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IS THERE THE BEST METHOD FOR MEASUREMENT OF Q TIP ANGLE? -Q TIP ANGLE CHANGE IN RELATION TO POSITION AND BLADDER FILLING-

Hypothesis / aims of study
We evaluated the effect of the patient's position and bladder filling status on outcome of Q tip angle assessing urethral hypermobility.

Study design, materials and methods
All patients underwent Q tip angle and POP-Q staging measurement. Q tip angle was measured at supine position and 30 degree angle reclining position at empty bladder status and then repeated Q tip angle measurement at bladder filling status, usually 150-200mL. Q tip was placed at the urethrovesical junction. We defined urethral hypermobility using the definition of urethral angle with straining or coughing minus urethral angle at rest greater than 30 degrees. Hypermobility concordance rate was calculated as the ratio of hypermobility at straining and coughing to hypermobility at straining or coughing.

Results
All of 17 female patients (mean age 54 ± 13 years, 27-89) who complained of a stress urinary incontinence were assessed Q tip angle. The POP-Q stages of all patients were stage 1 or less. In bladder emptying status, the rate of urethral hypermobility was 41.2% (7/17) at supine position and 64.7% (11/17) at 30 degree angle reclining position. In bladder filling status, the rate of urethral hypermobility was 58.9% (10/17) at supine position and 64.7% (11/17) at 30 degree angle reclining position. The positive rate is significantly higher at reclining position than supine position (64.7% (22/34) vs. 50.0% (17/34), p=0.059). The positive rate is higher at bladder filling status than emptying status (61.8% (21/34) vs. 52.9% (18/34)). But the difference is not significant (p=0.317). Hypermobility concordance rate was 30.0% (3/10) at supine and bladder emptying, 69.2% (9/13) at reclining and bladder emptying, 69.2% (9/13) at supine and bladder filling, 83.3% (10/12) reclining and bladder filling status.

Interpretation of results
The outcome of Q tip angle measurement and the rate of urethral hypermobility were changed in relation to patient's position and bladder filling status. Reclining position shows increased Q tip angle measurement and positive urethral hypermobility. Hypermobility concordance rate is most high at reclining and bladder filling status.

Concluding message
So we can assume that Q tip angle measurement at reclining and bladder filling status might be a most practical method.

References
1. Correlation of Q-tip values and point Aa in stress-incontinent women.
2. Can urethral mobility be assessed using the pelvic organ prolapse quantification system? An analysis of the correlation between point Aa and Q-tip angle in varying stages of prolapse.
3. Effect of genital prolapse on assessment of bladder neck mobility by the Q-tip test.

Specify source of funding or grant	**Not**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**Yes**
Specify Name of Public Registry, Registration Number	**SoonChunHyang Univ.**
Is this a Randomised Controlled Trial (RCT)?	**Yes**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**SoonChunHyang Univ.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**