

THE ROLE OF ULTRAFAST SEQUENCES MRI IN THE DIAGNOSTIC EVALUATION AND IN THE THERAPEUTIC OPTION IN FEMALE STRESS URINARY INCONTINENCE

Aims of Study

Different researches have been reported in Literature about the use of dynamic MRI imaging in the morphologic evaluation of pelvic floor in female patients (pts) affected by stress urinary incontinence (IUS). Aim of this study was to evaluate the role of MRI in the instrumental dynamic assessment of the pelvic floor dysfunction in pts suffering from IUS compared to the conventional urodynamic and radiological pre-operative work-up.

Methods

24 pts (mean age 59,2 years, range 48 to 65) affected by IUS were pre and post-operatively evaluated by means of physical examination, King's Health Questionnaire, short provocative pad test, digital videourodynamic, pelvic and perineal MRI performed by a Siemens Magnetom Vision Plus system with phased-array coil using T2 HASTE 90 sequences in sagittal, axial and coronal planes. All the sequences were assumed at rest and during Valsalva maneuver at 250 ml of bladder filling.

Results

For each patient 15 minutes of scanning time (2,5 minutes for each section) were necessary. A good correlation was assessed between MRI and clinical and urodynamic outcomes. MRI showed to be more accurate in the anatomical evaluation of the different pelvic segments (anterior, medium, posterior) involved in the genital prolapse. Moreover MRI allowed to find a link between symptoms' severity and trophism of levator ani muscle. Furthermore, MRI allowed us to better differentiate pts with simple urethral hypermobility (16 pts, 66%, group A) from those with genital prolapse (4pts, 16,7% I ICS stage, 4 pts, 16,7% II ICS stage) suggesting itself as the ideal instrumental tool to choose the proper surgical option: group A pts were submitted to TVT procedure while group B pts were treated by TVT combined with anterior colpoperineorrhaphy with a significant improvement of symptoms in both groups.

Conclusions

Fast speed sequences represents a non-invasive and rapid diagnostic procedure capable of offering a good dynamic morphologic evaluation of pts affected by stress urinary incontinence due to urethral hypermobility associated or not with genital prolapse. In addition this method allows ruling out any pelvic associated pathology, to better evaluate the trophism of levator ani muscle and discriminate simple urethral hypermobility from cases with cystocele associated suggesting the best therapeutic option.

References

1. Marc A. Hodroff et al. "Dynamic Magnetic Resonance Imaging of the female pelvis: the relationship with the pelvic organ prolapse quantification staging system" *The Journal of Urol* 2002;167: 1353-1355
2. Angelo E. Gousse "Dynamic Half Fourier acquisition Single Shot Turbo Spin-Echo Magnetic Resonance imaging for evaluating the female pelvis" *The Journal of Urol* 2000;164: 1606-1613
3. Comiter V. Craig et al. "Grading pelvic Prolapse and pelvic floor relaxation using dynamic magnetic resonance imaging" *Urology* 1999; 54: 454-457.