

VALSALVA LEAK POINT PRESSURE: THE IMPACT OF BODY POSITION AND METHOD OF ABDOMINAL PRESSURE RECORDING

Aims of Study

Valsalva leak point pressure (VLPP) is a urodynamic technique proposed by McGuire (1) to assess the urethral sphincter function, by measuring its resistance to increasing abdominal pressure. A recent international survey showed that almost 80% of urologists and gynaecologists perform this test prior to surgical procedures (2). Despite its great success in clinical practice, this test has not been standardized: thus, VLPP assessment is obtained with different methods (2). In particular, the patient position (supine, sitting, standing) and the method of abdominal pressure recording (via trans-urethral or rectal catheter) can affect the results of the test, thus possibly changing the final diagnosis. The aim of our study was to compare the results of the test obtained with different patient positions and with intra-vesical or intra-rectal pressure recording.

Methods

28 consecutive female patients with urodynamic stress incontinence and moderate pelvic organ prolapse (stage 1-2 following ICS classification) were evaluated. Mean age was 65,1±5,9 years. VLPP evaluation was performed in four different conditions: 1) with the patient in supine position, dwelling intra-vesical catheter (registration of Pves); 2) with the patient in supine position, dwelling rectal catheter without intra-vesical catheter (registration of Pabd); 3) with the patient in standing position, dwelling intra-vesical catheter (registration of Pves); 4) with the patient in standing position, dwelling rectal catheter without intra-vesical catheter (registration of Pabd). The registration of Pves was performed via a double lumen 6F catheter; the registration of Pabd was performed via a double lumen 14F rectal balloon. Zeroing of pressures was performed before connection of the tubes to the catheter/balloon (atmospheric pressure), with the open end of the tubes at the level of the transducers (transducers at the level of pubic symphysis). Bladder was filled with 200 ml of isotonic saline solution; patients were asked to perform Valsalva manoeuvre, without any voluntary relaxation of pelvic floor muscles. Urine leakage was assessed by a nurse observing the patient, while another operator was registering bladder/abdominal pressure. The minimum pressure required to obtain urine leakage was considered the VLPP. VLPP obtained in the four conditions described were observed and statistically compared. The number of patients who did not show any urine leakage (negative VLPP) in any condition was registered; the number of negative VLPP in the different conditions was statistically compared. The number of patients with VLPP <60 cmH₂O was also registered in each condition.

Results

Results are reported in table.

	VLPP (cmH ₂ O) Mean (SD)	Negative VLPP Number	VLPP<60 cmH ₂ O Number
Supine/catheter	57,6 (24,4)	10	9
Supine/no catheter	48,6 (18,3)	9	9
Standing/catheter	55,5 (24,8)	11	9
Standing/no catheter	46,6 (16,3)	4	11

The only statistically significant difference regarded the lower number of negative VLPP observed in standing position without intra-vesical catheter (p=0,02). Only 2/28 patient (7%) with VLPP >60 cmH₂O in the other conditions showed VLPP <60 cmH₂O in standing position without intra-vesical catheter.

Conclusions

According to our data, results of VLPP measurement does not seem to be greatly influenced by the body position or by the presence/absence of intra-vesical catheter. In particular, only in 7% of patients the VLPP related diagnosis changed in one condition. Standing position without intra-vesical catheter seem to guarantee a lower ratio of negative VLPP. According to our data, McGuire original cut-off seem to be reliable in all conditions examined.

References

1. McGuire EJ, Fitzpatrick CC, Wan J et al: Clinical assessment of urethral sphincter function. J Urol. 1993;150(5 Pt 1):1452-4.
2. Pesce F, Contalbi GF, Celia A et al: Current trends in ALPP studies: results of an international survey. Urodynamicia 2001; 11: 153-155.