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Menopause heute und morgen: Ultrasound Prediction of Endometrial Malignancy in Postmenopausal Bleeding

Tramontana A

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Menopause heute und morgen

Ultrasound Prediction of Endometrial Malignancy in Postmenopausal Bleeding

A. Tramontana

Imaging Techniques in the Management of Abnormal Vaginal Bleeding in Non-Pregnant Women before and after Menopause

Valentin L. Best Pract Res Clin Obstet Gynaecol 2014; 28: 637–54.

Abstract

Transvaginal ultrasound plays a pivotal role in the management of non-pregnant women with abnormal vaginal bleeding. No other imaging technique has a role in the triage of these women. In women with postmenopausal bleeding, ultrasound is used to categorise women as at low or high risk of endometrial cancer, and the result of the ultrasound examination is the basis for further management. In women with abnormal vaginal bleeding before the menopause, the role of ultrasound is less clear. This is because some common causes of abnormal vaginal bleeding before the menopause cannot be diagnosed with ultrasound, such as infection, dysfunctional bleeding, or problems with intrauterine contraceptive devices or contraceptive pills. Nonetheless, transvaginal ultrasound may also sometimes be helpful in women with abnormal vaginal bleeding before the menopause. In this chapter, I present ultrasound findings in women with endometrial cancer, endometrial polyps, endometrial hyperplasia, adenomyosis, uterine myomas, including submucous myomas and leiomyosarcoma, and describe ultrasound-based triage of women with postmenopausal bleeding.

Postmenopausal bleeding (PMB) accounts for about 5% of office gynecology visits and is the cardinal symptom of endometrial cancer [1]. Usually 75–90% of women with endometrial cancer present with abnormal uterine bleeding, but only 5–10% of all PMB episodes are caused by gynecological malignancy [2–5].

Interview with Univ. Prof. Dr. Lil Valentin, MD, PhD, FRCOG, Professor at the Obstetric, Gynecological and Prenatal Ultrasound Research Unit, Lund University, Sweden, Head of the Ultrasound Unit, Department of Obstetrics and Gynecology, Skåne University Hospital Malmö, Sweden, Member of European Committee for Medical Ultrasound Safety, Member of Clinical Standards Committee of International Society of Ultrasound in Obstetrics and Gynecology (ISUOG).

With ultrasound examination,
Is there a way to estimate the risk of endometrial pathology for PMB?
What are the cut-offs of endometrial measurements to verify malignant happenings?
And what difference makes hormone replacement therapy (HRT)?

There is very strong scientific evidence that endometrial thickness as measured with vaginal ultrasound 4 (4.4) mm or less on a longitudinal section through the uterus is a very strong sign of *no* endometrial pathology. There is also strong scientific evidence that it is not necessary to sample the endometrium in women with PMB and endometrial thickness 4 (4.4) mm or less. On the other hand, endometrial thickness as measured with vaginal ultrasound 5 (4.5) mm or more in women with PMB entails a high risk (25%) of endometrial cancer. Therefore, it is necessary to obtain a representative endometrial sample in these women. There is scientific evidence and international agreement that the 5 mm endometrial thickness cut-off to indicate endometrial pathology applies to all women with PMB, also to those using hormone replacement therapy.

In regard of ultrasound performance for the prediction of endometrial cancer,
What other sonographic features are of interest additionally to endometrium thickness?
Does power Doppler beneficial improve the estimated risk for malignancy?
And why is hydrosonography superior to ultrasound in respect of risk calculation of cancer?

In a woman with PMB and endometrial thickness 5 (4.5) mm or more, *heterogeneous endometrium* dramatically increases the likelihood of malignancy and so does richly vascularized endometrium on color Doppler. An irregular focal lesion in a fluid-filled uterine cavity (spontaneous fluid or hydrosonography, i.e. instillation of sterile saline into the uterine cavity) is another strong sign of endometrial malignancy in a woman with PMB and endometrial thickness 5 (4.5) mm or more: it increases the odds of malignancy 25 times. All women with PMB and endometrial thickness 5 mm (4.5 mm) or more as measured with transvaginal ultrasound should undergo hydrosonography or hysteroscopy to detect focally growing lesions in the uterine cavity. All focally growing lesions should be hysteroscopically removed under direct visual control, because 87% of focally growing lesions cannot be removed at all or can be only partially removed if one uses a blind endometrial sampling method, such as dilatation and curettage, Pipelle™, or something similar.

At low-risk for endometrial cancer,
What sonographic endometrial characteristics indicate a rather benign cause of PMB?
And what clinical regime should be followed after only one harmless PMB episode?

Endometrial thickness as measured with vaginal ultrasound 4 (4.4) mm or less on a longitudinal section through the uter-

us is a very strong sign of *no* endometrial pathology, and there is scientific evidence that the endometrium need not be sampled in these cases. However, the woman should be counselled to come back for re-assessment if she has another episode of bleeding. At re-bleeding management needs to be individualized: if the endometrium is still very thin (1–2 mm), there is probably no need to sample the endometrium; if the endometrium is around 4 mm or has increased in thickness, it is probably wise to sample. On the other hand, there is some evidence that if the endometrium is still 4 mm or thinner at the second episode of bleeding, there is minimal risk of endometrial cancer, and that therefore one can refrain from endometrial sampling also in these cases.

At high-risk for endometrial cancer,
What are possible findings highly suspect for endometrial malignancy with ultrasound?
How to proceed after the detection of a malignant lesion regarding reliable diagnosis?
And is there a role of routine dilation and curettage in standard management of PMB?

A thick endometrium with heterogeneous echogenicity and richly vascularized on color or power Doppler is a very strong sign of malignancy in women with PMB. It is absolutely necessary to obtain a representative endometrial sample in these cases. An irregular focal lesion in a fluid-filled uterine cavity at hydrosonography (or when there is spontaneous fluid in the uterine cavity) is another strong sign of endometrial malignancy. Dilation and curettage has no role as standard management of PMB. The standard management of PMB should include transvaginal ultrasound examination with measurement of endometrial thickness. If the endometrium is 4.4 mm or thinner the woman can be dismissed without any endometrial sample being taken, but she should be counselled to come back if she bleeds again (see above). If the endometrium is 5 (4.5) mm or thicker, then hydrosonography or office hysteroscopy should be performed to detect focal lesions. If there are focal lesions these should be hysteroscopically resected under direct visual control. Only if there are no focal lesions will a blind endometrial sampling technique yield a representative endometrial sample. However, if there is a strong suspicion of malignancy on unenhanced ultrasound (thick, heterogeneous and richly vascularized endometrium on ultrasound), it is appropriate to use an outpatient endometrial sampling device, for example Pipelle™, to obtain an endometrial sample without delay. If in such a case, where the likelihood of malignancy is very high, the endometrial sample comes back non-representative or benign, one should proceed with hysteroscopy to exclude that a malignant lesion was missed at the blind sampling.

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Correspondence to:
Dr. Allessandra Tramontana
Geburtshilflich-Gynäkologische Abteilung
Sozialmedizinisches Zentrum Ost – Donauspital
A-1120 Wien, Langobardenstraße 122
E-Mail: allessandra.tramontana@wienkav.at

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