47

Pajoncini C, Costantini E, Mearini L, Lombi R, Guercini F, Porena M
Department of Urology - Perugia University

DOES POSITION MODIFY THE VALSALVA LEAK POINT PRESSURE?

Aims

The Valsalva Leak Point pressure (VLPP) has emerged as an important diagnostic test for evaluating women with urinary incontinence and in helping to distinguish between genuine stress incontinence, which is caused by urethral hypermobility, and intrinsic sphincter deficiency (ISD). ISD, classified as a different form of stress urinary incontinence by McGuire in 1976, may be due to poor or pathological sphincter mechanism. ISD, as defined by the U.S. Department of Health and Human Service Clinical Practice Guidelines, is the inability of the urethral sphincter to coapt and generate enough resistance to retain urine in the bladder, particularly during stress maneuvers.

VLPP, i.e. the lowest total intravesical pressure, at a known bladder volume, at which leakage occurs during the deliberate increase in abdominal pressure, should estimate the severity of incontinence and be a reliable, reproducible means of testing.

As a test, however, the VLPP is in constant evolution and has not yet been fully standardized. Consequently, several technical factors that may influence the performance of the VLPP need to be recognized. These include the catheter size, alternative catheter position, cough-induced versus Valsalva-induced leaking, bladder volume, use of fluoroscopy and the position of the patient.

The VLPP has been measured with the patient in the upright position under fluoroscopy and in the sitting or gynaecological positions, as dictated by patient comfort and by the equipment used when VLPP is determined during cystometry. Little information is available on how position influences results. Do results overlap? Can the same cut-offs be adopted? This study reports the results of the VLPP when the upright and gynaecological positions were used.

Methods

42 consecutive patients with SUI underwent a full urogynaecological work up which included case history, clinical examination with assessment of pelvic floor dysfunction, supine stress test, multichannel cystometry with Pressure/Flow study, VLPP, Urethral Pressure Profile and endocavitary ultrasound of the lower urinary tract. During the urodynamic examination the VLPP was repeated in each patient in the gynecological position and then in the upright position, with 200cc bladder volume; an 8 Fr catheter was used. A remote control device recorded the bladder pressure exactly when urine appeared at the external urinary meatus. If there was no urinary leakage the VLPP was considered negative and the maximum bladder pressure achieved during the Valsalva maneuver was registered. A cut-off of ≤ 60 cm H2O was chosen to diagnose ISD in the upright position, as suggested by McGuire.

Results

23 patients had a positive VLPP standing (median 60 cm H2O; range 10-141) and 16 of the 23 also had a positive VLPP in gynaecological position (%) (median 73 cm H2O; range 39-131). In 13/17 patients the VLPP standing was lower than in the gynaecological position. 7 patients had a negative VLPP in the gynaecological position and 3 of the 7 had a VLPP standing ≤ 60 cm H2O.

19 patients had a negative VLPP standing (median 99 cm H2O; range 69-147) and 17 of the 19 patients also had a negative VLPP in the gynaecological position(%) (median 116 cm H2O; range 60-148). In 16 patients the pressure when standing was higher than in the gynaecological position.

Conclusions

In McGuire's first classification the VLPP was measured under fluoroscopy with the patient upright. As the test has become more widespread the demand has grown for a simpler procedure, which is suitable for use during cystometry. In fact the VLPP is easier to perform in the gynaecological position, but the question arises of how to interpret the results in the light of the different technique. The results of this study show:

1) The value of the VLPP when standing is generally lower than the value in the gynaecological position;
2) The median pressure difference of approximately 15-20 cmH2O is due to the weight of the bowel and intestines which is more manifest when standing even under straining;
3) A negative VLPP when standing seems to be higher in value, because in the gynaecological position reaching high pressure under abdominal straining is more difficult.
4) The 60 cm H2O cut-off used by McGuire in the standing position could be raised by 15-20 cmH20 when the VLPP is determined in the gynaecological position. Therefore a value of 75-80 cmH2O in the gynaecological position might be appropriate for identifying the patient with Intrinsic Sphincter Deficiency.