High Resolution Multiplanar MR Imaging for Pretreatment Staging of the Cervical and Endometrial cancer

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Disclosure of Commercial Interest

Neither I or my immediate family members have a financial relationship with a commercial organization that may have a direct or indirect interest in the content.
Introduction

• Clinical/surgical staging is standard of care for cervical and endometrial cancer. MRI with high resolution techniques is an important tool for accurate staging, presurgical assessment and treatment planning.

• Goals:
  – Present an optimized high resolution pelvic MRI protocol, implementing thin section double oblique T2-, 3D T2-sequences.
  – Show clinical impact of high resolution MRI on initial staging of cervical and endometrial cancer.
  – Discuss value of vaginal gel
HR MRI T2 Double Oblique Images in Endometrial Cancer

HR sagittal T2 weighted images show endometrial mass in the body of the uterus (red arrow), with uncertain myometrial invasion. The uterus is retroverted (white line) and the first oblique plane is drawn perpendicular to the uterine sagittal axis (white dashed line).

HR coronal T2 images show uterine deviation to the right (white line) and the second oblique plane is drawn perpendicular to the uterine coronal axis (white dashed line).
HR double oblique T2 images show intact junctional zone (arrows) and exclude myometrial invasion - stage IA, treatment with IUD (Mirena) was chosen for fertility preservation.

Sagittal dynamic T1 3D images show subendometrial enhancement (arrow) and smooth endometrium/myometrium interface.
3D T2 Multiplanar Imaging

3D multiplanar capability is used to assess relationship of the cervical tumor to the rectosigmoid
HR sagittal T2 images with vaginal gel show large cervical tumor with exophytic component extending inferiorly form the anterior lip (large arrow). Vaginal gel clearly delineates vaginal fornices excluding vaginal involvement (small arrows).

No parametrial invasion was seen on HR oblique T2 images (arrows).
Summary

- Multiplanar HR MRI improves definition and staging of primary tumors, enhances nodal characterization and improves treatment planning

- Double oblique HR T2 and 3D T2 sequences facilitate definition and staging of tumors through improved delineation of the primary tumor and superior T2 contrast

- Vaginal gel improves definition of the vaginal fornices and cervix assisting in assessment of vaginal and cervical involvement