POSITIONAL PELVIC ORGAN PROLAPSE (POP) EVALUATION USING OPEN MAGNETIC RESONANCE IMAGING (MRO).

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Abstract: PD29-07

Introduction and Objectives

The pelvic floor is a complex 3D support structure for the pelvic organs, which depends on the interplay between the fascia, ligaments and the levator ani muscles. The most commonly used method for prolapse staging is the Pelvic Organ Prolapse Quantification (POP-Q), which is scored in the supine position during physical examination. A recognized limitation of this exam is the scoring of the pelvic organs in the supine position. The objective of this pilot study is to evaluate the change of prolapse using open standing MRI (MRO) comparing lying, sitting and standing images in women with POP and without (controls).

Methods

11 women 6 with POP and 5 controls ages 24-65 y/o had 12 MR0 images of the midline sagittal pelvic line in consecutive supine, sitting and standing positions with full and empty bladder. The lengths between the lowest point of the bladder to the pubococcygeal (PC) and pubopromontoreal (PP) lines were recorded in each image and compared. The ratio of bladder area under the PC and PP lines to the total bladder area were compared between the images. T-test was used for each subject in different positions and between the patients /controls.

Results

A significant elongation between PC line and the bladder lowest point was noted in subjects with cystocele compared supine and standing images ($p=0.03$) which was not significant in the controls ($p=0.07$). The bladder relative area under PC line was significantly increased between supine and standing positions only among subjects with cystocele ($p<0.01$) but not among the controls ($p>0.09$). While comparing the study and the control groups, this area

was extremely significantly larger among the study group in the standing position ($p<0.005$), less significant during the supine position ($p=0.015$) and not significant in sitting ($p=0.3$). By using the length between the PP line and the bladder lowest point, there was significantly elongation between supine-standing and sitting-standing images in both the subject and the control groups. This length was significantly longer among patients compared to controls only in supine but not in standing position.

Conclusions

This is the first study which aims to explore Open MR as a possibly advantageous imaging modality for pelvic organ prolapse. Promising changes were observed at different positions among subjects with cystocele, which were not observed in the control group.

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