

IS THERE A RELATIONSHIP BETWEEN BLADDER WALL THICKNESS AND QUALITY OF LIFE?

Hypothesis / aims of study

Bladder Wall Thickness(BWT) has been shown to be of use in the investigation of women with lower urinary tract symptoms(1). A bladder wall thickness of more than 5mm is strongly suggestive of detrusor overactivity. The aims of the study were:

To determine whether BWT has a significant impact on QoL

To determine whether BWT correlates with King's Health Questionnaire (KHQ) QoL

Study design, materials and methods

Women were recruited from a one-stop urodynamic clinic in a tertiary referral centre. All complained of troublesome urinary tract symptoms. Ethics committee approval was sought and written consent obtained from all participants. They filled in a three day electronic bladder diary and a validated disease-specific quality of life questionnaire (KHQ)(2). All women underwent full urodynamic assessment consisting of a history, examination, measurement of BWT, uroflowmetry and subtracted videocystometry. BWT was measured at the trigone, anterior wall and the dome, after voiding, using a Sonosite ultrasound machine with a 7.4MHz transvaginal probe. Urodynamics was carried out using a Laborie Aquarius 120 urodynamics machine. An electronic diary reader (Life-Tech Inc Texas, U.S.A.) was used to collate the bladder diary variables. Data were then analysed using SPSS v12

Results

We recruited 194 women. Of these 155 had adequate data available for analysis of bladder wall thickness, bladder diary variables and domains of the King's Health care Questionnaire.

The descriptive statistics are shown below. The mean values and their standard deviations for each domain of the questionnaire were calculated using an independent t-test. The results are shown in Table 1 below

Table1: Impact of BWT on QoL

Domain	Mean <5mm	>5mm	SD <5mm	>5mm	Sig
GHP	33.6	29.3	21.0	20.8	0.742
II score	66.7	63.4	26.8	30.0	0.118
RL score	43.9	34.7	29.7	30.0	0.811
PL score	46.9	44.8	33.7	29.4	0.226
SL score	26.9	21.5	29.9	25.2	0.081
PR score	41.3	29.7	38.2	33.3	0.100
E score	50.8	38.2	37.9	31.5	0.045
SE score	50.5	36.8	25.8	28.8	0.237
SM score	50.3	39.8	29.9	27.3	0.529

GHP=General Health Perceptions; II=Incontinence Impact; RL=Role Limitations; PL=Physical Limitations; SL=Social Limitations; PR= Personal Relations; E=Emotions; SE=sleep/Energy; SM= Severity Measures

In a subgroup analysis we analysed BWT in women with detrusor overactivity(DO), overactive bladder syndrome(OAB), urodynamic stress incontinence(USI) and mixed symptoms with quality of Life. Calculation with Pearson's Correlation coefficient was performed. The results are as shown in table 2 below:

Table 2: Correlation of BWT with KHQ QoL

	GHP	II score	RL score	PL score	SL score	PR score	E score	SE score	SM Score
DO	0.154	0.818	0.430	0.888	0.491	0.359	0.622	0.563	0.832
OAB	0.726	0.610	0.793	0.944	0.694	0.683	0.681	0.231	0.969
USI	0.710	0.955	0.528	0.198	0.594	0.945	0.168	0.381	0.522
Mixed	0.352	0.061	0.006	0.011	0.007	0.849	0.284	0.086	0.024

Interpretation of results

There is no relationship between BWT and QoL. When each individual subgroup of women was analysed there appeared to be a significant correlation in some of the domains of the KHQ in women with mixed lower urinary tract symptoms. The domains that appeared to correlate were those involved with physical activity. It is possible to speculate that women with mixed incontinence who have a higher BWT may have more episodes of unprovoked detrusor contractions and a higher propensity to leak.

Concluding message

Although BWT is a useful discriminatory tool between USI and DO, it has no relationship with QoL. There also appears to be no correlation between BWT and the KHQ. However in a small subgroup of women with mixed incontinence BWT does correlate with those domains of the KHQ QoL that relate to physical activities.

References

1. Ultrasound: a noninvasive screening test for detrusor instability. Br J Obstet Gynaecol.1996 Sep;103(9): 904-908
2. A new questionnaire to assess the quality of life of urinary incontinent women. Br. J Obstet Gynaecol.1997 Dec;104(12):1374-9

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