Endometrial sampling for postmenopausal bleeding

Should we put the sampling tools away?

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Research question
Should we still be screening patients with postmenopausal bleeding using endometrial sampling now that endovaginal ultrasound (EVUS) is available?

Type of article and design
Meta-analysis by two reviewers.

Relevance to family physicians
Family physicians often see patients with postmenopausal bleeding. Researchers estimate that 3500 women in Canada and 36 100 women in the United States will be newly diagnosed with endometrial cancer this year.

Until endometrial biopsy became available and was tested in the 1980s, diagnosis was made by uterine dilation and curettage (D & C). Endometrial biopsy was found to be less accurate than D & C in 20% of cases if the lesion was focal and was associated with pain. The false-negative rate for endometrial biopsy was 2% to 6%.

Many patients started on hormone replacement therapy (HRT) will have abnormal bleeding patterns and must be screened for endometrial cancer. Endovaginal ultrasound, a newer method of screening these patients, causes less pain than biopsy and will often allow you to reassure patients without obtaining tissue by sampling or D & C. This article reviews the sensitivity of EVUS for screening these patients.

Overview of study and outcomes
The study reviewed the literature from 1966 to 1996. Only prospective studies that evaluated EVUS before endometrial tissue was obtained were selected independently and reviewed by two reviewers. The reviewers excluded studies that were retrospective, that pooled premenopausal and postmenopausal patients, and that measured endometrial tissue thickness after biopsy. Thirty-five studies met the inclusion criteria; 14 were non-English language.

Three outcomes were considered in the pooled data: cancer, benign endometrial abnormalities (atypical and complex hyperplasia and polyps), and normal. The HRT status of subjects was recorded. Cases with cervical disease were excluded from data review. The authors abstracted and recorded the number of true-positive, false-positive, true-negative, and false-negative cases using reported thickness measurements of 3 to 10 mm.

For each study reviewed, sensitivity, specificity, and exact 95% confidence intervals (CI) were calculated for all EVUS measurements. The authors calculated mean weighted pooled estimates of sensitivity and specificity for each threshold, for any endometrial disease, and for cancer alone.

Results
Endovaginal ultrasound was better at detecting cancer than it was at detecting polyps or hyperplasia. Mean endometrial thickness was 4 mm for women with normal histology, 10 mm for women with endometrial polyps, 14 mm for women with hyperplasia, and 20 mm for women with cancer. At a 5-mm threshold, 96% (95% CI, 94% to 98%) of women with cancer and 92% (95% CI, 90% to 93%) of women with endometrial disease had abnormal EVUS results. Endovaginal ultrasonography was equally accurate at identifying women with endometrial disease, regardless of HRT status.

For all thickness thresholds tested, specificity was better among women who did not use HRT. At 5-mm thickness, among women with normal histologic findings, 23% (95% CI, 21% to 25%) using HRT, but only 8% (95% CI, 6% to 10%) not using HRT, had abnormal EVUS results.

Positive and negative likelihood ratios and risk of endometrial abnormalities were calculated. At a 5-mm threshold, women with a 10% pretest probability of endometrial disease had a 1% risk...
of disease if EVUS results were normal and a 57% risk of disease if EVUS results were abnormal. Negative likelihood ratios (probability of disease after negative EVUS results) were approximately 0.1 regardless of use of HRT.

**Analysis of methodology**

There were no significant weaknesses in study methods or analysis. Because the authors do not provide rules for estimating pretest probabilities of endometrial disease, posttest probabilities have less practical meaning. Differences in results between the two reviewers were not discussed. We were not told the location of the studies, so the applicability to family practice offices is unclear. Women taking tamoxifen were excluded, so we do not know whether these results apply to them.

**Application to clinical practice**

Endovaginal ultrasound is a sensitive test for detecting endometrial disease. With a 5-mm cutoff, sensitivity for detecting endometrial disease and cancer was 92% and 96% respectively. This high sensitivity makes EVUS an excellent noninvasive test for determining which women with vaginal bleeding do not require biopsy or D & C. Since the false-negative rate of 8% is similar to that of endometrial biopsy, patients with abnormal EVUS results should be referred for D & C.

**Bottom line**

- Endovaginal ultrasound is noninvasive and can replace endometrial biopsy in your office.
- Postmenopausal patients with abnormal endometrial thickness (≥5 mm) should be referred for D & C.
- Endometrial biopsy has similar rates of false-negative results and can still be used if patients prefer, but abnormal histology would still require referral.
- Clinicians can use EVUS or endometrial biopsy interchangeably when patients present with postmenopausal bleeding.

**Points saillants**

- L’échographie endovaginale est une intervention non invasive et peut se substituer à la biopsie de l’endomètre dans votre cabinet.
- Les patientes postménopausiques qui présentent un épaissement anormal de l’endomètre (≥5 mm) devraient être aiguillées vers une intervention de curetage.
- La biopsie de l’endomètre comporte des taux de résultats faux-négatifs semblables et peut quand même être utilisée chez les femmes qui le préfèrent, mais une histologie anormale exigerait quand même un aiguillage.
- Les cliniciens peuvent avoir recours autant à l’échographie endovaginale qu’à la biopsie de l’endomètre lorsque les patientes consultent pour des saignements postménopausiques.

**References**


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