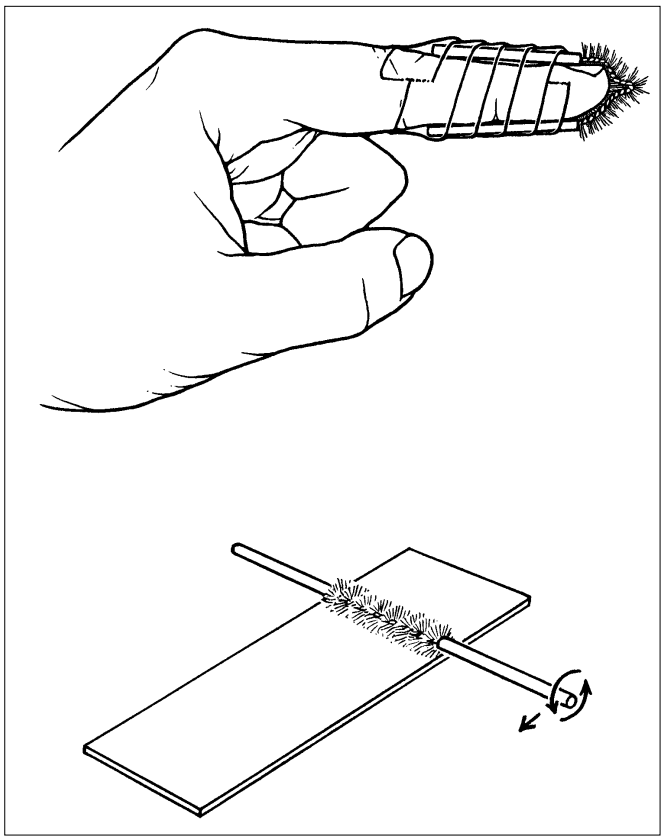
Is it feasible for women to perform their own Pap smears? A research question in progress

Ruth Elwood Martin

Yet another patient crosses her legs and firmly says, "No." The unspoken reasons for her refusal to have a Pap smear may be numerous: past sexual abuse, childhood trauma or a fear of invasive medical interventions. "If it were possible to perform your own Pap smear, would you like to learn how to do it?" I ask, to a resounding, "Yes."

After several similar encounters with patients who demonstrated numerous risk factors for cervical cancer but did not participate in conventional Pap smear screening programs, I decided to explore the potential of a self-collected Pap smear. I reasoned that since we teach women to palpate their own cervixes so they can use cervical caps and diaphragms and check IUD strings, maybe it would be possible for women to take their own cervical smears. Perhaps women who fail to participate in conventional Pap smear screening programs would prefer to do their own Pap smears rather than having them done in a physician's office.

A MEDLINE search for articles on self-collected Pap smear screening revealed no published articles on the topic. Women who wish to use speculums for self-education can access resources in self-help manuals,[1] but these topics do not appear in medical journals. Recent studies on self-collected vaginal samples[2,3] report that human papillomavirus testing of self-collected swabs is less specific than conventional Pap smears for detecting cervical disease and less sensitive than testing of physician-obtained samples. If sensitivity and specificity of these tests improve and costs stay low, this simple procedure may significantly alter cervical cancer screening programs in the future.



Lianne Friesen

Fig. 1: Concept drawing of a cytology brush for a self-collected Pap smear.

I knew I would have to pilot the methodology for a self-collected Pap smear study with willing medical friends before I could proceed. I discussed the idea with a few female colleagues and friends, and considered those who supported the project potential pilot participants. The medical director of the cytology lab I contacted agreed that the technician reading the study slides would be blinded to the origin of the samples. If the self-collected Pap smear method resulted in the identification of a similar percentage of squamo-columnar cells as seen in an age-matched population sample (i.e., through conventional methods), it would be considered accurate.

It was necessary to try the technique myself before involving friends and colleagues. After firmly closing my bedroom door to children, husband and Labrador dogs, I eventually determined that the best position in which to visualize one's cervix using a speculum was to squat over a mirror on the floor, using a desk lamp for additional light. I subsequently learned that my actions followed a tradition of self-experimentation in medicine. However, they paled beside earlier heroics, such as Forssmann's self-cardiac catheterization and Bier and Hildebrandt's self-spinal anaesthesia.[4] Interestingly, I found no reports of self-experimentation by female physicians.

I sent a self-Pap kit containing a disposable speculum, spatula, cytology brush, glass slide, feedback questionnaire and instructions to each of 5 colleagues; 3 completed Pap smears were returned. The result of 1 smear was "negative" cytology, 1 was "not from the squamo-columnar junction"

and 1 smear was lost. Among the comments on the returned questionnaires were, "speculum kept popping out," "uncomfortable and awkward," "squatted over back of toilet seat as floor was too awkward" and "attempted many times ... could not see the cervix ... frustration."

On the basis of the feedback I received, I decided that cervical visualization using a speculum had to be sacrificed for a more user-friendly method. I considered a cytology brush attached to the index finger, using the middle finger to palpate the cervix and locate the cervical os. I sketched a concept (Fig. 1) and consulted a Swedish cytology brush manufacturer to see if they would consider producing it for use in a pilot research study. Their medical advisors politely declined, citing liability concerns.

Feeling somewhat discouraged, I shared my frustrations with my family. When I expressed the desire to find a finger brush with bristles at the tip, my daughter suggested I consider using a pet toothbrush, a plastic finger cot with bristles over the finger pad (Fig. 2). When I contacted the designer, an American dentist, I learned that the brush was originally intended to be used to clean baby's teeth but was subsequently adopted by the pet industry. It would cost US $30 000 to redesign the brush mould with bristles at the tip; the designer suggested that I pilot the existing pet toothbrush first.

After more time behind closed doors, I sent pilot study kit number 2, containing instructions and a pet toothbrush, to 7 medical colleagues and friends. Four women participated in the pilot: 1 woman was unable to reach her cervix and the results from the other 3 were, "not from the squamo-columnar junction." Feedback included comments such as, "can't feel the os through the plastic finger cot," "uncomfortable and awkward, fingers too short," "far easier than last method ... if bristles were at the fingertip I could simply position in the os and twist finger."

I am left wondering if I should seek funding to redesign the brush with the bristles at the fingertip. A supportive friend, herself a survivor of sexual abuse, maintains that she and many other women do not visit physicians' offices for Pap smears. She encourages me to persist with self-collected Pap smear research and to invite others (including a design engineer) who are similarly interested to a focus group discussion in which other design ideas might be explored. Although this could mean more time behind closed doors, the outcome might be worth it.

Fig. 2: The brush used in the second pilot study.

I thank my colleagues and friends who participated in the pilot projects, members of the Peer Support Writing Group, Department of Family Practice, University of British Columbia, who were the first to read this manuscript, and the librarians at the Medical Library Service, College of Physicians and Surgeons of BC, who introduced me to the book *Who goes first?*

Dr. Martin's work on this project was funded by a Lloyd Jones Collins Foundation Clinical Faculty Scholar Award from the Department of Family Practice, University of British Columbia.

Dr. Martin is a Clinical Instructor with the Department of Family Practice, University of British Columbia, Vancouver, BC.

Competing interests: None declared.

References

1. Boston Women's Health Book Collective. *Our bodies, ourselves for the new century: a book by and for women*. New York: Simon and Shuster Trade; 1998.
2. Harper DM, Hildesheim A, Cobb JL, Greenberg M, Vaught J, Lorincz AT. Collection devices for human papillomavirus. *J Fam Pract* 1999;48(7):531-5.
3. Wright TC, Denny L, Kuhn L, Pollack A, Lorincz A. HPV DNA testing of self-collected vaginal samples compared with cytologic screening to detect cervical cancer. *JAMA* 2000;283(1)81-6.
4. Altman LK. *Who goes first? The story of self-experimentation in medicine*. New York: Random House; 1986.

Correspondence to: *Dr. Ruth Elwood Martin, Family Practice Centre, F326–4500 Oak St., Vancouver BC V6H 3N1; fax 604 266-5445; remartin@interchange.ubc.ca*