



## Endometrial Ablation: What FPs and Their Patients Need to Know



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Endometrial ablation (EA) has become a standard treatment option for menorrhagia (heavy regular periods) and menometrorrhagia (heavy irregular periods).

This minimally invasive technique was developed in the late 1980s and early 1990s, along with the evolution of hysteroscopy and has been performed in Canadian centres for the last 10 to 15 years. The principle is to remove and/or destroy the endometrium which is the source of the bleeding rather than removing the whole organ; therefore this offers patients a less invasive, safer, cheaper option with much quicker recovery time compared to hysterectomy. However, definite limitations exist and these need to be understood. The procedure does have a failure rate and is not risk-free.

### ► *What is menorrhagia/ menometrorrhagia?*

A full discussion of this problem is beyond the scope of this review. However, briefly, FPs need to have a practical approach to patients presenting with abnormal menstrual bleeding.

The average blood loss per menses is about 40 cc; 80 cc is considered excessive and often will result in anemia. About 10% of women lose > 80 cc per period; about half of these women seek medical treatment. Note that one woman's menorrhagia can be another's eumenorrhea (*i.e.*, the symptom is quite subjective). However, patients who feel that their bleeding is excessive should be offered treatment regardless of "pad/tampon counts" and hemoglobin levels.

### ► *What is the differential diagnosis of excessive uterine bleeding?*

- Rule out pregnancy-related causes
- Rule out endometrial hyperplasia/neoplasia, particularly in:
  - peri- and post-menopausal patients,
  - chronic anovulation /polycystic ovarian syndrome (PCOS)
- Dysfunctional uterine bleeding (DUB):
  - anovulation,
  - lack of rhythmic or global vasoconstriction-modulated endometrial slough (classically seen in polycystic ovarian syndrome and perimenopausal menometrorrhagia)
- Endometrial lesions such as:
  - polyps,
  - submucosal fibroids (these can bleed directly and asynchronously)
  - intramural fibroids (can cause menorrhagia by stretching endometrial surface area)
  - adenomyosis (endometriosis within the myometrium; associated with heavy/painful periods and uterine pain/tenderness)
- Systemic causes: *e.g.*, coagulopathies, therapeutic anticoagulation, hypothyroidism
- Cervical source, such as:
  - endocervical polyp,
  - neoplasia,
  - ectropion (can cause post-coital bleeding)
- Presence of an intrauterine device (not progestin-releasing)

## ► *What investigations are recommended?*

- Complete blood count
- Pregnancy test
- In selected cases: thyroid-stimulating hormone; coagulation screening
- Endometrial biopsy (especially in patients at risk for endometrial hyperplasia (e.g., polycystic ovarian syndrome))
- Ultrasound to check for fibroids
- In selected cases: diagnostic hysteroscopy or hysterosonography (ultrasound with saline contrast in uterine cavity) to check for endometrial lesions
- Rarely, an MRI to check for adenomyosis

## ► *What are treatment options?*

### *Medical*

Medical options include the following:

- Oral contraceptive pills (cyclic, or continuous)
- Progestins (preferably continuous use)
- Non-steroidal anti-inflammatory drugs to be taken with menses
- Low-dose danazol (100 mg to 200 mg q.d.)
- Gonadotropin-releasing hormone agonist (GnRH) analogs (e.g. leuprolide, goserelin); add-back estrogen/progestin recommended if duration of treatment is longer than six months
- Tranexamic acid with menses

### *Surgical*

- Hysteroscopy to rule out endometrial lesions (polyps, submucosal fibroids). If present, it is best to resect them.
- Dilatation and Curettage: only to stop acute heavy bleeding. This is not a long term option



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- Endometrial ablation
- Hysterectomy
- Myomectomy (abdominal/laparoscopic intramural myomectomy). This is not recommended unless future fertility is desired. A hysterectomy is generally a better option
- Radiologic embolization of the uterine arteries for fibroid-associated menorrhagia

*Patients with pelvic pain (beyond dysmenorrhea), dyspareunia or adenomyosis, are not good candidates for EA.*

## ► *Who are candidates for EA?*

Candidates for EA are patients that:

- Have no desire for future fertility
- Are aged > 35 years; preferably > 40 years (higher failure rate in younger patients)
- Failed trial of medical therapy
- Are not pregnant
- Do not have pelvic inflammatory disease
- Have no atypical endometrial hyperplasia or neoplasia; not at high risk for this in future
- Are not expecting total amenorrhea (occurs in minority of patients)
- Do not have adenomyosis (higher failure rate)
- Do not have large fibroids (higher failure rate)

EA does not provide good contraception. There are many case reports of pregnancies that occur post EA. They are mostly nonviable. Therefore, this issue must be addressed, unless the patient/partner is already sterilized. Laparoscopic tubal sterilization, or in some centres, hysteroscopic sterilization (Essure) is often done at the time of EA.

Patients must understand that there is a small risk of endometrial cancer developing after EA, in potentially buried endometrium. The diagnosis can

be delayed because of late or absent post-menopausal bleeding. Also, it is more difficult to get good endometrial sampling. Ultrasounds may be helpful. A hysterectomy may be necessary when in doubt. Post-menopausal patients with previous EA who use hormone replacement therapy must take progestin along with estrogen because of possible residual endometrial nests.

*The levonorgestrel-releasing IUD, has emerged in the last few years as one of the main alternatives to endometrial ablation.*

### ► *Endometrial preparation?*

Rendering the endometrium thin facilitates the technique, enabling better visibility, shorter operating time, possibly lower risk of complications and, arguably, better success rates. This can best be accomplished by giving GNRH analog (e.g. leuprolide or goserelin, one dose about four to five weeks pre-operation). Other less expensive methods include low-dose danazol (200 mg to 400 mg q.d. for six or more weeks pre-operation), progestins, or OCPs that are withdrawn about seven to 10 days prior to EA. Alternatively, some gynecologists are comfortable without any pre-treatment.

### ► *What is the technique?*

EA is usually done in an OR, under general anesthesia or local, intracervical block with intravenous sedation. An operative hysteroscope with a video attachment is inserted into the uterus after cervical dilatation. A

non-conductive fluid medium, usually a hypotonic sugar solution, such as glycine, is used to distend the uterine cavity. An excellent image of the uterine cavity (“womb with a view”) is obtained; the patient, if awake, can choose to observe the procedure. The endometrium is then systematically resected and/or ablated, to a depth below the basal layer, into the myometrium, so that endometrial regeneration is unlikely. A combination of mono-polar electrosurgical loop, roller ball, or roller bar can be used. The technique has been adapted from urological prostate resection.

Most cases can be completed within 30 minutes. A definite learning curve exists; current OB/GYN residents are generally well-trained in the technique.

Patients tend to have minimal to mild post-op cramping for a few hours. A blood-tinged discharge can be expected for up to a few weeks. Patients are discharged the same day and are usually fully recovered by the following day.

The medical engineering industry has developed a number of non-hysteroscopic EA techniques, or global EA devices, utilizing energy modalities such as:

- heat (delivered to the endometrium via balloon, or as free hot water),
- laser,
- bipolar cautery,
- microwave,
- intrauterine cryotherapy, etc.

These methods have certain advantages, such as being technically easier to do; therefore the results are less operator dependent. Some techniques require no endometrial preparation; some have higher amenorrhea rates than the standard hysteroscopic technique. Some can be done in an outpatient setting. On the negative side, all these methods are significantly more expensive than the hysteroscopic technique. In most series, results and complication rates are similar to hysteroscopic EA.

## ► *Are there complications?*

- EA has a low risk of complications
- Approximately 1% to 2% of patients hemorrhage (rarely heavy), another 1% to 2% may develop an infection. There is less than 1% risk of uterine perforation. Perforations are usually managed via laparoscopy. Serious sequelae are very unlikely but bowel/bladder injuries have occurred.
- Less than 1% risk of excessive fluid absorption of distention medium. This can lead to hyponatremia, very rarely seizures, pulmonary edema.

## ► *What are the results?*

The results in patients who receive EA are:

- Approximately 25% develop amenorrhea, 60% hypomenorrhea (*i.e.*, about 85% patient satisfaction, with significant reduction in menstrual flow)
- Approximately 15% failure rate; *i.e.*, continued or recurrent menorrhagia or uterine pain leading to further treatment, usually hysterectomy; sometimes a second EA is helpful

Failures can occur months or years after the procedure. The failure rate is inversely related to the age of the patient. It is rather high (up to 40%) in women < 35 years-of-age and declines to approximately 5% in women > 45 years-of-age.

Failures are generally associated with adenomyosis. This is usually seen histologically in post EA hysterectomy specimens. One may question whether the adenomyosis was present prior to the EA, or did the EA lead to adenomyosis? Uterine pain can sometimes worsen after EA. Post EA uterine pain can also be due to hematometra, with cervical stenosis. This can be seen on ultrasound and treated, though not always successfully, with cervical dilatation with or without repeat EA.

Post EA lateral pelvic pain can infrequently be caused by hematosalpinx, if there was a previous tubal ligation. This can be treated by laparoscopic salpingectomy.

Intramural fibroids and large uteri are associated with higher failure rates. Conversely, submucosal fibroids that are hysteroscopically resectable can yield low failure rates.

In many series, about 10% to 15% of patients having EA will eventually have a hysterectomy.

## ► *Summary*

EA has become well established as a good surgical alternative to hysterectomy for excessive uterine bleeding in women who have completed childbearing and who have failed or declined medical treatment options. These women are willing to accept hypomenorrhea (as opposed to amenorrhea) and a relatively low failure rate, in exchange for the safety, convenience, lack of invasiveness and quicker recovery with little or no post-operative pain, compared to hysterectomy. Appropriate patient selection is paramount in order to achieve optimal success rates.

The levonorgestrel-releasing intrauterine system (LNG-IUS) IUD has emerged in the last few years as one of the main alternatives to endometrial ablation, particularly in younger women (< 35 to 40 years), women with uterine pain/tenderness and women who need contraception or who may wish to conceive later. The LNG-IUS IUD can also be a good alternative to hysterectomy in many cases.

Hysterectomy, especially less invasive approaches (vaginal or laparoscopic, when feasible) is still a good option for women with menorrhagia, particularly if there is a significant pain component, or if they are not good candidates for EA, or if EA fails. Patient satisfaction rates with hysterectomy are generally high.

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