

Illustrated Instructions for Self-Collection of Anorectal Swab Specimens and Their Adequacy for Cytological Examination

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Background: Self-collection of anorectal swab specimens would facilitate screening for anal cancer precursors and sexually transmitted rectal infections among men who have sex with men (MSM). However, pictorial guides for self-collection were not previously available.

Goals: Develop and field test a set of illustrated self-collection instructions.

Design: Cross-sectional study of community-recruited MSM who were naïve with regard to collection of specimens for anal cytology.

Results: Among 222 self- and clinician-collected swab pairs provided by mostly human immunodeficiency virus (HIV)-1 seronegative MSM (median age, 31.5 years), most specimens were adequate for cytologic evaluation, though self-collected swabs were less likely to be so (83% versus 92%, $P = <0.001$). The illustrated instructions were reportedly essential, but having used them, men rated their understanding of the self-collection procedure as very high.

Conclusions: Provided with illustrated instructions, most MSM who are naïve to the technique can self-collect anorectal swab specimens that are suitable for screening.

ANAL CANCER IS RARE in the general population, but its incidence has increased during the past 3 decades.^{1,2} The incidence of this malignancy is greatly elevated among human immunodeficiency virus (HIV)-1 seronegative and HIV-1 seropositive men who have sex with men (MSM), in whom relative risks were previously 35 and 70, respectively.^{3–5} Two very recent studies suggest that incidence rates among HIV-1 seropositive MSM further doubled after 1996, owing to increased survival of men who receive potent antiretroviral treatment.^{6,7}

Anal squamous intraepithelial lesions (ASIL) are thought to be precursors of invasive anal carcinoma and can be detected by cytologic examination of anorectal swab specimens.⁸ Early treatment of ASIL might reduce cancer mortality. However, the evidence base needed to recommend routine cytologic screening of MSM presently requires data from additional natural history, screening, and treatment studies.^{5,9} The feasibility, cost, and scope

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of such studies would improve, were self-collection of anorectal specimens possible. To date, however, instructions for self-collection of anorectal swab specimens for cytologic examination in research or clinical settings have not been described.

In this report, we present illustrated instructions for self-collection of anorectal swab specimens and data pertaining to the cytologic adequacy of such specimens.

Materials and Methods

We developed through iterative pretesting an illustrated, step-by-step instruction sheet for self-collection of anorectal swab specimens (Fig. 1). The final version was included in specimen self-collection packets that included a sterile Dacron polyester-tipped swab, a bottle of PreservCyt solution (Cytoc Corporation, Boxborough, MA), and a biohazard transport bag. At the same visit, a trained research nurse collected a second anorectal swab specimen. The order of swab collection (self versus clinician) was randomly assigned because we were unsure whether there would be an order effect upon cell yield (fewer cells in the second swab compared to the first).

Each swab specimen was labeled with a unique study identification number and forwarded within 24 hours to the British Columbia Cancer Agency, where stained anorectal ThinPrep slides were prepared. Slides were evaluated by 1 cytopathologist who was unaware of who had collected the specimen. Adequate samples contained more than 5000 well-preserved squamous cells, at least 75% of which were not obscured by covering inflammation, blood, or fecal material.

Following collection of both swabs at their study visit, men also completed a self-administered questionnaire in which they ranked their own and the clinician collection procedure using a 5-point Likert-like scale (1 = not at all, 5 = a lot). Two items read, "How would you rank collection of (your own) (the study nurse's) anal Pap smear in terms of understanding of the procedure?"

The study protocol was approved by the University of British Columbia/Providence Health Care Research ethics board, and each participant provided written informed consent.

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Instructions for collecting your own anal PAP test



Fig. 1. Illustrated instructions for self-collection of anorectal swab specimens.

Results

Between July 2003 and April 2004, 222 MSM enrolled in the Vanguard Project research study^{10,11} provided at the same clinic visit 1 self-collected and 1 clinician-collected anorectal swab specimen.¹² The median age of study participants was 31.5 years; 75%

were white, and half had graduated from college. All participants were HIV-1 seronegative, except for 28 seroconverters (13%) who had been infected for a median 2.0 years. Of note, none of the participants had previous experience with anorectal specimen collection for cytology. No significant differences were observed in

TABLE 1. Adequacy of 222 Pairs of Self- and Clinician-Collected Anorectal Swab Specimens for Cytological Evaluation

Self-Collected Swab Specimen	Clinician-Collected Swab Specimen	No. (%)
Inadequate	Inadequate	10 (5)
Adequate	Adequate	178 (80)
Adequate	Inadequate	7 (3)
Inadequate	Adequate	27 (12)
Total		222 (100)

the characteristics of participants assigned to initial self- versus clinician collection, nor was the second swab collected less adequate than the first (91% versus 85%, respectively, $P = 0.04$).

The majority of self-collected specimens were adequate for cytologic evaluation, though significantly less so in comparison to clinician-collected specimens (185 [83%] versus 205 [92%], McNemar's chi-square [$P = <0.001$]) (Table 1). Anecdotally, men reported to the study clinician that the illustrated instructions were essential for self-collection and easy to follow. Further, men self-reported their understanding of the collection procedure as very high, with more than 74% assigning themselves the highest score possible and with average scores approaching those assigned to the clinician (4.48 versus 4.90), respectively.

Discussion

In our cohort of mostly HIV-1 seronegative and well-educated young MSM wholly naïve to the technique, we found that most men provided with detailed, illustrated instructions could self-collect anorectal swab specimens that were adequate for cytologic screening. Should the accumulating evidence base eventually support routine cytologic screening of MSM for anal cancer, widespread implementation is likely to depend critically upon effective self-collection of specimens.

Additional self-collection studies in diverse subpopulations of MSM are warranted (for example, among men who are older, HIV-1 seropositive, with low literacy, residing in rural areas, and who self-identify as bisexual). These studies should aim to improve the cytologic adequacy of self-collected anorectal specimens. More prolonged self-sampling, use of a slightly larger swab, or self-collection of 2 swab specimens placed in the same PreservCyt container may suffice.

Our instructions represent a prototype that should be modified to suit others' ends. For example, the word "bum" may need to be replaced with more appropriate local vernacular ("derriere," "butt," or "booty"). Reference to PreservCyt may be changed if other liquid-based Pap smear products are used.

Finally, the highly concordant detection of type-specific human papillomavirus (HPV) we observed in paired self- and clinician-collected specimens in our study provides a strong impetus to evaluate self-collection for detection of rectal bacterial infections as well.¹³ We hope the truly profound implications of screening self-collected specimens for control of resurgent sexually transmitted bacterial infections among MSM will not escape readers' attention.

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