Practice Tips

Series on women's health

Endometrial biopsy

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Abnormal uterine bleeding is common among perimenopausal and postmenopausal (amenorrheic for 12 months or longer) women. During perimenopause, which can last up to 8 years, frequent anovulatory cycles can result in proliferative changes in the endometrial lining and possibly in irregular and heavier vaginal bleeding. Postmenopausal bleeding, often caused by endometrial atrophy, must always be investigated.[1] Controversy persists about whether initial workup should include endometrial biopsy (sensitivity up to 97.5% for the detection of endometrial carcinoma) or transvaginal (most helpful to assess endometrial lining) pelvic ultrasound (sensitivity 90% to detect abnormalities).[2] Guidelines suggest that if results of pelvic ultrasound show endometrial thickness of 5 mm or more, it is advisable to perform an endometrial biopsy. If the lining thickness is less than 5 mm, likelihood of endometrial cancer is extremely low. Endometrial biopsy is contraindicated if patients are pregnant, are suffering from untreated cervical, vaginal, or tubal infection, or are suffering from certain coagulopathies.[3]

Materials

The following materials are required to perform endometrial biopsies:

- formalin container (for specimen),
- drape,
- gloves,
- vaginal speculum,
- uterine sound,
- metal basin of cotton balls soaked in proviodine (or prepackaged proviodine swabs),
- endometrial suction catheter,
- cervical tenaculum (to grasp cervix if required),
- ring forceps (if required to wipe cervix with cotton balls),
- gauze (4x4s),
- cervical dilators,
- anesthetic gel (such as xylocaine) or spray (such as 20% benzocaine), and
- scissors (if tip of catheter needs to be cut off to deliver sample into container).[3]

Procedure

Before starting, all equipment and biopsy materials should be set up and prepped, and informed consent should be obtained from patients. Patients can be given vaginal misoprostol, a synthetic analogue of prostaglandin, at a dose of 2 tablets of 200 µg 4 to 12 hours before the procedure (warn patients about potential cramping); or oral nonsteroidal anti-inflammatory drugs, such as ibuprofen 600 mg, naproxen 500 mg, or ketorolac 10 mg (taken with food or milk), about 30 minutes before the biopsy, to alleviate or prevent uterine cramping. A 3-mm osmotic laminaria (seaweed) can also be inserted in the os 4 to 6 hours before the biopsy to promote cervical dilatation.

An endometrial suction catheter is a thin, somewhat flexible, hollow plastic tube about 3.1 mm in diameter, with a suction piston inside the lumen.[2] In order to facilitate insertion, the sampling catheter could be placed in a freezer for a few minutes to stiffen the tube. Prior knowledge of uterine position, obtained through bimanual examination or pelvic ultrasound, influences the angle of catheter insertion.

Securely position the plastic or metal vaginal speculum (warmed and lubricated with jelly) to visualize the cervix. Then cleanse the cervical os with proviodine-soaked swabs. In order to straighten the path from the outer vagina to the uterine fundus and to provide resistance against the force used for insertion of the catheter, a toothed tenaculum may be applied at about 12 o'clock on the cervix, typically midway between the os and the outer cervical edge. To lessen potential patient discomfort with this step, patients could be asked to cough when the tenaculum is being applied. Insertion of the suction catheter without the use of the tenaculum is ideal. The tip of the catheter may also be dipped in a sterile topical anesthetic prior to insertion to promote patient comfort.

A cervical or paracervical block can be used. For a cervical block, inject 1% or 2% lidocaine with epinephrine submucosally in the centre of each cervical quadrant.[4] Anything inserted through the cervical os can cause pain. Patients need to be warned each time.

Sound the depth of the internal uterine body using the sampling catheter. It is typically 6 to 8 cm in length. If this is not close to the measured length with sounding, the catheter might not yet be properly placed. If the insertion is initially unsuccessful, use a metal uterine sound or plastic cervical dilator to open the cervical os (particularly the internal one) further.

Insert the tip of the sampling catheter just beyond the internal cervical os and position it within the uterine cavity. While holding the outer catheter sheath between the thumb and index finger of one hand, use the other hand to draw the internal piston out of the tube in one continuous motion to create negative pressure or suction within the lumen. Hold the catheter

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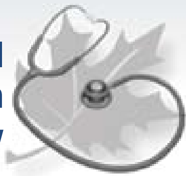

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sheath in a pincer grasp between the thumb and index finger, and insert the tube up as far into the fundus as possible until resistance is felt (without perforating the uterine wall). Slowly withdraw the tube using both hands in a spiral or twirling movement from the fundus toward the cervix, while simultaneously moving the catheter back and forth within the uterine cavity between the fundus and the internal cervical os. The goal is to have the lumen of the sampling tube slowly fill up with endometrial tissue. Several tube insertions might be required to obtain an adequate sample.

Expel the contents of the tube into the formalin by reinserting the piston into its sheath. Avoid dipping the tip of the tube into the formalin in case further passes are required. If the biopsy material looks like a dark red earthworm and does not disintegrate in the formalin, it is likely that appropriate biopsy material has been obtained. The speculum and tenaculum, if used, should then be gently removed, and the biopsy container tightly capped to ensure safe transmission to the laboratory.

Follow-up

No further treatment is required for normal biopsy results (proliferative or secretory endometrium). With an atrophic endometrium, hormonal therapy can be tried. If vaginal bleeding persists, further workup is required. Simple hyperplastic tissue progresses to cancer in only 5% of cases. It can be managed with a trial of cyclic medroxyprogesterone, 10 mg for 10 to 14 days of the month for 3 to 12 months, and a follow-up endometrial biopsy after the progestogen treatment. Complex hyperplastic tissue progresses to carcinoma in about 30% to 45% of women. This finding typically merits referral to a gynecologist for consideration of dilation and curettage or hysterectomy. If endometrial carcinoma is detected, prompt referral to a gynecologic oncologist is warranted.[3]

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References

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4. Zuber TJ, Mayheux EJ Jr. *Atlas of primary care procedures*. Philadelphia, Pa: Lippincott Williams & Wilkins; 2003.

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