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IS INCREASED PROSTATIC URETHRAL ANGLE A CAUSE OF LOWER URINARY TRACT SYMPTOMS IN BENIGN PROSTATIC HYPERPLASIA/LOWER URINARY TRACT SYMPTOM IN MALE?

Hypothesis / aims of study

The prostatic urethra is a bent tube, and the clinical significance of the prostatic urethral angle (PUA) is recently reported. We investigated the effect of the increased PUA on International Prostate Symptom Score (IPSS) statistically in men with benign prostatic hyperplasia (BPH)/lower urinary tract symptom (LUTS).

Study design, materials and methods

Retrospective analysis was done in 270 men with BPH/LUTS from July, 2009 to June, 2011. Prostate volume, PUA, intraprostatic protrusion (IPP) were measured by transrectal ultrasonography (TRUS). IPSS was separately analyzed as storage (IPSS-ss) and voiding symptom score (IPSS-vs). Patients with diseases that might affect voiding were excluded. In order to minimize the effect of prostate size on voiding, patients with prostate size over 40 ml were excluded.

Results

The mean age was 62.0 ± 9.3. The mean prostate volume was 29.0 ± 5.5 (20-40) ml, median PUA and median IPP were 34 (12-52)° and 1.7 ± 0.8 (0-5.3) mm respectively. The mean IPSS, mean IPSS-ss and mean IPSS-vs were 19.0 ± 8.2, 7.3 ± 4.0 and 11.6 ± 5.5 respectively. The prostate volume had no statistical correlation with IPSS, IPSS-ss , and IPSS-vs . IPP had a statistically significant correlation with IPSS ($p < 0.001$), IPSS-ss ($p < 0.001$) and IPSS-vs ($p < 0.001$). PUA had no statistical correlation with IPSS and IPSS-ss. But PUA had a statistical correlation with IPSS-vs ($p = 0.047$). Comparing a higher PUA (≥ 34 °) to a lower PUA(< 34°), patients with a higher PUA had a higher IPSS ($p = 0.001$) and an higher IPSS-vs ($p = 0.001$). There was no significant difference in IPSS-ss, prostate volume and PSA between two groups (Table 1).

Interpretation of results

Table 1. Copmparison of factors according to the prostatic urethral angle

	Mean		
	PUA<34°	PUA≥34°	p value
Number	133	139	
Age (year)	62.3±8.6	62.6±10.4	0.775
Prostate-specific antigen (ng/mL)	1.4±1.1	1.4±1.3	0.831
Transrectal ultrasonography			
Total prostate volume (mL)	28.6±5.4	28.5±5.7	0.833
International Prostate Symptom Score			
Storage symptoms	6.7±3.6	7.5±3.6	0.061
Voiding symptoms	11.7±5.1	13.7±4.4	0.001
Total score	18.3±7.1	21.2±6.9	0.001
Quality of life index	3.6±0.9	3.8±0.8	0.091

Concluding message

The results of our study show that voiding symptom score is affected by the PUA. As the PUA increases, the patients' voiding symptom worsens. Further study may be needed.

References

1. Cho KS, Kim J, Choi YD, Kim JH, Hong SJ. The overlooked cause of benign prostatic hyperplasia: prostatic urethral angulation. Med Hypotheses. 2008;70:532-5.
2. Cho KS, Kim JH, Kim DJ, Choi YD, Kim JH, Hong SJ. Relationship between prostatic urethral angle and urinary flow rate: its implication in benign prostatic hyperplasia pathogenesis. Urology 2008;71:858-62.
3. Nose H, Foo KT, Lim KB, Yokoyama T, Ozawa H, Kumon H. Accuracy of two noninvasive methods of diagnosing bladder outlet obstruction using ultrasonography: intravesical prostatic protrusion and velocity-flow video urodynamics. Urology 2005;65:493-7.

Disclosures

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