



MINIMALLY INVASIVE SURGERY



All about endometrial polyps: how to assess them, what they signify, their malignant potential, and what to do about them

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Endometrial polyps are a relatively common pathology, occurring in 24% to 41% of women who have abnormal bleeding, and in about 10% of asymptomatic women.^{1,2} Endometrial polyps may be associated with leiomyomas in women who have abnormal bleeding.¹⁻³

Polyps originate as focal hyperplasia of basal endometrium and contain variable amounts of glands, stroma, and blood vessels. Glandular epithelium has higher estrogen- and progesterone-receptor expression than surrounding endometrium, whereas the stromal component of a polyp has hormone receptors similar to endometrium. This suggests that a polyp represents focal hyperplasia that is more glandular than stromal.⁴

In this Update, I outline the basics of diagnosis and treatment and report on several recent investigations:

- a retrospective analysis from Italy that found that endometrial polyps are associated with advancing age and that any apparent association between polyps and diabetes, hypertension, or obesity is likely age-related
- a cross-sectional study from Norway that found that some asymptomatic polyps regress spontaneously, usually when their length is 10.7 mm or less
- three studies that explore the variables associated with premalignant and malignant polyps
- an investigation of the relationship between endometrial polyps and the background endometrium that found atypical hyperplasia in endometrium remote from the polyp in a significant percentage of women.

Age is the most important variable when assessing a patient for endometrial pathology

Nappi L, Indraccolo U, Di Spiezio Sardo A, et al. Are diabetes, hypertension, and obesity independent risk factors for endometrial polyps? J Minim Invasive Gynecol. 2009;16(2):157-162.

In this retrospective analysis of 353 women who underwent office hysteroscopy, Nappi and co-workers set out to ascertain whether endometrial polyps are associated with diabetes, hypertension, or obesity, independent of



age and menopausal status. They did find an association between age, menopause, hypertension, obesity, and the presence of endometrial polyps. However, after multivariable logistic regression, all variables *except age* lost statistical significance. The median age at which polyps were present was 53 years (range: 29–86 years).

Details of the trial

A total of 394 consecutive Caucasian women underwent hysteroscopy to assess abnormal uterine bleeding, infertility, cervical polyps, or abnormal sonographic patterns (e.g., postmenopausal endometrial thickness >5 mm, endometrial hyperechogenic spots). Of these women, 353 were included in the study, and demographic characteristics and data on

diabetes, hypertension, and menopausal status were collected. Anthropometric parameters were also analyzed. When a polyp was detected, it was removed via office hysteroscopy, and histologic analysis was performed.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

The prevalence of endometrial polyps is associated significantly with age. Other associations, such as hypertension, obesity, and diabetes, exist simply because the prevalence of these pathologies increases with age. Therefore, age is the most significant variable to consider when assessing a patient for endometrial polyps.

Small, asymptomatic uterine polyps may regress without treatment

Lieng M, Istre O, Sandvik L, Qvigstad E. Prevalence, 1-year regression rate, and clinical significance of asymptomatic endometrial polyps: cross-sectional study. J Minim Invasive Gynecol. 2009;16(4):465–471.

The treatment of asymptomatic polyps is controversial because their clinical consequences, malignant potential, and spontaneous regression rate are unknown. In this study, Lieng and colleagues prospectively estimated the prevalence and 1-year regression rate of incidentally diagnosed endometrial polyps in women 40 to 45 years old, as well as bleeding patterns and intensity.

They found polyps in 31 (12.1%) of 257 randomly selected women. At 1 year, the regression rate was 27%.

Details of the trial

At study inception, a standard 10-point visual analog scale was used to quantify each par-

ticipant's periodic bleeding, and a physical examination was performed. Transvaginal ultrasonography (US) and saline infusion sonography (SIS) were also performed. When a polyp was detected, researchers measured its length and used Doppler US to visualize the vessel feeding the polyp. An endometrial biopsy was also obtained.

The mean length of polyps was 14 mm (standard deviation [SD], 5.2 mm; 95% confidence interval [CI], 12.1–15.9; median, 13.4 mm; range, 6.7–28.7 mm), and the feeding vessel was identified for 22 of 31 polyps (71%). (For comparison, consider the findings of Clevenger and associates, who reported mean polyp diameters of 13.9 mm and 8.5 mm ($P = .064$), respectively, among women who had abnormal bleeding and women who did not.¹)

When researchers compared women who had polyps with those who had none, they found no significant differences in age, body mass index, blood pressure, gynec-



Among 31 women who had asymptomatic endometrial polyps, the regression rate at 1 year was 27%



logic symptoms, menopausal status, use of hormone therapy, or use of the levonorgestrel-releasing intrauterine device (Mirena). Women who had endometrial polyps scored significantly higher, however, than women who did not on the visual analog scale for periodic bleeding and on the Pictorial Blood Assessment Chart—even when women who had myomas were excluded from the analysis. Although mean hemoglobin levels were similar between groups, women who had polyps had a significantly lower mean ferritin level (25 µg/L vs 41 µg/L; $P = .05$).

Polyps that persisted were larger from the start

Polyps regressed spontaneously in eight women, six of whom had the feeding vessel visualized at the initial consultation. Polyps that persisted after 12 months were significantly larger (mean polyp length, 15.1 mm; SD, 5.3 mm; 95% CI, 12.7–17.5) at study inception than were those that regressed (mean polyp length, 10.7 mm; SD, 3.9 mm; 95% CI, 7.5–14.0). Polyps that persisted beyond 1 year became significantly longer during follow-up, increasing from a mean

length of 15.1 mm to 18.1 mm (SD, 7.9 mm; 95% CI, 0.7–5.3; $P = .01$).

Twenty of the 22 women who had persistent polyps underwent transcervical resection, one underwent laparoscopic supracervical hysterectomy, and one refused treatment. There were no complications.

Histology revealed that the polyps were benign in 16 women (80%), polypoid in two women (10%), and myomas in two women (10%). No atypical or malignant changes were observed in the polypectomy patients or among all participants.

A small, separate series (three patients) found all polyps to be 5 mm to 8 mm in length at detection, with a regression rate of 100% over several months.⁵

WHAT THIS EVIDENCE MEANS FOR PRACTICE

When an endometrial polyp 10.7 mm in length or shorter is detected incidentally in an asymptomatic, premenopausal woman, it is appropriate to follow it for regression, growth, or the development of symptoms rather than remove it immediately.

FAST TRACK

Menopausal status, abnormal uterine bleeding, diabetes, obesity, hypertension, and size larger than 1 cm were all associated with malignancy in women who had endometrial polyps

What variables signal a greater risk of malignancy?

Baiocchi G, Mancini N, Pazzaglia M, et al. Malignancy in endometrial polyps: a 12-year experience. *Am J Obstet Gynecol.* 2009;201(5):462.e1–e4.

Gregoriou O, Konidaris S, Vrachnis N, et al. Clinical parameters linked with malignancy in endometrial polyps. *Climacteric.* 2009;12(5):454–458.

Wang JH, Zhao J, Lin J. Opportunities and risk factors for premalignant and malignant transformation of endometrial polyps: management strategies. *J Minim Invasive Gynecol.* 2010;17(1):53–58.

These three studies explore various aspects of a fundamental challenge: how to discriminate between polyps likely to undergo malignant transformation and those that will not.

The answer: Look for menopausal status, abnormal uterine bleeding, diabetes, obesity, and hypertension. Polyps larger than 1 cm also appear more likely to become malignant.

Details of the trials

In a retrospective study involving 1,242 women who had endometrial polyps,



Diagnosis may be trickier than you think, but treatment is straightforward

When a patient complains of abnormal uterine bleeding, evaluation often begins with transvaginal ultrasonography (US). Among the challenges of assessing the endometrium using US is the unreliability of endometrial thickness as a predictor of pathology. For example, Breitkopf and colleagues found that transvaginal US missed intracavitary lesions in one of six premenopausal women who had abnormal bleeding and an endometrial stripe thinner than 5 mm, for a sensitivity of 74%.⁶

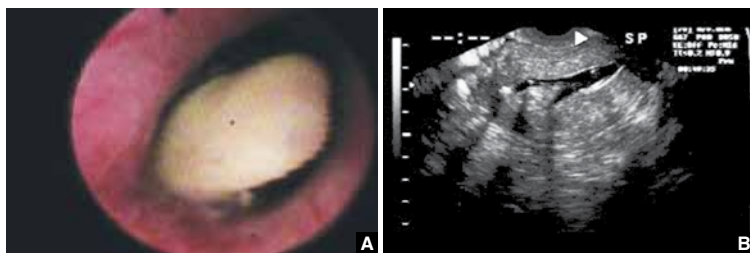
In a separate study, Marelo and colleagues used the combination of hysteroscopy and directed biopsy—the gold standard of diagnosis—to evaluate 212 postmenopausal women who had an endometrial thickness of 4 mm or less.⁷ (This parameter has been suggested as a cutoff for symptomatic postmenopausal women.⁸) Of these 212 women, 10% were found to have histologically confirmed intracavitary pathology (16 polyps and 4 submucous myomas).⁷ Among 13 symptomatic women in this study, three (23%) were found to have an endometrial polyp.⁷

These studies suggest that endometrial thickness alone should not be used to exclude benign endometrial pathology in symptomatic women, be they premenopausal or postmenopausal. No data back routine US to measure endometrial thickness in asymptomatic postmenopausal women.

Hysteroscopy and SIS are preferred

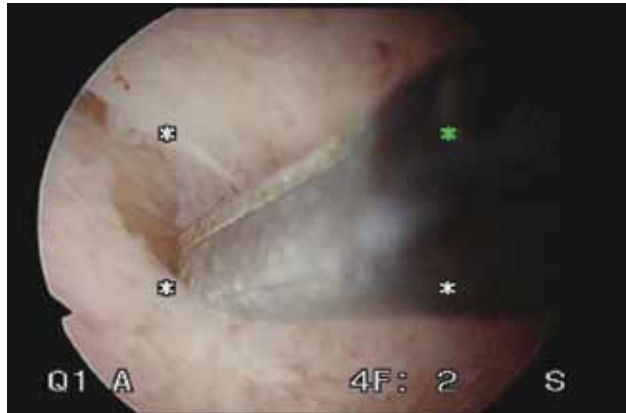
Both hysteroscopy and saline infusion sonography (SIS) have significantly better sensitivity and specificity in the diagnosis of intracavitary pathology than transvaginal US alone in women who have abnormal bleeding (FIGURE 1;

FIGURE 1 Imaging of polyps: Go beyond transvaginal ultrasonography for optimal visualization



A. Hysteroscopic view of an endometrial polyp. **B.** The view with saline-infusion sonography.

FIGURE 2 Segmental resection of a polyp



During hysteroscopic polypectomy, the polyp is resected in segments while it is still partially attached to the endometrial wall.

VIDEOS 1, 2, AND 3 related to this article in the OBG MANAGEMENT Video Library at obgmanagement.com).^{1,9} Hysteroscopy and SIS detect polyps with equal accuracy.¹⁰ However, hysteroscopy allows for removal of endometrial polyps and directed biopsy at the time of diagnosis.⁹

In symptomatic women, resect the polyp

Polypectomy improves abnormal bleeding, according to a systematic review by Nathani and associates.¹¹ All studies included in the review, which involved follow-up intervals between 2 and 52 months, reported such an improvement.¹¹

When it is performed in the office, polypectomy offers several advantages over its inpatient counterpart:

- higher cost-effectiveness
- greater convenience
- avoidance of general anesthesia.

In both settings, it can be performed using mechanical or bipolar electro-surgical instrumentation (VIDEO 4).¹²

Segmental resection of the polyp while it is partially attached to the uterine wall is the optimal removal technique for large polyps (FIGURE 2). A grasping forceps can then be used to remove the polyp completely (VIDEO 5). Instruments such as a basket and snare are helpful in removing the polyp effectively.¹³



Baiocchi and colleagues identified 95.2% of the polyps as benign, 1.3% as premalignant, and 3.5% as malignant. Four clinical variables were significantly associated with premalignant and malignant features:

- age
- menopausal status
- abnormal uterine bleeding
- hypertension.

In their series of 516 cases, Gregoriou and associates found 96.9% of polyps to be benign, 1.2% to be premalignant, and 1.9% to be malignant. Four variables were associated with premalignant and malignant features:

- age above 60 years
- menopausal status
- obesity
- diabetes.

And in a study involving 766 patients, Wang and colleagues found 96.2% of polyps to be benign, 3.26% to involve hyperplasia

with atypia, and 0.52% to be malignant. Among the variables associated with premalignant and malignant polyps were:

- polyp diameter larger than 1 cm
- menopausal status
- abnormal uterine bleeding.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

When endometrial polyps are identified, the following characteristics indicate an increased risk of malignancy: age above 60 years, menopausal status, abnormal uterine bleeding, obesity, hypertension, and diabetes. Polyps larger than 1 cm are also more likely to be premalignant or malignant in nature. When any of these conditions is present, polypectomy and histology are recommended.

FAST TRACK

Postmenopausal women who had polyps heavier than 1 g were 3.6 times more likely to have atypia than those who had lighter polyps

Is histologic analysis of a polyp sufficient risk assessment?

Rahimi S, Marani C, Renzi C, Natale ME, Giovannini P, Zeloni R. Endometrial polyps and the risk of atypical hyperplasia on biopsies of unremarkable endometrium: a study on 694 patients with benign endometrial polyps. *Int J Gynecol Pathol.* 2009;28(6):522-528.

This study involved 694 consecutive patients who had benign endometrial polyps. Investigators sought to clarify the relationship between polyps and the underlying endometrium—specifically, to determine whether a polyp is a “circumscribed pathology of the endometrium or a polypoid expression of endometrial hyperplasia.” In describing the rationale for the study, the authors observe that the association between polyps and premalignant and malignant changes remains unclear.

Participants underwent hysteroscopy

for removal of the polyps, at which time two biopsies of “unremarkable” endometrium, far from the base of the polyp, were also obtained.

Overall, endometrial hyperplasia without atypia was identified on hysteroscopically unremarkable endometrium in 18% of women, and atypia was identified in 7.3%. Among postmenopausal women, hyperplasia without atypia was identified in 21.6% of cases, atypia in 12%, and adenocarcinoma in 1.2%.

Multivariable analysis revealed that postmenopausal women who had polyps heavier than 1 g were 3.6 times more likely to have atypia (95% CI, 1.3–10.3). Among premenopausal women, the likelihood of atypia increased when the polyp weighed more than 0.4 g (odds ratio [OR], 3.5; 95% CI, 1.1–10.9) or the patient was older than 40 years (OR, 3.82; 95% CI, 1.1–13.2). ❏

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WHAT THIS EVIDENCE MEANS FOR PRACTICE

Endometrial lesions are not always evident at the time of hysteroscopy. Therefore, when evaluating an endometrial lesion such as a polyp, combine hysteroscopy with histopathologic assessment of the background endometrium (by means of a pipelle or curette), especially in women who have high-risk characteristics such as menopausal status or large polyps.

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VIDEO 1 Saline-infusion sonographic imaging of a polyp.



VIDEO 2 Hysteroscopic imaging of a polyp in a menopausal patient. A flexible 3-mm scope is used to assess an asymptomatic menopausal woman in whom an enlarged endometrial stripe was identified during earlier imaging.



VIDEO 3 Hysteroscopic imaging of a polyp and associated hyperplasia. A flexible 3-mm scope is used to evaluate a menopausal woman who has uterine bleeding, revealing a 2-cm polyp.



VIDEO 4 Office polypectomy. An 8-mm, apparently benign polyp is removed from a premenopausal woman using continuous-flow operative hysteroscopy in an office setting.



VIDEO 5 Removal of a large polyp. A large (2 cm x 2.5 cm) polyp is removed in pieces, with the polyp partially attached to the endometrial wall, from a premenopausal woman who has abnormal bleeding.

[More: Watch Dr. Brent Seibel perform OR-based hysteroscopic polypectomy](#)