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Morales Solchaga G[1], Arlandis Guzmán S[2], Bonillo García M Á[2], Martínez Cuenca M E[2], García Fadrique G D[3], Benedicto Redón A[1]

1. *Hospital Universitario de la Ribera. Alzira (Spain),* ***2.*** *H.U.P. La Fe. Valencia (Spain),* ***3.*** *Hospital de Manises. (Spain)*

COULD OPENING VESICAL PRESSURE BE A USEFUL TEST TO DISCRIMINATE URETHRAL SPHINCTER DEFICIENCY?

Hypothesis / aims of study

Urethral sphincter deficiency (USD) is not well standardised. There are not diagnostic urodynamic or ultrasonographic parameters to define this condition. Opening vesical pressure (OVP) could reflect the pressure exerted to overcome urethral resistance during void, thus, we evaluated the capacity of opening vesical pressure to discriminate urethral sphincter deficiency in patients with urinary stress incontinence (USI).

Study design, materials and methods

Women with USI were prospectively recruited in two urodynamic departments between January 2010 and December 2011. They all had thorough complete, uro-gynaecological evaluation, including symptoms assessment using a specific questionnaire, voiding diary, physical examination, urine analysis and complete urodynamic testing. Pelvic organ prolapse was scored according to the ICS POP-Q system. The presence of either fixed or hypermobile urethra was assessed by the Q-tip test. Multichannel urodynamic studies included uroflowmetry, cystometry and pressure/flow study. Stress test during urodynamic evaluation determining valsalva leak point pressure was used to assess the severity of USI. All procedures and definitions conform to those of International Continence Society.

Women presenting with vaginal prolapsed ≥ 2 stage according to POP-Q system, urodynamic diagnosis of detrusor overactivity and previous pelvic floor surgery were excluded.

According with physical findings and urodynamics, women were divided into three groups: urodynamic stress incontinence with USD (group1), urodynamic stress incontinence related to urethral hypermobility (group 2), and normal urodynamic examination (group3). With the awareness that there is not a standardised definition of USD, we arbitrarirly used the following parameters: VLPP <60 cm H2O, and urethral mobility <30°. To define urethral hypermobility we used: VLPP >90 cm H2O, and Q-tip test >30°. OVP value was compared amongst the three groups with Student´s t test and ROC curves were used to assess diagnostic accuracy of OVP to discriminate USD. Software SPSS for windows v.17 was used.

Results

A total of 162 women were enrolled: 55 in group 1, 53 in group 2 and 54 group 3 . The three groups did not differ for demographics (age, body mass index), obstetric and surgical history. Te mean values form OVP were 19,07(3,27-34,86 95%CI), 33,11 (19,41-46,81 95%CI), and 35,30 (18,72-51,88 95%CI) respectively (fig 1). A p value <0,0001 was found when comparing USD group either hypermobility or control group (tables 1 and 2). Groups 2 and 3 did not significantly differ for OVP (table 3). Area under ROC curve was 0.907(fig 2), a cut point of 17,5 cm H_2O was found for UDS diagnosis (95% sensibility and 54% specificity).

TABLE 1: Comparison for OVP between groups 1 and 2 (mean value and 95% CI)

	Group 1	Group 2	p (t test)
Opening Vesical Pressure	19,07 (3,27-34,86)	33,11 (19,41-46,81)	<0,0001

TABLE 2: Comparison for OVP between groups 1 and 3 (mean value and 95% CI)

	Group 1	Group 3	p (t test)
Opening Vesical Pressure	19,07 (3,27-34,86)	35,30 (18,72-51,88)	<0,0001

TABLE 3: Comparison for OVP between groups 2 and 3 (mean value and 95% CI)

	Group 2	Group 3	p (t test)
Opening Vesical Pressure	33,11 (19,41-46,81)	35,30 (18,72-51,88)	<0,141

FIGURE 1: Opening vesical pressure

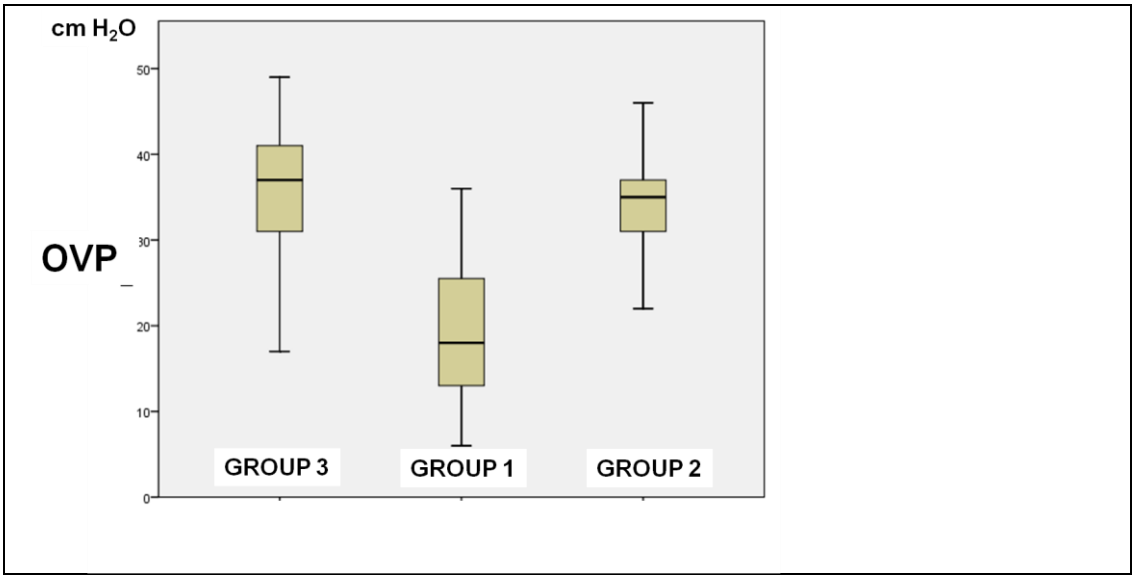
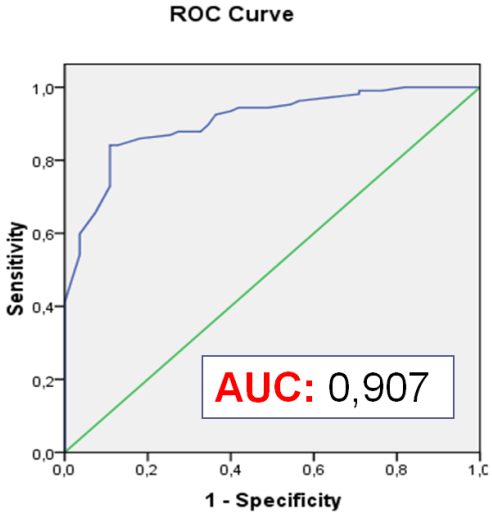


FIGURE 2: ROC curve for OVP accuracy for USD diagnosis



Interpretation of results

In the absence of reliable and standardised diagnostic parameters for USD, we suggest that OVP could discriminate women with USD. This measurement, obtainable from a routine urodynamic examination during the bladder voiding phase, should reflect the pressure exerted by the bladder to overcome urethral resistance and could be a indirect method to evaluate rhabdosphincter function.

Our data show that opening vesical pressure resulted significantly lower in patients with USD in comparison with either continent controls and incontinence related to urethral hypermobility. We propound a cut point of 17,5 cm H_2O for USD diagnosis.

Concluding message

OVP is a promising parameter to detect USD and could have great clinical importance for the diagnosis and treatment outcome of women with USD.

Disclosures

Funding: No source of funding or grant. No conflict of interest **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** The study is based on urodynamics procedures and physical examination in women with urinary stress incontinence. There is not any intervention in patients and we only have obtained and compared urodynamic´s parameters. **Helsinki:** Yes **Informed Consent:** Yes