

TABLE 2 : EAS DEFECTS IDENTIFIED AT TRANS-ANAL SONOGRAPHY COMPARED TO BODY COIL MRI

| | US | MRI |
|-----------------------------|----|-----|
| Number of EAS defects | 14 | 4 |
| Type of EAS defect | | |
| Full thickness | 11 | 4 |
| Partial thickness | 3 | 0 |
| Extent of EAS defect | | |
| 1 quadrant | 4 | 0 |
| 2 quadrants | 7 | 4 |
| 3 quadrants | 3 | 0 |
| Site of EAS defect | | |
| Superficial | 4 | 0 |
| Deep | 0 | 0 |
| Both | 10 | 4 |

Conclusion: Trans-anal ultrasound is superior to body coil MRI in identification and delineation of EAS disruption following obstetric injury. Body coil MRI allows comparable assessment of IAS injury and is superior for detection of recto vaginal fistulae.

56

| |
|--|
| SJ Kim, JH Choi, DK Kim, KS Lee |
| Department of Urology, Sungkyunkwan University School of Medicine, Seoul, Korea |
| THE SIGNIFICANCE OF AN OPEN BLADDER NECK IN THE EVALUATION OF THE FEMALE STRESS URINARY INCONTINENCE |

Aims of Study

Open bladder neck on resting cystourethrography was known to be a risk factor for stress urinary incontinence and Blaivas defined this finding as type III. There are 21% of women who have an open bladder neck at rest when the bladder is filled to maximum capacity. But not all of these women have stress urinary incontinence and its clinical significance was not well known. The purpose of this study was to determine the prevalence of an open bladder neck at rest in stress urinary incontinence women and to assess its significance.

Methods

We evaluated the presence of open bladder neck during a resting cystourethrography and related the findings to a type of stress urinary incontinence and to other factors. Cystourethrography was performed on 356 neurologically normal women in the age range 25 to 77 (average age 50 years), presented with stress urinary incontinence. After filling the bladder to the maximum capacity, the bladder neck was viewed in an anteroposterior and oblique position to see if it opened or closed. We classified the patients into two groups according to the presence of open bladder neck on resting cystourethrography. Two groups were compared with the results of the patient variables, including incontinence type; age; incontinence grade; duration of incontinence; associated presenting symptoms of frequency, urgency, urge incontinence; estrogen status; history of previous pelvic surgery, anti-incontinence surgery, or previous pelvic irradiation; gravidity; parity; the birth weight of baby; bladder neck descent on voiding cystourethrography. We determined type of incontinence by Valsalva leak point pressure (VLPP): 1) intrinsic sphincteric deficiency (ISD): VLPP < 60 cmH₂O, 2) equivocal: VLPP 60-90 cmH₂O, 3) anatomical incontinence (AI): VLPP > 90 cmH₂O. The data were subjected to the t-test, ANOVA, chi-square test, and the Wilcoxon rank sum test.

Results

At maximal bladder capacity, 192 (53.9%) of the 356 patients had open bladder neck at rest. One hundred ten women (30.9%) were ISD and 146 (41.0%) were AI. There were significant differences in between incontinence type, VCUG type, estrogen status, number of delivery, and age according to the presence of open bladder neck.

| Open bladder neck | VLPP (cmH ₂ O)* | | | Incontinence Grade* | | | Estrogen Status | | Age* | VCUG* Type | | | Parity* |
|-------------------|----------------------------|-------|-----|---------------------|-----|-----|-----------------|-----|----------|------------|-----|-----|---------|
| | <60 | 60-90 | 90< | I | II | III | + | - | Mean | I | IIa | IIb | Mean |
| Present | 65% | 52% | 47% | 44% | 60% | 68% | 47% | 62% | 51.3±9.5 | 52% | 48% | 76% | 2.7±9.5 |
| Absent | 35% | 48% | 53% | 56% | 40% | 32% | 53% | 38% | 48.3±9.5 | 48% | 52% | 24% | 2.0±0 |

p < 0.05 (t-test, chi-square test, Wilcoxon rank sum test, ANOVA)

There were significantly higher rate of ISD (37.5%) in women with open bladder neck than in women without open bladder neck (23.2%) (p=0.01) and average VLPP of women with open bladder neck (82.8 cmH₂O) was lower than that of women without open bladder neck (96.4 cmH₂O) (p=0.003). There were more open bladder neck at rest in ISD patients (65%) than in AI patients (47%) (p=0.01).

Conclusions

There was a more frequent open bladder neck on resting cystourethrography in lower VLPP, higher grades, older age, more delivery, greater bladder neck descent, and estrogen depleted patients. Open bladder neck on resting cystourethrography was not diagnostic of ISD. But it may be helpful in predicting ISD, especially in the equivocal zone where VLPP is 60-90cmH₂O.

57

| |
|--|
| R Tunn ¹ , M Rieprich ¹ , D Beyersdorff ² , O Kaufmann ³ , St Bettin ¹ , W Fischer ¹ |
| Depts. of Gyn. & Obstet. ¹ , Radiology ² and Pathology ³ , Charité, Humboldt-Universität zu Berlin, Germany |
| Diagnostic assessment of defects of the pubocervical fascia in urinary incontinence: Comparison of MR imaging and histological findings |

Aims of the study

Defects of the endopelvic fascia are involved in the pathogenesis of urinary incontinence (UI) but they can only be suspected on the basis of clinical and sonographic findings. Whereas lateral fascial defects can be diagnosed by MR imaging on the basis of changes in vaginal configuration (1) and the absence of the musculofascial connection between the levator muscle and the lateral vaginal wall, experience with the assessment of the pubocervical fascia (central fascial defect) is still lacking. **Null hypothesis:** Histologically proven defects of the pubocervical fascia cannot be objectified by MR imaging.

Methods

Standardized MR images (proton density-weighted) were obtained in 19 women (55.6 ± 8.9 years, range 42-75) with 2nd degree urinary incontinence (10 women with stress UI, 9 women with mixed [stress / urge] UI) confirmed by positive standing stress and pad weight tests and urodynamic examinations. Ten women had no prolapse and 9 a slight prolapse of the anterior vaginal wall (Aa and Ba, both stage 1), effacement of the vaginal rugae suggests a central fascial defect. None of the women had undergone previous incontinence or prolaps surgery. At MR imaging the pubocervical fascia was considered to be intact if on transverse planes in the suburethral area at the level of the middle urethra the hyperintense submucosa was surrounded by the lower intensity tunica muscularis of the vaginal wall. A blurred structure of the muscularis was assumed to indicate a moderate fascial defect and its absence a pronounced defect.

Tissue samples of the vaginal fascia were removed intraoperatively (during TVT insertion) at the level of the middle urethra. Following structure-specific staining actin, vascularization, and collagen III were determined quantitatively and the structure of actin and collagen I was assessed (average area analyzed: 4.7 mm², high-power field).

Results

A correlation between clinical findings and MR imaging or histology was not seen. When the pubocervical fascia is found to be intact at MR imaging, large amounts of clearly structured actin can be demonstrated (Table 2). When the pubocervical fascia is absent or difficult to demonstrate, actin is reduced and poorly structured, type III collagen is slight increased. The collagen status (types I and III) is not reflected on MR images. An increase in arterial vessels is seen when the fascia is difficult to depict by MR imaging.