

ABNORMAL URETHRAL MOTOR FUNCTION FOUND IN ALL FEMALE INCONTINENCE

Aims of Study

The aims of the present study were to investigate the intraurethral pressure during provocation with squeeze in a group of 205 consecutively investigated women with clinically manifest urinary incontinence, and to compare the findings with the results of investigations in 87 middle aged women (53-63 years) with naïve incontinence (n=59) and healthy controls (n=28).

Methods

Of the 205 women 138 (67%), 21 (10%) and 46 (22%) were found to have stress, urge and mixed incontinence, respectively. Excluded from the study were women (n=126/331) who had been operated for urinary incontinence or prolapse and in whom a neurogenic disorder could not be ruled out. The intraurethral pressure was measured continuously in the high pressure zone of the urethra at rest and during repeated short squeezes around the microtip transducer catheter. Cystometry and pressure-flow measurement with transurethral catheters was also performed. The urethral opening speed (1), expressed as the angle of urinary flow acceleration rate 0-10 ml/s, was calculated. Sixty-four of the 205 women were of the same age as the women with naïve incontinence and the healthy controls.

Results

We found that women with established incontinence significantly ($p < 0.001$) more often (66%) had a pressure fall at squeeze than women with naïve incontinence (35%) or asymptomatic, healthy women (25%). The acceleration of urinary flow and the maximal flow rate were significantly ($p < 0.01$) increased in patients with incontinence as compared to non-incontinent controls. The acceleration of flow (maximum=0 degrees) was expressed as mean \pm SEM 13 \pm 2.2, 20 \pm 2.8 and 32 \pm 4.9 degrees in the groups with incontinence, naïve incontinence and no incontinence, respectively. The maximal urinary flow rate was 23, 22 and 16 ml/s in the three groups, respectively. The women with manifest incontinence had a significantly lower P_{detmax} than those with naïve incontinence and healthy controls (26 \pm 1, 34 \pm 2 and 39 \pm 2 cm H₂O, respectively). No differences in any of these measures were seen when patients with a history of urgency and patients with stress incontinence were compared.

Conclusions

We conclude that women with all types of urinary incontinence have a primary neuromuscular disorder in the urethra, which presents itself as an overactive opening mechanism. The result is a urethral pressure fall instead of a pressure increase on provocation during the filling phase of the bladder, and during the bladder emptying there is a more efficient opening of the bladder outlet and a higher maximum urinary flow rate in incontinent than in normal women.

References

1. Eur Urol 2002; 42:583-589