

Inside Story HIGHLIGHTS

From the Pacific Radiology Referrer Newsletter



Pacific Radiology

Gynaecological MRI, why do we need it?

With high resolution transvaginal ultrasound and modern multislice CT scanners, why do we need to image women with magnetic resonance scans?

Gynae MR is more of a problem-solving scan that can answer specific questions about pelvic anatomy and pathology. The trade-off with TV ultrasound is that with higher frequency transducers, you get more resolution but it comes at the cost of a smaller field of view. In other words, you get much better detail than transabdominal scanning, but you can't see the pelvis as a whole. With CT, the internal anatomy of the uterus and ovaries is not discernible, but a good overview of lymph nodes is possible, and CT is the modality of choice for looking at the peritoneum, liver and lungs for metastases.

However gynae MR can show you things that CT and ultrasound cannot. MR gives beautiful delineation of the endometrium and myometrium of the uterus. More importantly it shows the 'junctional zone' between them, and the stromal layer of the cervix. Breach of these layers of the uterus gives key staging information when assessing depth of invasion of gynae cancers. MR is also the most accurate imaging method of assessing local pelvic spread to adjacent organs and local pelvic nodes. Because of its multiplanar capability, MR can be tailored to the variable positions of the uterus and ovaries easily.

This capability can be crucial in deciding whether a solid pelvic mass is in fact myometrial, and therefore likely to be a fibroid, as opposed to a solid ovarian neoplasm. An important distinction to make!

MR is the most useful test to sort out complex congenital anomalies of the uterus because of its clear depiction of the endometrium and cervix.

While MR signal is generally not tissue-specific in discriminating benign from malignant tissue, MR is very good at demonstrating fat and blood products. An adnexal mass which contains fat is almost certainly a teratoma. An ovarian mass that contains blood products is likely to be a haemorrhagic follicle, or an endometrioma. Depending on the clinical setting, a woman who has a history of recurrent pelvic pain and a complex ovarian cyst that has not changed over several menstrual cycles could have a pelvic MR. If the cyst contains blood products, it is most likely an endometrioma.

So gynae MR has several specific indications, and can solve some specific diagnostic problems without subjecting patients to ionising radiation. It's got a big future in women's imaging.

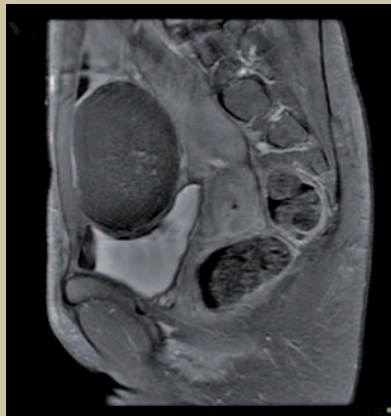
~ Mark Leadbitter



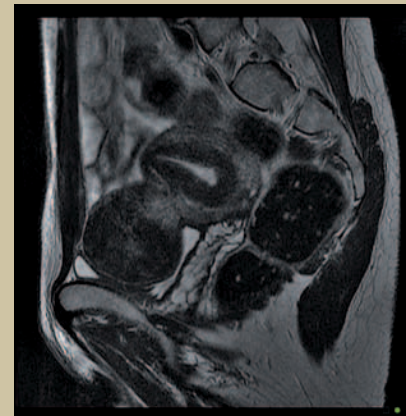
Mark Leadbitter



Dermoid cyst containing fat above the bladder



Dermoid cyst drops in signal on 'fatsat' sequence



Sag pelvis anterior uterine fibroid