# Procedures in Family Practice

# Outpatient Endometrial Sampling

W. Glenn Hurt, MD, and Don J. Hall, MD
Richmond, Virginia, and Knoxville, Tennessee

Endometrial sampling is an easily performed, economical, and accurate outpatient diagnostic procedure with wide application in gynecology. It is readily accepted by patients as an alternative to inpatient dilatation and curettage. The information which it provides relative to endometrial histology enables the physician to detect premalignant and malignant processes, to be precise in making diagnoses, and to document the results of therapy.

Endometrial curettage is the operation most frequently performed on women throughout the world. In view of present hospital costs, it behooves physicians to search for ways to reduce the cost of health care without sacrificing its quality. Outpatient endometrial sampling has proved to be a reliable substitute for uterine curettage when properly performed on carefully selected patients. It can significantly reduce the need for inpatient dilatation and curettage and is, therefore, an important diagnostic technique for primary care physicians.

## Indications

Endometrial sampling provides essential information for the diagnosis of many gynecologic disorders (Table 1). The endometrium as an "end-organ" is exquisitely sensitive to fluctuations in systemic levels of estrogen and progesterone. In the absence of exogenous hormones, its appearance provides direct evidence of ovarian function and indirect evidence of the integrity of the hypothalmic-pituitary-ovarian axis.

Ovulation results in corpus luteum formation and the production of progesterone. Progesterone causes an estrogen-primed endometrium to take on a secretory appearance. As maturation of the secretory endometrium progresses in an orderly fashion, it is possible histologically to date the endometrium and relate it to the ovarian cycle. Lags or arrests in maturation may be taken as evidence of inadequate corpus luteum function, whereas failure to develop a secretory endometrium is good evidence for a failure of ovulation. Such information is important in the investigation of female infertility.

Anovulatory cycles usually result in a relative excess of circulating estrogen. Estrogen stimulates the growth of the endometrium and when its action on the endometrium is unopposed by the action of progesterone, endometrial hyperplasia may result. Endometrial hyperplasia is a frequent cause of menstrual disorders. Recent evidence links unopposed estrogen stimulation of the endometrium,

From the Departments of Obstetrics and Gynecology, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia, and The University of Tennessee Memorial Hospital, Knoxville, Tennessee. Requests for reprints should be addressed to Dr. W. Glenn Hurt, Department of Obstetrics and Gynecology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298.

0094-3509/80/010115-04$01.00

**Table 1. Indications for Outpatient Endometrial Sampling**

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|---|
| Infertility evaluation |
| Menstrual disorders |
| Postmenopausal bleeding |
| Hormonal therapy |
| Screening for endometrial malignancy |
| Abnormal cytology |
| Follow-up of therapy |

whether from an endogenous or exogenous source, with progressive degrees of endometrial hyperplasia and the development of endometrial carcinoma. Endometrial carcinoma is the most frequently encountered invasive pelvic malignancy of females in the United States today. Its detection and that of precursor states (ie, adenomatous hyperplasia and atypical adenomatous hyperplasia) make endometrial sampling an essential part of the prevention, diagnosis, and management of endometrial carcinoma.[1]

The extent to which hormonal therapy is successful in manipulating the ovarian cycle (ie, induction of ovulation) and in correcting endometrial abnormalities (ie, hyperplasia) may be determined by endometrial sampling. Endometrial sampling has been recommended by some as a routine diagnostic procedure prior to the initiation of hormonal therapy for menopausal symptoms[2] and at 6- to 12-month intervals during their continuance.

Endometrial sampling also may be indicated in screening asymptomatic patients considered to be at high risk for the development of uterine cancer (obese, hypertensive, diabetic) or those with cytology suggesting an abnormality of endometrial origin.

## Contraindications and Complications

Contraindications to outpatient endometrial sampling are given in Table 2. The absolute contraindications listed are aimed at preventing the development of a more serious condition in the patient. The relative contraindications, although aimed at the prevention of injury, also take into account those cases likely to result in inadequate sampling or to produce quantities of tissue insufficient for diagnosis.

It must be understood and accepted that the need for thorough diagnostic dilatation and curettage cannot be totally replaced by outpatient endometrial sampling. Failure to obtain an adequate specimen for histologic evaluation, discovery of atypical or adenomatous hyperplasia, and persistence of abnormal uterine bleeding should be taken as indication for subsequent dilatation and curettage (D&C).

Complications of endometrial sampling listed in Table 3 occur infrequently and most often do not require aggressive medical or surgical management.

## Technique

Endometrial sampling may be performed to obtain either a cytologic or histologic specimen. Cytologic specimens, in general, have proven to be less reliable and more difficult to interpret than histologic specimens. Histologic specimens are preferred for the detection and grading of premalignant and malignant disease. The majority of studies which have compared the pathologic diagnoses made on outpatient endometrial samples with diagnoses made on tissue obtained at the time of subsequent D&C and/or hysterectomy prove

**Table 2. Contraindications to Outpatient Endometrial Sampling**

| | |
|---|---|
| **Absolute:** | Infection—active, acute |
| | Pregnancy—if abortion undesirable |
| **Relative:** | Inadequate pelvic examination |
| | Cervical stenosis |
| | Uterine flexion |
| | Coagulopathies |

**Table 3. Complications of Outpatient Endometrial Sampling**

- Perforation
- Bleeding
- Infection
- Syncope
- Drug sensitivity

histologic sampling to be 90–98 percent accurate.[3-5]

Many instruments have been designed specifically for outpatient endometrial sampling. Of those which obtain histologic specimens, the Novak curette and the Vabra Aspirator (Cooper Laboratories, Inc., Wayne, New Jersey) appear to be the most frequently used (Figure 1). The Novak curette is convenient, simple, and reusable. The Vabra Aspirator has a cannula of smaller diameter, requires suction, and is disposable. It would appear that although the Vabra Aspirator is more expensive, its use causes less patient discomfort and results in better sampling. The discomfort encountered during endometrial sampling has been equated with that of the insertion of an intrauterine device.

Endometrial sampling should always be preceded by an adequate bimanual pelvic examination to determine uterine size, shape, position, and mobility. The cervix should be cleansed with an antiseptic solution. If paracervical anesthesia is desirable, it should be administered; however, this is usually not required in a well-counseled patient. A tenaculum is applied to the anterior lip of the cervix and gentle traction applied so as to straighten the uterine axis. If an endocervical curettage is indicated, as in the patient with postmenopausal bleeding, it may be performed using a Kevorkian endocervical curette. The uterus should be sounded to determine its depth. The curette is gently inserted to the fundus with its curve coinciding with that of the uterine canal.

If the Novak curette is used, pressure is applied so the tip and serrated opening will scrape the endometrial surface upon withdrawal. A syringe may be attached to the curette to provide suction and thereby increase the amount of tissue that is obtained.

The Vabra Aspirator is purchased as a sterile disposable unit consisting of a metal aspiration cannula and a collecting chamber. The cannula has a diameter of 3 mm. Near its distal end is a rectangular opening which acts as a curette. A

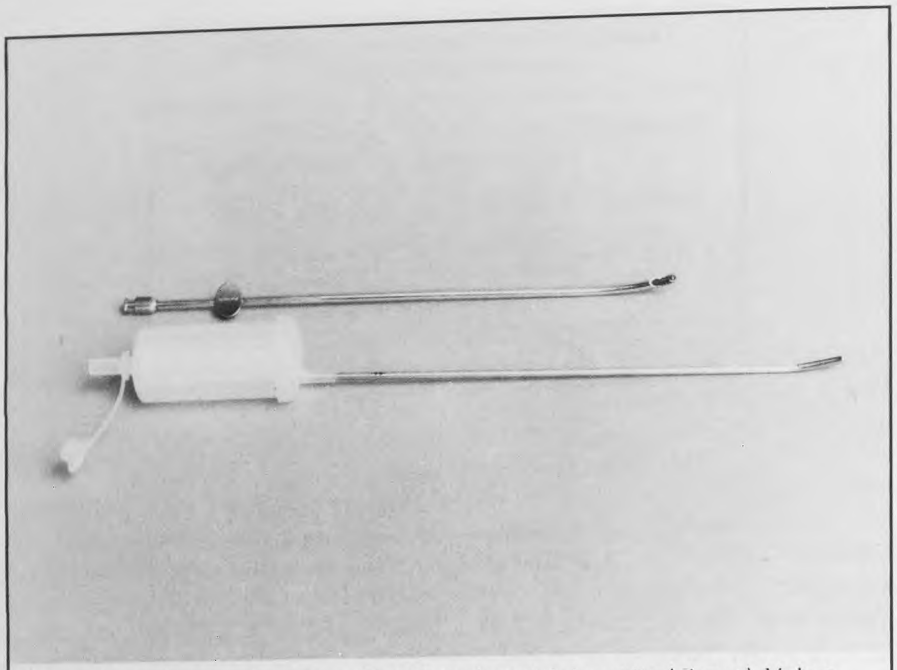

Figure 1. Endometrial curettes. Novak endometrial curette (above). Vabra Aspirator (below)

suction pump capable of producing a negative pressure of at least 160 mmHg is attached via tubing to the aspirator's collecting chamber. When the pressure-equalizing hole on the proximal part of the metal cannula is occluded by a finger, intermittent suction may be effected. The curette, with suction applied, is moved in a back and forth motion and also is swept over the endometrial surface in rotary fashion so the tip and lateral edges of the curette contact the endometrial surface. The procedure usually lasts from 30 to 90 seconds. The aspirate collects in a plastic filter situated within the collecting chamber. The chamber is disconnected from the suction tubing and capped. The cannula is discarded and a preservative (4 percent formaldehyde solution) is added to the specimen in the collection chamber. The end of the chamber is capped and the specimen is labeled.

A limited amount of endometrial tissue, such as can be obtained by one swipe of the curette across the endometrial surface, may be sufficient for endometrial dating as a part of an infertility evaluation. It is important, however, for the physician who is screening for uterine malignancy, to obtain adequate tissue samples from all quadrants of the endometrial surface to minimize the risk of missing isolated areas of premalignant or malignant change. Thus, there is a very definite conceptual and practical difference between the standard endometrial biopsy and the outpatient endometrial sampling as performed with the Vabra Aspirator.

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