

Functional MR imaging of the uterus

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Magnetic resonance imaging (MRI) is an established method for the evaluation of a variety of gynecological conditions and diseases. It is established as a problem-solving modality when ultrasound evaluation is equivocal, owing to its excellent tissue contrast reflecting pathology. MRI has additional advantages because it is non-invasive and more importantly free from ionizing radiation, being especially beneficial to evaluate reproductive aged women. Recent developments in MR techniques have enabled the functional assessment of the uterus. Cine MRI using rapid T2 sequences is used to evaluate the kinematic function of the uterus by demonstrating temporal morphological changes. Cine MR imaging enables us clear visualization of uterine contractility, which might be closely related with important uterine functions. Diffusion-weighted imaging (DWI) provides tissue contrast based on molecular diffusion phenomenon, and might be a promising tool in Gynecologic Oncology. Although some of these techniques are still relatively in their experimental stage, they may provide functional information when used in combination with standard imaging methods.