

INFLUENCE OF URETHRAL KINKING ON OAB SYMPTOMS IN PATIENTS WITH SYMPTOMATIC ANTERIOR COMPARTMENT PROLAPSE

Hypothesis / aims of study

Pelvic organ prolapse (POP) is frequently associated with overactive bladder (OAB) with figures ranging from 16.0 to 77.2%, but the pathophysiology of this relationship is still unclear. Although prolapse of the anterior compartment is the type most associated to OAB, data regarding the influence of prolapse stage on OAB symptoms are very sparse (1). In addition, most studies only consider the most advanced point of anterior prolapse and do not assess its relationship with urethral position.

The aim of this study was to evaluate the influence of urethral kinking on OAB symptoms in patients with symptomatic anterior compartment prolapse. Our hypothesis was that women with urethral kinking will have urinary urgency more often than those without this anatomical finding.

Study design, materials and methods

This was a cross-sectional and multicentre study including all women with symptomatic anterior compartment prolapse that were evaluated in the specialized pelvic floor units of two different hospitals between May 2015 and January 2016.

Pelvic organ prolapse was described according to the the Pelvic Organ Quantification (POPQ) system. This examination was performed by two gynecologists blinded to symptoms reports. Urethral kinking was defined when point Aa was less than +3 and at least 1cm lower than point Ba. Obviously, when point Aa was +3, this indicated maximum descent and there was no possibility of urethral kinking, even if point Ba had greater values.

Symptoms of prolapse were identified with the validated Spanish version of the Pelvic Floor Distress Inventory short form (PFDI-20) (2). Urinary urgency was identified with the first question of the validated Spanish version of the Bladder Control Self-assessment Questionnaire (B-SAQ) (3).

Statistical analysis was done by proportion comparison (Chi-square and Fisher test) and multivariate analysis (multiple logistic regression model).

Results

We included 195 patients with symptomatic anterior compartment prolapse. Mean age was 63.5 years (SD:10.3; range:37-86) and mean body mass index (BMI) was 28.9 (SD:5.0; range:18.6-49.5). From the total, 142 (72.8%) reported urinary urgency in the B-SAQ questionnaire. Prolapse examination in the anterior compartment indicated POPQ stage ≥ 2 in all patients and urethral kinking in 78 (40%). Maximum urethral descent (point Aa +3) was identified in 55 (28.2%) women. Prolapse examination also identified POPQ stage ≥ 2 in 97 (49.7%) women in the apical compartment and in 55 (28.2%) in the posterior compartment.

The evaluation of the association between urethral kinking and OAB symptoms indicated that those patients with this anatomical finding were at greater risk of presenting urinary urgency (OR: 2.60; 95% CI: 1.13-5.98). This analysis was adjusted by age, BMI and prolapse in the others compartments (table 1). The differences between points Aa and Ba in patients with and without urethral kinking, and its relationship with urinary urgency are detailed in table 2. When the difference was greater than 3 cm, the percentage of women with urinary urgency was higher.

Table 1. Results of the multivariate analysis performed to associate urethral kinking with urinary urgency adjusted with age, BMI and prolapse in other compartments.

	n (%)	Urinary urgency n (%)	OR	95% CI
Age (years)	195		1.01	0.97 – 1.05
BMI	195		0.90	0.84 – 0.98
Urethral kinking				
no	117 (60.0)	74 (63.2)	1	
yes	78 (40.0)	68 (87.2)	2.60	1.13 – 5.98
Apical prolapse POPQ \geq stage 2				
no	98 (50.3)	56 (57.1)	1	
yes	97 (49.7)	86 (88.7)	3.41	1.48 – 7.85
Posterior prolapse POPQ \geq stage 2				
no	140 (71.8)	103 (73.6)	1	
yes	55 (28.2)	39 (70.9)	0.78	0.35 – 1.73

Table 2. Differences between points Aa and Ba in patients with and without urethral kinking and its relationship with urinary urgency.

	n	Urinary urgency	
		No (n,%)	Yes (n,%)
No differences or maximum urethral descent	116	43 (37.1)	73 (62.9)
1 cm difference	29	4 (13.8)	25 (86.2)
2 cm difference	23	3 (13.0)	20 (87.0)
3 cm difference	17	3 (17.6)	14 (82.4)
≥ 4 cm difference	10	0 (0.0)	10 (100.0)

Interpretation of results

Urethral kinking in patients with symptomatic anterior prolapse is independently associated with urinary urgency, controlling for prolapse in other compartments. This result provides new information that can help identify the pathophysiologic mechanism linking POP and OAB.

Concluding message

In patients with symptomatic anterior compartment prolapse, the presence of urethral kinking increases the risk of presenting OAB symptoms.

References

1. de Boer TA, Salvatore S, Cardozo L, Chapple C, Kelleher C, van Kerrebroeck P, Kirby MG, Koelbl H, Espuna-Pons M, Milsom I, Tubaro A, Wagg A, Vierhout ME. Pelvic organ prolapse and overactive bladder. *Neurourol Urodyn.* 2010;29(1):30-9
2. Sánchez-Sánchez B, Torres-Lacomba M, Yuste-Sánchez MJ, Navarro-Brazález B, Pacheco-da-Costa S, Gutiérrez-Ortega C, Zapico-Goñi Á. Cultural adaptation and validation of the Pelvic Floor Distress Inventory short form (PFDI-20) and Pelvic Floor Impact Questionnaire short form (PFIQ-7) Spanish versions. *Eur J Obstet Gynecol Reprod Biol.* 2013 Sep;170(1):281-5.
3. Espuña Pons M, Puig Clota M, Rebollo Alvarez P. Validation of the spanish version of the "Bladder Control Self-assessment Questionnaire" (B-SAQ). A new screening instrument for lower urinary tract dysfunction. *Actas Urol Esp.* 2006 Nov-Dec;30(10):1017-24

Disclosures

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