Post-menopausal bleeding – an update

SKG RADIOLOGY

Abnormal bleeding is a common complaint affecting post-menopausal women, accounting for approximately 5% of all gynaecological outpatient presentations. Post-menopausal bleeding (PMB) is defined as spontaneous vaginal bleeding that occurs more than one year after the date of the last menstrual period. Breakthrough bleeding is defined as unscheduled uterine bleeding encountered in any woman using hormone replacement therapy (HRT).

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Many different causes of PMB have been identified. These include endometrial carcinoma (which accounts for 10-15% of cases), endometrial hyperplasia, endometrial polyp and submucosal fibroids. These are all readily identified on imaging. There are less common causes of PMB, which can arise from the uterus (such as adenomyosis, endometritis, uterine sarcoma), cervix (carcinoma, polyps, erosions, cervicitis), vagina (neoplasm, vaginitis) and ovary (oestrogen-secreting tumours). No structural cause is found in 50% of cases of PMB.

When a woman presents with PMB, history and a thorough physical examination are essential. Transvaginal ultrasound or endometrial sampling are recommended as first-line investigations.

Transvaginal ultrasound is usually performed as it is non-invasive and usually very well tolerated. The endometrium is well visualised by this modality. Endometrial double-layer thickness of less than 4mm in the post-menopausal woman is considered normal, with the risk of underlying endometrial carcinoma less than 1% if the woman is not on HRT, and less than 0.1% if she is on HRT. If endometrial thickness is 5mm or greater, the woman is considered to have a high risk of underlying abnormality, with further investigation recommended (Fig 1).

The morphology of the endometrium is also analysed on transvaginal ultrasound. If the endometrium remains regular and well-defined, there is less of a risk of neoplasm. Conversely, if the endometrial-myometrial border is poorly-defined and irregular, and there is thickening of the endometrium, neoplasm would be suspected.

The vascularity of the endometrium is also analysed on transvaginal ultrasound. This may be helpful in certain cases. An example of this is endometrial polyps, which tend to have a single feeding vessel (Fig 2).

If the cause remains unclear, one could proceed to saline infusion sonography, and thereafter hysteroscopy and directed endometrial biopsy.

In saline infusion sonography, saline is introduced into the endometrial cavity via a thin catheter, whilst performing a transvaginal ultrasound. This can be very helpful in achieving accurate pre-operative diagnosis. If a focal lesion is found, the gynaecologist can be directed into performing a hysteroscopy and thus, guided biopsy. This has been shown in recent studies to be more accurate than blind dilatation and curettage if there is a focal lesion.

With regard to Hormone Replacement Therapy (HRT), abnormal spotting is not uncommon on combined oestrogen and progesterone. The rate of endometrial hyperplasia/ carcinoma is low. Therefore, investigation is usually not warranted unless the bleeding persists beyond six months.

Tamoxifen is a drug used as adjuvant treatment of breast cancer. It has estrogenic side effects, which results in increased risk of endometrial hyperplasia/ carcinoma and endometrial polyps. If a woman is on Tamoxifen, the current guidelines recommend not performing surveillance transvaginal ultrasounds. This is because Tamoxifen's hormonal effects results in changes to the endometrium that can appear confusing on ultrasound. If a woman experiences abnormal bleeding on Tamoxifen, referral to a gynaecologist with view to endometrial sampling or hysteroscopy/dilatation and curettage is recommended.

What about aromatase inhibitors, the other major class of drugs used in the adjuvant treatment of breast cancer? As these are relatively new, their long-term effects on the endometrium are not known. At present, they are thought not to increase risk of endometrial cancer as they probably suppress the endometrium.

With regard to other imaging modalities, magnetic resonance imaging is only useful if the endometrium is not well visualised on transvaginal ultrasound in the investigation of PMB. This would not be required in the majority of cases. MRI is useful for staging of endometrial carcinoma pre-operatively.

The endometrium is not well seen on CT scanning, which is used only for staging of endometrial carcinoma if endometrial carcinoma is diagnosed.

In summary, post-menopausal bleeding is a common complaint. Endometrial carcinoma needs to be excluded in the first instance. Transvaginal ultrasound is a safe and well-tolerated first-line test to investigate this. The endometrium is usually well visualised this way. Endometrial thickness can help determine if there is an underlying structural cause for PMB. If the endometrium is thickened, a saline infusion sonogram may be useful in determining if there is a focal lesion present. This can help direct the gynaecologist when he or she is deciding whether to perform a blind dilatation and curettage or a hysteroscopically-directed biopsy.

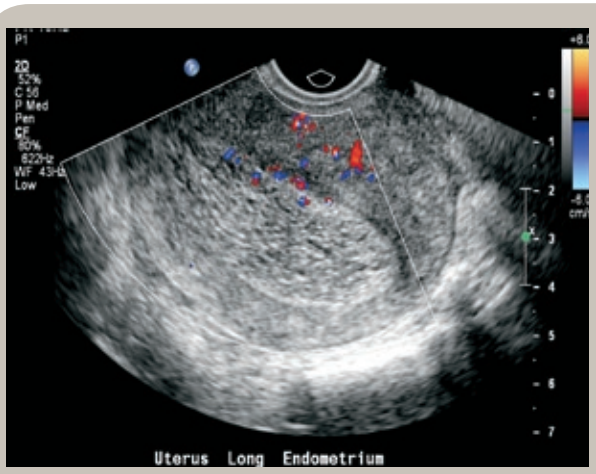

Fig 1: Transvaginal ultrasound image of a thickened endometrium in a woman with post-menopausal bleeding.

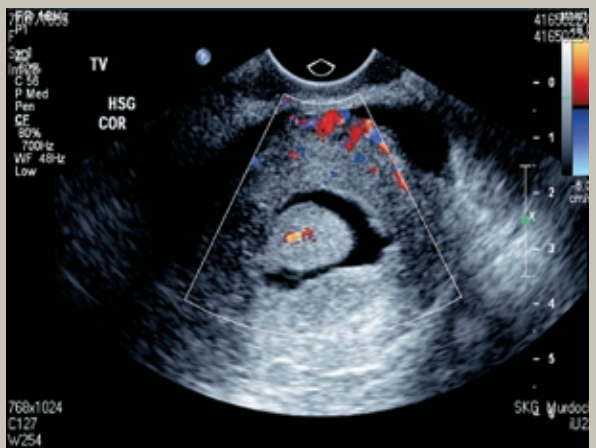

Fig 2: Image of an endometrial polyp taken during a saline infusion sonogram demonstrating a soft tissue structure connected to the endometrium via a thin stalk, supplied by a single blood vessel.