Benign disease of the uterus

Prof Andrea Rockall
Barts and the London NHS Trust, West Smithfield, London EC1A 7ED

Benign lesions of the uterus are frequently found on imaging the pelvis. It is important to recognize the characteristic appearances of these lesions, as well as the range of appearances, in order to differentiate these from malignant disease. In addition, benign lesions may be symptomatic and imaging may be relevant in treatment planning.

Leiomyomas (fibroids) are the most commonly found benign lesions of the uterus and may be found in up to 40% of pre-menopausal women. Typically, these have a low T2 signal intensity. However, there is a very wide range of appearances depending on whether the fibroid is cellular, fibrotic or calcified and whether it has undergone red degeneration or cystic degeneration. Submucosal fibroids may be difficult to distinguish from an endometrial polyp; pedunculated fibroids may be mistaken for an adnexal mass. Acute presentation of a pedunculated fibroid may occur if torsion develops. In patients being considered for fibroid embolisation, MRI is essential for correct selection of patients. The appearances of uterine sarcoma can overlap with those of benign leiomyomas, and this can be a diagnostic and clinical challenge.

Adenomyosis is commonly seen. The characteristic feature is widening of the uterine junctional zone with small pockets of high T2 signal intensity seen within the myometrium. Adenomyosis may be diffuse or may be focal, in which case the appearance may be similar to a fibroid. Adenomyosis is frequently present in patients with endometriosis and endometrial carcinoma.

Endometrial hyperplasia or the presence of a benign endometrial polyp may result in widening and abnormal signal intensity within the endometrium. The endometrial cavity may also be anatomically divided by a congenital septum or other anatomic variant. MRI can be extremely helpful in delineating the anatomic variations.

Inflammatory conditions of the endometrium include pyometria and endometritis. In the presence of a coil, actinomycosis may rarely develop and result in pelvic retroperitoneal fibrosis.

In this lecture, the MRI appearances of benign uterine disease will be illustrated, using an interactive case-based format.
