

The occasional endometrial biopsy

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INTRODUCTION

An endometrial biopsy is a safe and efficient office-based procedure for sampling the endometrium in a patient presenting with abnormal uterine bleeding.[1–3] The endometrial sample provides a tissue diagnosis for guiding further management. Insertion of an intrauterine contraceptive device and an endometrial biopsy share common steps, which can aid the rural practitioner when performing the occasional endometrial biopsy.

Endometrial biopsy has replaced dilation and curettage (D&C) as the initial procedure for sampling the endometrium because it is safer, more convenient, less costly and gives equally accurate results. Studies comparing endometrial biopsy and D&C have found excellent agreement of samples (83%–96%).[4,5] Endometrial biopsy gives an adequate tissue sample in 84% to 91% of women when the polypropylene catheters are used.[6,7] The procedure is highly sensitive for the detection of endometrial carcinoma. A meta-analysis that included almost 8000 women revealed that endometrial biopsy using a polypropylene catheter detected 99.6% of endometrial cancer in postmenopausal women and 91% of endometrial cancer in premenopausal women, along with 81% of atypical hyperplasia.[8]

INDICATIONS FOR ENDOMETRIAL BIOPSY

In the investigation of abnormal premenopausal bleeding, pelvic ultrasonography detects polyps and fibroids with a sensitivity of 80% and a specificity of 69%.[9] However, there are no normal values for the endometrial thickness of premenopausal women on ultrasonography in ruling out endometrial hyperplasia or carcinoma. Guidelines from The Society of Obstetricians and Gynaecologists of Canada recommend that all high-risk patients with abnormal bleeding have an endometrial biopsy performed (high-risk criteria comprise age > 40 yr, weight ≥ 90 kg, infertility, polycystic ovaries, tamoxifen therapy, and family history of endometrial or colonic cancer).[10]

There is some controversy in the order of investigations for the assessment of postmenopausal bleeding (pelvic ultrasonography and/or endometrial biopsy).[10–12] An endometrial thickness of 5 mm or greater on pelvic ultrasonography has a 7%–31% association with endometrial cancer.[11] These patients require an endometrial biopsy to obtain a histologic diagnosis. Consideration may be given to not performing an endometrial biopsy in postmenopausal women with an endometrial thickness less than 5 mm on ultrasonography, because their risk of endometrial cancer is less than 0.07%.[11–13] Despite a normal endometrial thickness (< 5 mm), patients with persistent postmenopausal bleeding may need further investigation with repeat ultrasonography or an endometrial biopsy to rule out endometrial abnormalities, including cancer.

PREPROCEDURE ASSESSMENT

1. A pelvic examination is performed to determine uterine size and position.
2. The patient's medical history is re-

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viewed to clarify any contraindications: pregnancy, acute cervical or pelvic infections, cervical cancer, coagulopathy.
3. An explanation of the procedure is given to the patient.
4. Benefits of the procedure are discussed: obtaining a tissue sample to assist with diagnosis and treatment.
5. Risks of the procedure are discussed: potential pain and discomfort, inadequate tissue sample, infection, uterine perforation.
6. The patient's questions are answered and consent for the proposed procedure is obtained.
7. Instructions for any premedication are clarified.

PREMEDICATION

Patients will experience mild to moderately severe pain during an endometrial biopsy. Commonly, patients are advised to take a nonsteroidal anti-inflammatory drug (NSAID) 1 to 2 hours before an endometrial biopsy and to repeat the dosage several hours after the procedure, if needed, to reduce the pain associated with the procedure, along with post-procedure uterine cramping. The patient's acceptance of predictable discomfort with an endometrial biopsy is improved by a detailed explanation given before the procedure, along with psychologic support during the procedure.[14] If more analgesia is needed, see "Practical tips."

EQUIPMENT

The most commonly used endometrial biopsy catheters consist of a polypropylene sheath with an inner plunger (Fig. 1). Negative pressure is produced within the uterine cavity by withdrawing the inner plunger. The outer sheath has a small circular curette that opens proximal to the distal tip. Endometrial tissue is sheared by the curette and drawn into the catheter by the negative pressure of the device. Biopsy catheters are produced by several manufacturers: the outer sheath diameter ranges from 2 to 4 mm with a length of approximately 25 cm.

In addition to the endometrial biopsy catheter, other equipment required for obtaining an endometrial biopsy include the following (Fig. 2):

- sterile procedural tray
- gloves
- vaginal speculum
- basin with cotton balls or gauze soaked in povidine or normal saline
- ring forceps
- cervical tenaculum
- cervical dilators
- uterine sound
- scissors
- formalin container for biopsy sample

PROCEDURE

After reviewing the preprocedure assessment, place the patient in the lithotomy position.

1. After gloving, insert a sterile speculum and visualize the cervix.
2. Using the ring forceps, clean the cervix with cotton balls soaked in povidine or normal saline.
3. Slowly place the cervical tenaculum on the anterior lip of the cervix. Grasp a significant portion of the cervix to prevent the tenaculum from being pulled out during the procedure. (Use of a tenaculum is optional.)
4. Apply steady outward pressure to the tenaculum to straighten the cervical canal. Slowly insert the uterine sound through the cervical os with steady inward pressure. Obtain the depth of the uterine cavity by gently pushing the sound to the uterine fundus (average depth 5–8 cm).
5. If the uterine sound will not pass through the cervical os, try inserting the smallest cervical dilator or cervical os finder. If successful, use progressively larger dilators until the sound can be passed.

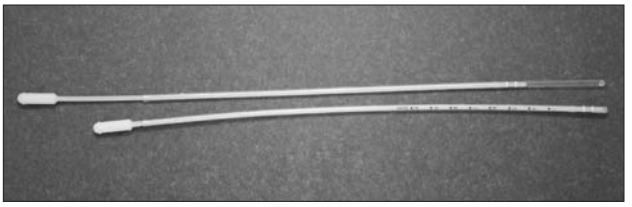


Fig. 1. Endometrial biopsy catheter.



Fig. 2. Equipment tray: vaginal speculum, basin with cotton balls, ring forceps, cervical tenaculum, cervical dilators, uterine sound, scissors.

6. Insert the endometrial biopsy catheter tip through the cervical os until it reaches the uterine fundus (Fig. 3). You can then let go of the tenaculum. Pull back on the biopsy catheter plunger to produce suction.
7. By holding the biopsy catheter between the thumb and forefinger, make passes of the uterine cavity using a simultaneous pulling and rolling movement. To maintain negative pressure, ensure that the catheter is brought to the edge of the internal cervical os with each pass, but not through the os.
8. Systematically ensure that the entire uterine cavity is sampled, until the catheter fills with tissue.
9. Withdraw the catheter from the uterus and, while maintaining sterile technique, push the catheter plunger to expel the tissue into the formalin sample jar. Use scissors to cut off the tip of the catheter if there are problems with expelling the tissue sample.
10. Ask your assistant to hold the sample jar up to the light: endometrial tissue will have a white "worm-like" appearance (Fig. 4).
11. If insufficient tissue is present and the biopsy catheter is intact without formalin contact, consider inserting the catheter back through the cervical canal into the uterine cavity and repeating the steps to obtain a further tissue sample.
12. Slowly remove the tenaculum from the cervix. Visually inspect the cervix and vagina, wiping excess blood and povidine with sterile gauze. Finally, remove the speculum.
13. Instruct the patient to remain lying for several minutes before sitting slowly, to prevent the development of a vasovagal reaction.
14. Review aftercare instructions with the patient: contact office if bleeding is heavier than normal menses, cramping continues for longer than 48 hours, development of a foul vaginal discharge or fever. Clarify the need for analgesia along with a follow-up appointment to discuss results and initiate further treatment.
15. Complete a procedural note and pathologic requisition.

PRACTICAL TIPS

Analgesia/anesthesia

An endometrial biopsy can be completed in most patients with the use of an NSAID before the procedure, although support from the literature is limited.[15,16] A variety of medications have been used for the patient who experiences more severe pain. Literature findings have shown mixed results with single agents, which may be because of a complex sensory nervous system where the cervix and lower uterine cavity are richly innervated by a parasympathetic plexus, while the uterine fundus is supplied by sympathetic nerves via the ovarian plexus.[17–20] The best evidence for endometrial biopsy analgesia is a combination of an NSAID before the procedure and intrauterine lidocaine (3–5 mL of 2% injection solution) administered through the cervical canal with an angiocatheter before cervical manipulation.[21] Preoperative or intraoperative narcotics are effective for reducing patient discomfort, although some combinations require monitoring equipment not present in most office settings.[22] Oral, sublingual or intravenous benzodiazepams can be considered for the anxious patient. A paracervical block can be performed to reduce the pain experienced by application of the tenaculum or cervical dilation. However, this should be reserved for patients more likely to experience increased pain during this component of the procedure because of cervical stenosis.[17]

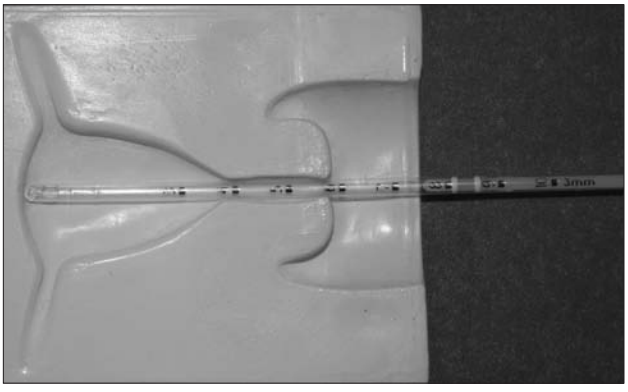


Fig. 3. Endometrial biopsy catheter inserted to uterine fundus.



Fig. 4. Endometrial biopsy tissue sample.

Stenotic cervical canal

A tight or stenotic cervical canal is more likely to occur in young nulliparous or elderly postmenopausal patients. Although literature findings vary on its efficacy, many practitioners use misoprostol 400 μg, given at least 12 hours before the procedure, either orally or vaginally, to enhance cervical dilation.[23,24] Patients should receive information on the potential for uterine cramping or diarrhea. An additional approach includes the insertion of a cervical osmotic laminaria the day before the procedure. Some practitioners use the biopsy catheter as a sound and stiffen the catheter by storing it in the freezer. If one cannot insert the sound or endometrial biopsy pipette through the cervical os, the use of the smallest cervical Hegar dilator or cervical os finders will address this problem in most cases. Cervical os finders (Fig. 5) are a flexible plastic device available in various sizes (one time use or repeat use after autoclaving), which can be used to initially "thread" and dilate the cervical os. If unsuccessful, the procedure can be rescheduled and attempted after the administration of preprocedure misoprostol. Intraoperative ultrasonography to assist in canalizing the cervical canal with a variety of instruments has been reported, although practitioners must take care whenever encountering a stenotic cervix to not create a false passage.[23] Infrequently, referral to a gynecologist or general surgeon, or general anesthesia may be necessary in the management of a stenotic cervical os.

Inadequate samples or ongoing uterine bleeding

Inadequate samples are more common in the postmenopausal woman with an atrophic endometrium. In these patients, along with patients with a normal endometrial biopsy and ongoing uterine bleeding, there is an approximate 10% risk of a missed lesion. Because there is a greater likelihood of focal pathology, further investigations may include hysteroscopy, endometrial brush cytology[25,26] or endometrial sampling directed by ultrasonography.[27,28]

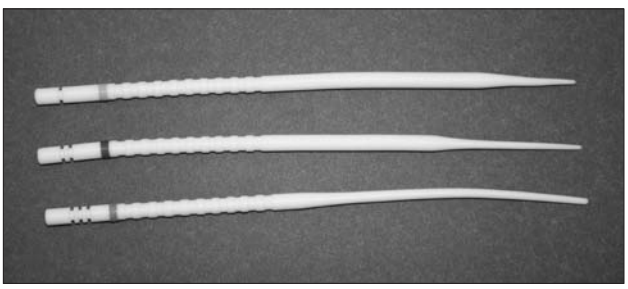


Fig. 5. Cervical os finders.

Infection

Infectious complications after endometrial biopsy are rare. Using a sterile no-touch technique and cleaning the cervix with antiseptic may reduce the risk of infection. Evidence for antibiotic prophylaxis is lacking, including the prevention of infective endocarditis in patients with specific cardiac conditions.[29,30]

Uterine perforation

Perforation of the uterus can occur with use of rigid devices for dilation of the cervical os or sounding of the uterus. Although the risk has been reported as 0.9% during D&C,[31] the risk is much lower with the use of flexible polypropylene biopsy catheters. Patients in whom a perforation is suspected should initially be observed because most perforations will spontaneously close. Patients experiencing increasing pain, emesis or fever should be admitted to hospital under orders of nothing by mouth, started on intravenous antibiotics and further investigated.

CONCLUSION

An endometrial biopsy is an essential procedure in the investigation and management of abnormal uterine bleeding. Intrauterine contraceptive device insertion and endometrial biopsy share common steps, which can aid the rural practitioner when performing the occasional endometrial biopsy. Online videos may further assist the practitioner in attaining competency in this procedure.[32]

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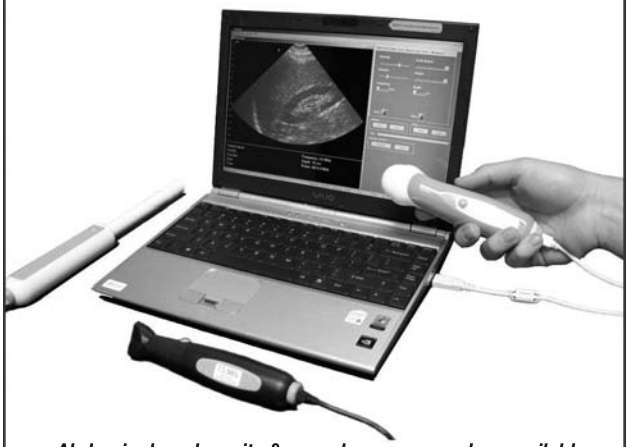
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