A Primer for Family Physicians:

Endometrial Biopsy and LNG-IUS Insertion

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Two useful and underutilized procedures that can be easily performed in a family doctor's office are biopsy of the endometrium and insertion of the levonorgestrel intrauterine system (LNG-IUS). These procedures complement one another in that an endometrial biopsy is performed for the investigation of abnormal uterine bleeding (AUB) and the LNG-IUS is used for its treatment.

Although officially indicated for contraception, the LNG-IUS is a popular and effective tool for the treatment of premenopausal AUB that has been proven to be benign. It is an intrauterine device (IUD) with a cylindrical progesterone reservoir that releases an average of 14 mcg of levonorgestrel into the intrauterine cavity. The release rate is initially 20 mcg/day, then gradually diminishes over time. By the end of the five year lifespan of the device, it only releases 11 mcg of levonorgestrel per day. In contrast, the oral contraceptive pills (OCs) with estrogens and progestins, delivers 150 mcg/day and 100 mcg/day of levonorgestrel.

One of the desirable side-effects seen with LNG-IUS is amenorrhea in at least 20% of patients. An advantage of the progesterone-only hormonal treatments (LNG-IUS and Depo-Provera®), over the estrogen containing OCs, is that they do not promote the growth of fibroids and may in fact cause some shrinkage. The LNG-IUS, because of its low dose of progesterone, is not associated with an increased risk of osteoporosis.

Kate's Situation

- Kate, 48, is a Gravida-four and Para-four homemaker who complains of heavier and more frequent menstrual bleeding over the past year.
- Formerly every 30 days, her periods are now every 25 days and last for eight to 10 days.
- On the first day of her menses, she changes tampons every one to two hours. She stays at home on these days because of fatigue, cramping and concerns about leaking. She has tried an oral contraceptive pill (OC) in the past, but discontinued it because of nausea.
- Menarche was at age 12. She has always had regular periods and had no difficulty getting pregnant.
- Kate has had four sexual partners in her lifetime. She has been in a monogamous relationship with her husband for the past 20 years. Her husband has had a vasectomy.
- There is no family history of endometrial or colon cancer.

Physical exam:

- Normal, except her weight is 91 kg
- Body Mass Index (BMI) is 29.5
- Pelvic exam is normal
- Uterus is anteverted
- Labs indicate a fasting glucose of 4.5 mmol/L, TSH 2.0 mU/L, Hgb 122 g/L, ferritin 8 ug/L
- PAP is normal

What should you do next? Go to page 82 to find out.

Following-Up With Kate

- Kate has risk factors for endometrial cancer (age > 40, weight > 90 kg). Therefore, she should be considered for an endometrial biopsy.

Kate's endometrial biopsy results reveal:

- Proliferative endometrium without hyperplasia or atypia

Treatment options include:

- OC,
- levonorgestrel intrauterine system (LNG-IUS) and
- cyclic progestins

For more on Kate, go to page 84.

Endometrial biopsy

Required equipment:

- Speculum
- Endometrial suction curette
- Tenaculum
- Formalin-containing specimen bottle

Optional equipment:

- Ring forceps
- Gauze
- Iodine solution (*e.g.,* betadine)
- Uterine sound
- Dilators

Table 1

Risk factors for endometrial cancer[1]

- Age > 40
- Weight > 90 kg
- Anovulatory cycles/Polycistic Ovarian Syndrome
- Family history of endometrial or colon cancer
- Endometrial lining >10 milimetres on ultrasound for the first half of the cycle
- Diabetes
- Tamoxifen use

Checklist for performing an endometrial biopsy:

- ☑ 1. Obtain consent.
- ☑ 2. Perform a bimanual examination to determine the position of the uterus.
- ☑ 3. Insert a vaginal speculum and visualize the cervix.
- ☑ 4. Cleanse the cervix with iodine soaked gauze applied with the ring forceps (optional).
- ☑ 5. Introduce the endometrial suction curette through the cervical canal, into the uterine cavity and up to the fundus. Sometimes you will be required to use a tenaculum to stabilize the cervix, but this is not always necessary. If you are unable to introduce the catheter through the internal os using gentle, steady pressure, you may use a uterine sound or dilator to dilate the cervical os.
- ☑ 6. Document the depth of the uterus with the endometrial suction curette (normal is between six and eight centimetres).
- ☑ 7. Stabilize the sheath with one hand and draw the piston completely back in one continuous motion to create negative pressure within the lumen.
- ☑ 8. Rotate the sheath between the thumb and index finger and move it in and out between the fundus and the internal os, three to four times. Slowly withdraw the suction curette in a spiral fashion, moving from the fundus toward the cervical os. Fill the lumen with tissue as completely as possible. Sometimes several passes will be required.
- ☑ 9. Withdraw the suction curette. The tissue sample should hang together like a dark red worm.
- ☑ 10. If the tissue sample is insufficient, you may need to reinsert the suction curette and repeat steps five through 10.
- ☑ 11. Expel the sample into the formalin by advancing the piston into the sheath.
- ☑ 12. Remove the speculum from the vagina.

Tips and tricks

To dilate the cervical os—therefore, increase the chance of success, while decreasing your patient's discomfort during the procedure—you can administer 200 mcg misoprostol. The misoprostol 200 may be inserte at least four hours, but no more than 12 hours, before the procedure. If the procedure is scheduled for the morning, it may be given at bedtime on the night before. If the procedure is scheduled for the afternoon, it may be given first thing in the morning.This is an off-label use of the medication and can cause severe cramping in some patients.

LNG-IUS insertion

Required equipment:

- Sterile speculum
- Sterile gloves
- Ring forceps
- Iodine solution (*e.g.,* betadine)
- Gauze
- Uterine sound or endometrial biopsy catheter
- Tenaculum
- Long-handled scissors

Tips and tricks

If you ask the patient to cough while you apply the tenaculum to the cervix, it reduces the patient's discomfort.

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Checklist for inserting an LNG-IUS:

- ☑ 1. Obtain consent.
- ☑ 2. Perform a bimanual examination to determine the position of the uterus.
- ☑ 3. Insert a vaginal speculum and visualize the cervix.
- ☑ 4. Cleanse the cervix with iodine soaked gauze held with ring forceps.
- ☑ 5. Sound the uterus using either an endometrial biopsy catheter or a uterine sound.
- ☑ 6. Open the LNG-IUS package enough to reveal the shaft of the inserter.
- ☑ 7. Wearing sterile gloves, make sure that the slider is in the most distal position.
- ☑ 8. Ensure that the arms of the system are in a horizontal position. If not, align them on the sterile surface of the packaging.
- ☑ 9. Pull on the threads to place the system in the insertion tube and fix the threads in the cleft at the end of the shaft.
- ☑ 10. Set the upper edge of the flange to the uterine sound measurement that was taken previously.
- ☑ 11. Move the inserter gently into the uterus, until the flange is about two centimetres from the cervix.
- ☑ 12. Release the arms of the system by pulling the slider back until it reaches the raised mark on the shaft.
- ☑ 13. Push the inserter gently inwards until the flange touches the cervix.
- ☑ 14. Release the system by pulling the slider back all the way. The threads will release automatically.
- ☑ 15. Remove the inserter from the uterus. Cut the threads to have at least two centimetres visible outside the cervix. You may also cut them longer and tuck them behind the cervix.

One of the desirable side-effects seen with LNG-IUS is amenorrhea in at least 20% of patients.

Tips and tricks

- Premedicating the patient with a non-steroidal anti-inflammatory drug (*e.g.,* ibuprofen, 400 mg) 30 minutes prior to the procedure can reduce cramping.
- If faced with a stenotic cervical os, five millilitres of two per cent lidocaine jelly can be applied to the os with a cotton swab to facilitate dilatation.

More on Kate

- Kate refuses the OC because of her previous experience with it. She elects to try the LNG-IUS.
- You give her medroxy progesterone acetate, 10 mg, orally, daily for 10 days. This will cause a withdrawal bleed prior to inserting the LNG-IUS.
- You insert the LNG-IUS easily to a depth of eight centimetres.
- Kate reports that she has intermenstrual spotting. However, the spotting resolves after two months.
- Her periods now last about one day and she changes her tampon every six hours.

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References
1. Bordman R. et al: An approach to the diagnosis and management of Benign Uterine Conditions in Primary Care. Centre for Effective Practice, Ontario College of Family Physicians 2005.

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