when anal Pap smear results are abnormal or when other symptoms are present, such as anal bleeding, itching, or a detectable mass.

If you are referred to the clinic, the first appointment takes approximately one hour. Dr. Taylor is personable and takes time to learn all the pertinent details of each patient's medical history. He makes an effort to put all patients at ease and to make the procedures as comfortable as possible. First, he conducts another anal Pap test to ensure that there is a screening standard. This procedure is very quick and involves inserting a Dacron or polyester tipped swab into the anal canal and gently rotating it, collecting cells from the lining of the canal in the swab fibres. The collected cells are sent for cytology analysis.

The next screening is a digital examination of the anal canal. Since the anal canal has many nerve endings and is very sensitive, Dr. Taylor uses a lubricant containing a topical anesthetic during this procedure. He checks for any surface irregularities, lumps, or hard spots along the anal canal. High resolution anoscopy (HRA) is the best way to visually assess the condition of the tissue lining the anal canal. Next, an anoscope—a clear, smooth plastic cone that is two centimetres in diameter—is gently inserted a few centimeters into the anal canal. Using a binocular microscope, Dr. Taylor examines the anal canal. A mild solution of acetic acid is swabbed over the lining of the anal canal, which turns the tissue a milky white colour; areas with irregular growth appear more opaque. It is also possible to distinguish changes in the blood vessels underlying these abnormal areas; rather than having a branch-like appearance, abnormal blood vessels will exhibit a spotted pattern.

What happens if they find dysplasia?

Any detected areas of dysplasia are first biopsied. The biopsy helps determine the nature of the abnormal tissue and

confirms whether or not it is cancerous. The areas of dysplasia are then treated with a topical application of a solution containing 80 percent trichloroacetic acid (TCA); this procedure takes about 10 minutes. Because there is limited room to maneuver, treatment options are similarly limited. Doctors can also perform an electrocautery using a local anesthetic. Laser treatment is another option; however, Vancouver's ADC clinic does not have the equipment to perform this procedure.

The applied TCA chemically burns off the layer of affected tissue, and is replaced by healthy tissue within roughly two weeks. Typically, there is minimal discomfort from this treatment. Additional treatments may be required to eliminate all of the dysplastic tissue. Follow-up anoscopy is routinely conducted to ensure that the treatment has been successful and to screen for new areas of dysplasia. If a non-invasive (*carcinoma in situ*) growth is discovered during this procedure, it is typically removed and sent for analysis.

The ADC conducts screening and treatment for anal dysplasia, as well as some early-stage *carcinoma in situ*; they do not treat anal warts, since this procedure is routinely performed by physicians or through STD clinics. If the ADC clinic observes invasive anal cancers during the screening process, the patient is referred to the BC Cancer Agency. The invasive growth may be biopsied at ADC to confirm the diagnosis, but the treatment is managed through the BC Cancer Agency.

If you are HIV-positive, the odds are likely that you may have some form of HPV-related anal dysplasia. Nevertheless, statistically speaking, the chance that you will develop anal cancer remains very low. Pap screening for anal dysplasia and treatment of affected areas have not been shown to prevent anal cancer. The digital examination is a more effective form of screening to detect palpable anal cancers, with the added benefit, for men, of allowing examination of the prostate gland at the same time. While digital examination of the anal canal is not a preventative approach, it can lead to earlier detection of cancerous growths before they become invasive.

If you have reason to be concerned about anal dysplasia and/or anal cancer, discuss the matter with your doctor and together decide how to most effectively address your concerns. ⊕



Michael Connidis is a member of the BCPWA Society and a member of the living + editorial board.