Office Endometrial Sampling

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The concept of office endometrial sampling is not new. Kelly recommended its use in 1925.[1] More recently, the procedure has received increased attention as physicians and the public have sought ways to curb the spiralling cost of medical care. Uterine curettage is the operation most commonly performed on women throughout the world. As an inpatient procedure, it costs $500 to $600. The same procedure performed in an outpatient surgical center costs $350 to $400. In over 90% of cases, an adequate endometrial sample may be obtained in the office at a cost of $50 to $60. For office endometrial sampling to be acceptable to the physician, it must be simple to accomplish, relatively inexpensive to use, and agreeable in terms of patient comfort and morbidity. The specimen obtained should be representative of the entire endometrium, adequate for pathological study, and easily preserved, transported, and processed.

Indications for office endometrial sampling are given in the Table. In the adolescent female there is rarely an indication for endometrial sampling; however, during the reproductive years and thereafter, there are frequent indications for sampling. As the endometrium is extremely sensitive to systemic levels of the sex hormones, estrogen and progesterone, sampling will help determine ovarian function and give indirect evidence of the status of the hypothalamic-pituitary-ovarian axis. Ovulation is usually followed by corpus luteum formation. The corpus luteum produces progesterone and causes the endometrium to take on a secretory appearance. Timed endometrial sampling may be used to prove ovulation and evaluate corpus luteum function. A delay in the maturation of the endometrium may be taken as evidence of an inadequate corpus luteum. Persistence of a proliferative endometrium, without the development of a secretory component, is evidence of anovulation. The documentation of anovulation or of inadequate corpus luteum function is important information in an infertility work-up. Chronic anovulation with prolonged stimulation of the endometrium by unopposed estrogen can lead to the development of endometrial hyperplasia. This is a common cause of abnormal uterine bleeding. Severe hyperplasia, of the adenomatous or atypical variety, is considered a precursor of endometrial carcinoma. Endometrial sampling may be used to evaluate the results of hormonal therapy whether it be for the induction of ovulation, the eradication of endometrial hyperplasia, or as replacement therapy to control the vasomotor symptoms of the menopause. The obese, hypertensive, and diabetic patient who is considered to be at increased risk for the development of endometrial carcinoma, or the patient with abnormal endometrial cytology, may undergo sampling as a screening procedure in an effort to detect the presence of a premalignant or malignant condition.

Absolute contraindications to endometrial sampling are acute pelvic infection and pregnancy, if abortion is not desired. Relative contraindications include an inadequate pelvic examination, cervical stenosis, marked anterior or posterior uterine flexion, and clotting deficiencies.

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Techniques for sampling the endometrium usually produce either a cytologic or a histologic preparation. Cytologic preparations, in general, are less desirable than histologic preparations as they are more difficult to interpret. This is especially true in the detection and grading of neoplasms of the endometrium. Most pathologists are more comfortable using histologic preparations for the evaluation of endometrial disease.

There are two uterine curettes commonly used for office endometrial sampling. The Novak curette was developed in 1935, and the Vabra Aspirator (Cooper Laboratories, Inc, Wayne, New Jersey) in 1968. Both obtain histologic specimens.

The Novak curette has a metal cannula of 5 mm diameter and a rectangular, serrated opening just proximal to its distal end. A syringe may be placed on the proximal end of the Novak curette in order to apply suction against the endometrial lining and improve sampling. The Novak curette is especially well adapted to obtaining endometrial strips from various quadrants of the endometrial cavity for use in dating the endometrium in order to prove ovulation and evaluate corpus luteum function. Kahler, in 1969, presented a series of 160 patients in which he compared biopsies of the endometrium taken with the Novak curette with subsequent dilatation and curettage and hysterectomy specimen analysis. In his series there was a 96% positive correlation between the diagnosis obtained using the Novak curette and that obtained on subsequent dilatation and curettage or hysterectomy.[2] Hofmeister reported on over 20,000 biopsies using the Novak curette. He sampled all patients over the age of 35 on a routine basis and those under the age of 35 who reported irregular menses. Seventeen percent of these patients who were found to have endometrial carcinoma were asymptomatic at the time of endometrial sampling. It is on this basis that he states that one in five endometrial carcinomas are asymptomatic and will not be detected without routine endometrial sampling. Hofmeister reported an accuracy of 94% using the Novak curette.[3]

The Vabra Aspirator comes as a disposable unit consisting of a 3 mm metal cannula which has a rectangular curette with sharp lateral edges located just proximal to its distal tip. The metal cannula is attached to a plastic tissue filter and collection container. The collection container must be attached to a vacuum source supplying a negative pressure of approximately 160 mm Hg. With suction applied by the occlusion of holes in the proximal end of the cannula, the curette should be swept in a rotary fashion about the entire endometrial cavity. The specimen will be trapped in the plastic filter. When the procedure is completed, suction is disconnected. The curette is removed from the plastic container, fixative is added to the specimen, and the plastic container is capped. The Vabra Aspirator costs approximately $12 and is disposable. Discomfort caused by Vabra curettage has been equated to that of an intrauterine contraception device insertion. The procedure has met with a high degree of physician and patient acceptance. The Walter Reed Army Hospital has reported 95% accuracy in 300 cases of Vabra curettage followed by a subsequent gynecologic dilatation and curettage performed in order to compare pathologic diagnoses. In that series, one third of the patients were sampled without anesthesia and two thirds with paracervical block anesthesia. The paracervical block anesthesia did not significantly increase the acceptance of the procedure, although it reduced the percentage of patients who reported that they experienced "severe" pain. Ninety-four percent of the patients who have had both the Vabra curettage and subsequent gynecologic dilatation and curettage stated that they would prefer to have the Vabra curettage rather than an inpatient dilatation and curettage if this were indicated at a future date.[4]

If office endometrial sampling is to be performed, the patient should be put at ease with an explanation of why the procedure is being done, how it is going to be performed, and what she should expect in the way of discomfort and bleeding. An adequate pelvic examination must be performed in order to determine uterine size

TABLE
Indications for
Office Endometrial Sampling

Infertility work-up
Menstrual disorders
Postmenopausal bleeding
Hormonal therapy
Screening for endometrial cancer
Abnormal endometrial cytology
Follow-up of therapy

and position. A uterus which is over 8 to 10 weeks gestational size is not ideal for office endometrial sampling. If it is decided to proceed with sampling, the cervix should be cleansed with an antiseptic solution and a tenaculum placed on the anterior lip of the cervix so that traction will straighten the uterine canal. The uterus should be sounded in order to determine the direction and depth of the uterine canal. The sampling device may then be inserted and the specimen collected. The specimen may be preserved in formaldehyde solution.

Complications associated with endometrial sampling are similar to those of dilatation and curettage but rarely require surgical management. The most frequent complications are uterine perforation, hemorrhage, infection, syncope and pain. Drug sensitivity, if it occurs, is related to the use of systemic analgesia and paracervical block anesthesia.

It must be emphasized that if the physician is unable to obtain an adequate tissue specimen or the pathologist is unable to render an absolute diagnosis on the tissue specimen, office endometrial sampling must then be followed by a more thorough inpatient uterine dilatation and curettage performed under anesthesia. This is to stress the fact that although over 90% of all cases in which endometrial sampling is indicated can be handled as an office procedure, at least 10% of all cases needing sampling must have it performed on an inpatient basis because of inadequate sampling and technical or anatomical difficulties.

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