

Descending perineum syndrome: Evaluation and classification using dynamic Magnetic Resonance Imaging.

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Object of study:

Dynamic MRI (DMRI) allows evaluation of all three compartments of the pelvic floor and is therefore considered the most powerful tool to assess pelvic floor descent. Based on DMRI-findings a reliable and reproducible scoring-system was developed, that allows to select the of the appropriate treatment.

Patients, material and method:

87 females and 8 men with descending perineum syndrome (DPS) were investigated by DMRI after proctologic investigation. After filling the rectum with 180-240 ml water-soluble ultrasound-jelly, pelvic floor descent at defecation was evaluated by MRI. The following sequences were used:

1. Coronal and sagittal T1w-Turbo-FLASH: TR: 11.0 ms; TE: 4.2 ms; TI: 15 ms; FOV: 380 mm; RFOV: 6/8; matrix: 80x256; slice-thickness: 10 mm.
2. Coronal and sagittal T2w-TRUEFISP: TR 10.2 ms; TE: 4.7 ms; FA 80°; FOV: 380 mm; RFOV: 6/8; matrix: 256x256 half-Fourier; slice-thickness: 10 mm.
3. Coronal and sagittal T2w-HASTE: TR: 1000 ms; TE: 128 ms; FOV: 380 mm; RFOV: 6/8; matrix 256x256; slice-thickness: 10 mm.

Beside the measurement of the pelvic floor descent concomitant rectoceles, cystoceles, vaginal prolapses, mucosal prolapses, enteroceles and Cul-de-Sac, as well as internal and external rectal prolapses and incontinence were evaluated.

Results:

1.) From all sequences used, the T2-weighted gradient-echo sequence delivered the images with the best diagnostic information, because acquisition-time was sufficiently short and the contrast between bladder, vaginal vault and rectum was superior to the other techniques. T1-weighted images on the other hand showed the lowest tissue-contrast. In addition, to achieve sufficiently short acquisition-times, spatial resolution had to be reduced significantly.

2.) DPS was scored into four disease-stages each requiring individual therapy:

Stage 1: Pelvic floor descent <2 cm without concomitant pathologies: conservative treatment.

Stage 2A: Pelvic floor descent >2 cm, vaginal prolapse and/or mucosal prolapse without rectocele: conservative treatment.

Stage 2B: Pelvic floor descent >2 cm, vaginal prolapse and/or mucosal prolapse with rectocele: surgical treatment.

Stage 3: Large rectocele, internal rectal prolapse and/or enterocele/Cul-de-Sac: surgical treatment.

Stage 4: External rectal prolapse, fecal incontinence: surgical repair.

Despite the high accuracy of MRI in detecting pathologies of the pelvic floor, MRI does not allow detection of mucosal lesions. In addition, 2 of 10 internal rectal prolapses detected by proctologic examination were missed at MRI.

Conclusions:

DMRI has proved to be superior to fluoroscopic methods in the evaluation of descending perineum syndrome and has the capability to replace these. Despite the accuracy in detecting vaginal prolapses, rectoceles and enteroceles, MRI cannot substitute proctologic investigation, because mucosal lesions and internal rectal prolapses are missed in about 20% of patients. However, it allows a reliable and reproducible classification of the disease that directly influences treatment.

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