

IS THERE AN ASSOCIATION BETWEEN BLADDER CAPACITY AND THE TYPE OF INCONTINENCE (OVERACTIVE BLADDER VERSUS STRESS INCONTINENCE)?

Hypothesis / aims of study

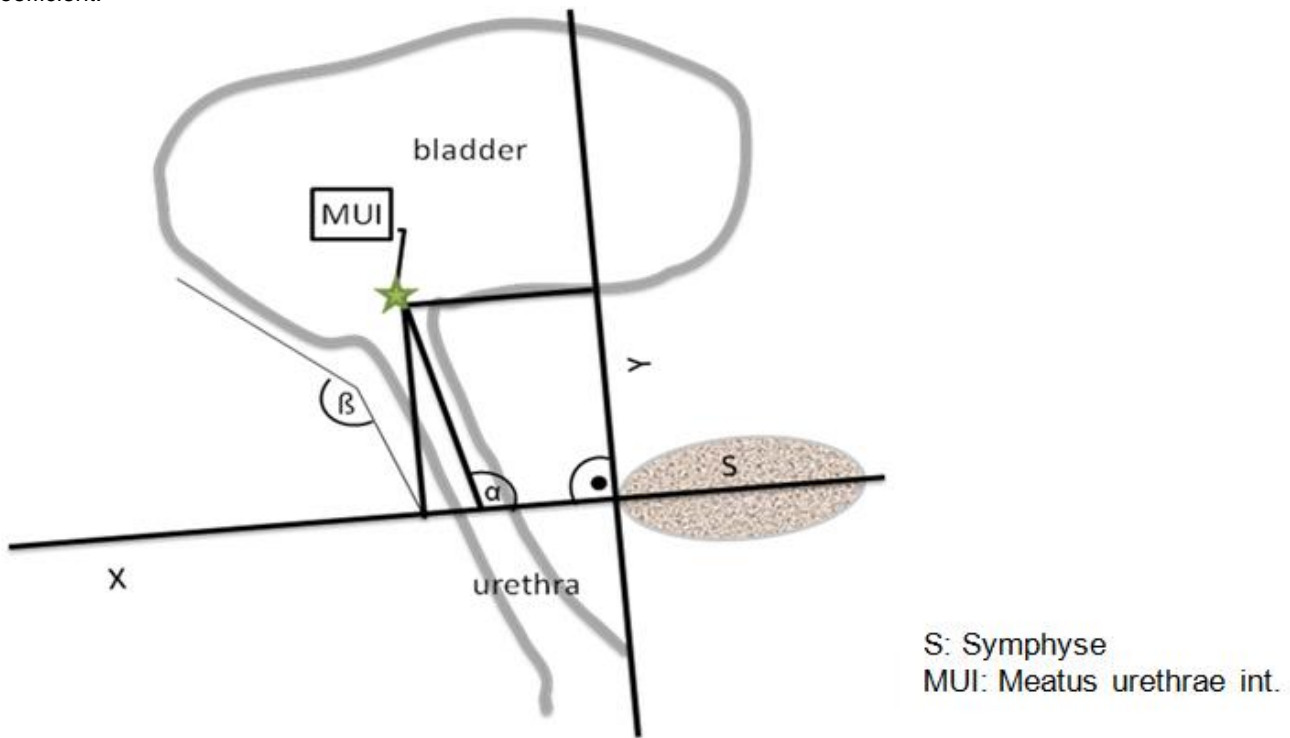
The aim of the present study was to find out whether there is an association between the bladder capacity (BC) and the type of incontinence and to explore possible mechanisms of pathophysiology. Patients suffering from stress urinary incontinence (SUI) should present larger bladder capacities than women with over-active bladder syndrom (OAB).

Study design, materials and methods

Data of 130 women (23-91 years-old) subdivided in 3 groups were analyzed: Group 1: SUI, Group 2: OAB and Group 3: mixed incontinence (SUI & OAB). All patients underwent urodynamic testing and a perineal ultrasound (PUS).

First, it was analyzed if there is a difference in BC between Groups 1, 2 and 3. PUS data were analyzed measuring angle α (pubourethral), angle β (retrovesical) and the position of the meatus urethrae internus (MUI) during rest and Valsalva. Using Kruskal-Wallis-test sonographic results were checked for significant differences between group 1, 2 and 3.

Finally we analyzed if there is a correlation between BC and the sonographic parameters using Pearson and Spearman's coefficient.



Results

Kruskal-Wallis-test showed a significantly larger BC for group 1 comparing to group 2 and 3 ($p < 0.001$).

Group	Mean BC (ml)	Group	p
1: SUI	326,58	1 vs. 2	< 0,001
2: OAB	232,83	2 vs. 3	< 0,001
3: OAB & SUI	233,97	1 vs. 3	< 0,001

The differences of the angle α at rest and during Valsalva were significantly larger in group 1 than in group 3. We found a correlation between α -differences and MUI-differences in rest and during Valsalva. The bigger the value for α -differences is, the more the position of MUI changes.

For BC and PUS data no correlation was found.

Interpretation of results

The closure mechanism of the bladder depends on different points: muscles and ligaments of pelvic floor, an elastic anterior vaginal wall and a sufficient tone of urethra. Having a large BC means higher pressure on certain structures of the continence system: levator ani muscles and endopelvic fascia may be worn out earlier. Normally, the closure pressure of the urethra is superior to the inner bladder pressure. A large BC causes higher inner bladder pressure and might thus exceed closure pressure of the urethra. Development of SUI might therefore be supported by a large BC.

Correlation between large α -differences and movement of position of MUI in rest and during Valsalva might indicate a hypermobile urethra as a pathophysiological connection between large BC and incidence of SUI.

Concluding message

High Volume of BC is rather a supportive factor for development of Stress Incontinence than for Over Active Bladder.

Disclosures

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Helsinki: Yes **Informed Consent:** No