

## CLINICAL PRESENTATION AND RADIOLOGY QUIZ QUESTION

A 63 year old woman who is on anticoagulants for atrial fibrillation presents with abnormal uterine bleeding.

Which is the imaging examination of choice for the initial evaluation of abnormal postmenopausal uterine bleeding?

- (a) pelvic computed tomography (CT)
- (b) pelvic magnetic resonance imaging (MRI)
- (c) pelvic plain film examination
- (d) pelvic ultrasound (US)

<b>RADIOLOGY QUIZ QUESTION, ANSWER, AND EXPLANATION</b>
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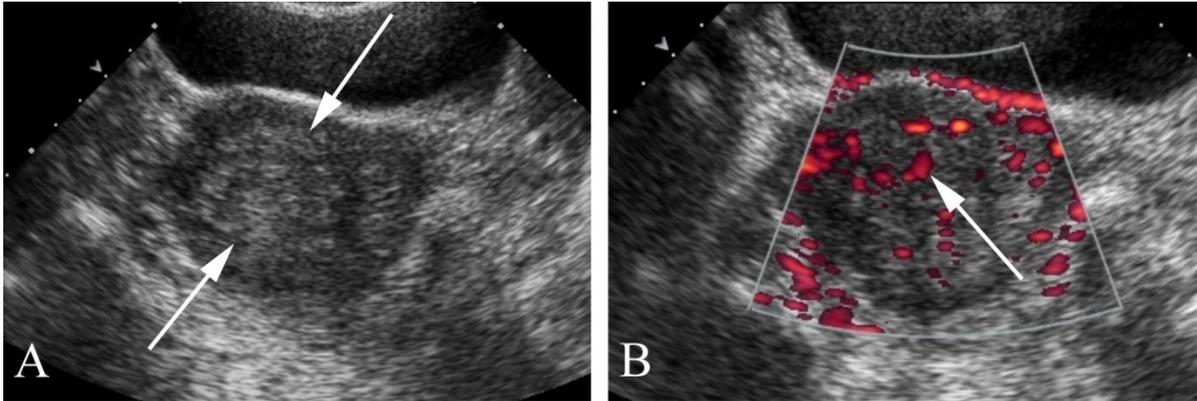
Answer: (d), pelvic ultrasound. Pelvic ultrasound (US) is the imaging examination of choice for the evaluation of both premenopausal and postmenopausal abnormal uterine bleeding.

Pelvic computed tomography (CT) may be used in evaluation of some female patients with pelvic pain, particularly when the pelvic ultrasound is not conclusive, but is not the imaging study of choice for the evaluation of abnormal uterine bleeding, and (a) is incorrect. Pelvic magnetic resonance imaging may be used in some cases for further evaluation of known pelvic masses (for example, for evaluation of endometriomas) and in evaluation of fertility problems, but is not the study of choice for the evaluation of abnormal uterine bleeding, and (b) is also incorrect. Pelvic plain film examination may be used in some instances to document calcification in a fibroid or to evaluate for a possible pelvic fracture following trauma, but is not the imaging examination of choice for evaluation of abnormal uterine bleeding, and therefore (c) is also incorrect.

Please note carefully the wording of this question, which is about the “imaging examination of choice” and note that many gynecologists will proceed directly to biopsy in these patients, with no imaging.

## IMAGING STUDY AND QUESTIONS

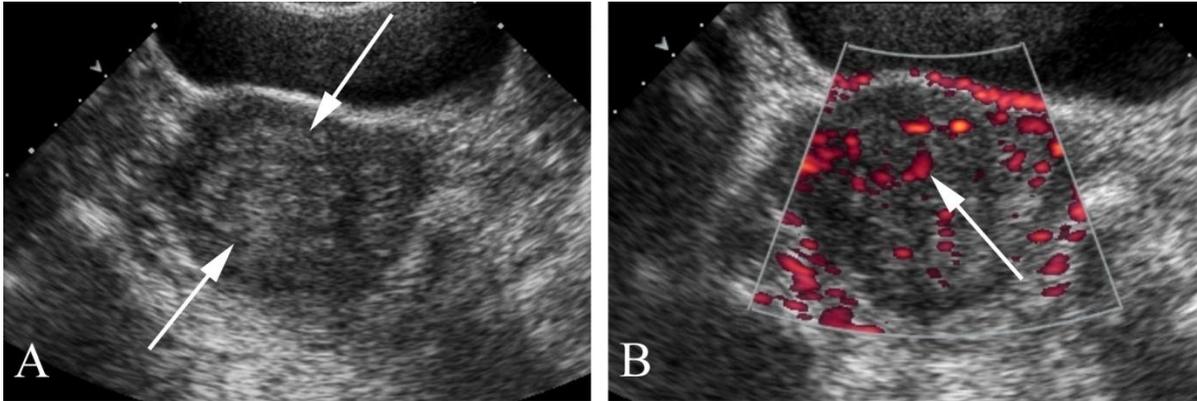
An imaging study was performed.



Imaging questions:

- 1) What type of study is this?
- 2) What is depicted by the arrows in A?
- 3) What is depicted by the arrow in B?
- 4) What is the abnormal imaging finding on this examination?
- 5) What is the differential diagnosis for this abnormal imaging finding?
- 6) What is the next step in patient management?

## IMAGING STUDY QUESTIONS AND ANSWERS



Imaging questions:

- 1) What type of study is this? Pelvic ultrasound.
- 2) What is depicted by the arrows in A? The borders of the patient's abnormally thick endometrial stripe.
- 3) What is depicted by the arrow in B? Vascular flow in the central portion of the abnormally thickened endometrial stripe.
- 4) What is the abnormal imaging finding on this examination? A markedly thickened, abnormal endometrial stripe.
- 5) What is the differential diagnosis for this abnormal imaging finding? Endometrial hyperplasia, endometrial polyp, and endometrial carcinoma.
- 6) What is the next step in patient management? Gynecologic referral with endometrial biopsy.

<b>PATIENT DISPOSITION, DIAGNOSIS, AND FOLLOW-UP</b>
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Further clinical history in the patient included morbid obesity, nulliparity, and the fact that her mother died at age 64 from uterine cancer.

Following the ultrasound study, the patient was referred to gynecology. A dilatation and curettage (D&C) was performed, yielding a diagnosis of endometrial carcinoma.

## SUMMARY

**Presenting symptom:** Causes of post-menopausal bleeding include endometrial atrophy, endometrial hyperplasia, endometrial polyps, hormonal effect, and endometrial carcinoma. Endometrial carcinoma accounts for about 10% of cases.

**Imaging work-up:** Post-menopausal bleeding may be evaluated with either pelvic ultrasound, endometrial biopsy, or both. Most abnormalities (listed above) that cause postmenopausal bleeding demonstrate a thickened endometrial stripe, which should normally measure no more than 5 mm. Such thickening indicates that an abnormality is present, but is not specific. However, marked thickening of the endometrial stripe (such as is seen in this patient) is more worrisome for carcinoma than are mild degrees of thickening, which are more likely to be secondary to hyperplasia.

**Establishing the diagnosis:** The diagnosis of endometrial carcinoma rests on biopsy of the endometrium. In diffuse processes (such as was present in this case) this may be accomplished without direct visualization, but focal processes may require hysteroscopic guided biopsy.

**Treatment:** Treatment for endometrial carcinoma is usually hysterectomy. Staging endometrial carcinoma relies heavily on evaluation of pelvic and paraaortic lymph nodes, which is typically done at the time of surgery. For this reason, hysterectomies done for patients suspected or known to have endometrial cancer are usually done by gynecologic oncologists, who have expertise in lymph node evaluation and dissection.

**Take-home message:** Ultrasound is the study of choice for evaluation of postmenopausal bleeding.

## FURTHER READING

Chen LM, Berek JS. Endometrial cancer: epidemiology, risk factors, clinical features, diagnosis, and screening. UpToDate, accessed 11/17/10.

Goodman A. The evaluation and management of uterine bleeding in postmenopausal women. UpToDate, accessed 12/23/08.

Plaxe SC, Mundt AJ. Endometrial cancer: pretreatment evaluation, staging, and posttreatment surveillance. UpToDate, accessed 11/19/10.

Renfrew, DL. Female Pelvis and Male Scrotum. Chapter 2 of *Symptom Based Radiology*, Symptom Based Radiology Publishing, Sturgeon Bay, WI, 2010, available for no charge at [www.symptombasedradiology.com](http://www.symptombasedradiology.com).

For additional quiz cases and information, please visit [www.symptombasedradiology.com](http://www.symptombasedradiology.com)