

STANDARDISATION OF THE URINARY DETECTION METHODS BY THIRD CHANNEL OR VISION TO DETERMINE THE STRESS LEAK POINT PRESSURES IN WOMEN WITH STRESS URINARY INCONTINENCE

Hypothesis / aims of study

The chief pitfall in determination of leak point pressure is that the actual pressure to record has not been standardized.¹ Several modifications of the urinary leakage detection methods have been introduced to guard against these pitfalls.

To assess and compare the accuracy of the urinary detection methods by third channel or vision to determine the stress leak point pressures (LPPs) (cough LPP and valsalva LPP) in supine and erect positions in women with stress urinary incontinence (SUI).

Study design, materials and methods

Fifty two patients presenting SUI underwent video-urodynamic studies with cough and valsalva LPP measurements in supine and 80° erect position. Every measurements of LPP were repeated two times with same provocative method of cough or valsalva. At the first measurement, the instant of urethral leak were detected by the abrupt elevation of urethral pressure (P_{ura}; checked through the third channel of the catheter), which means the urethral leak, and at the second one by vision (Fig. 1). At the first measurement, we defined the peak value of first measurements, which is usually different to the value detected by third channel (Fig. 1). The position of urethral port was placed to the distal part of external sphincter by video-image. Statistical significance was performed using paired t test ($\alpha < 0.05$).

Results

At cough provocation on supine/ erect position, the values by third channel were significantly lower than the peak value of first measurements, which were not different to the values by vision. And the values by vision were significantly higher than those by third channel. At valsalva provocation on supine/ erect position, the values by vision were significantly higher than those by third channel (Fig.2). All measurements showed significant reliabilities ($p < 0.001$).

Interpretation of results

The provocations such as cough and valsalva last only for a very short time. So the observations by vision contain the potential errors, which is caused by delayed stopping the abdominal strain after vision. At cough, the peak pressures are in part dependent on the patients' usual abdominal muscle strength, and at valsalva, on the time difference between the instant of leak and patients' actual stop of abdominal strain after being asked to stop.

Concluding message

The urinary detection methods by third channel of urodynamic catheter is recommended to determine the stress LPPs accurately in supine and erect position in women with SUI.

References

1. <http://www.campbellsurology.com/content/default.cfm> (Page 2006; Controversies/Pitfalls: Pressure to Be Recorded)

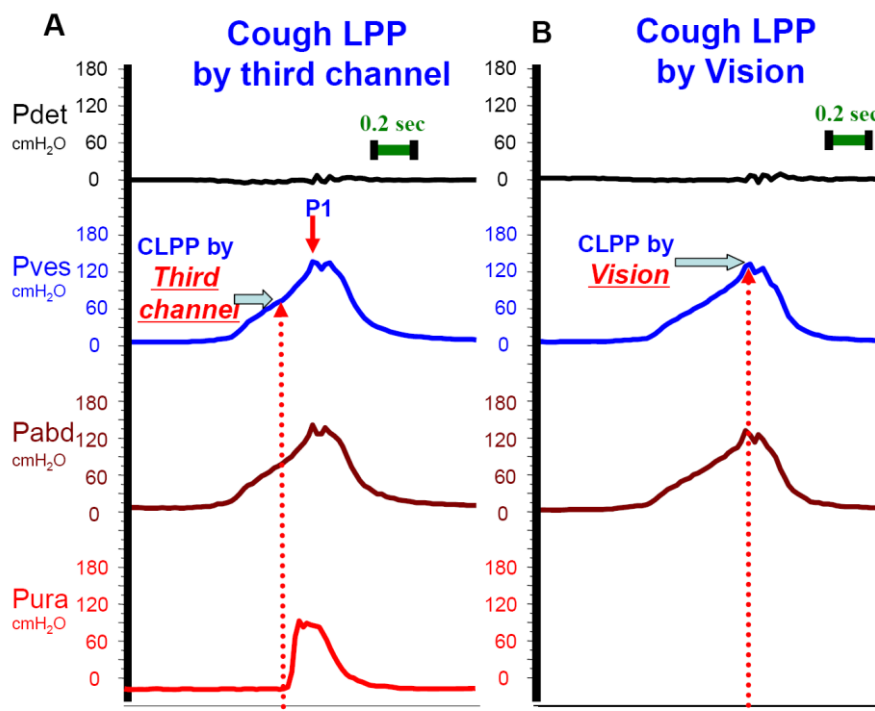


Fig. 1. Representative tracings of urodynamic study on cough provocations. **A** shows the Cough leak point pressure (LPP) determined by *third channel* and **B** by *vision*. **P1** is the peak pressure of the provocation with third channel. The same procedures were done on Valsalva.

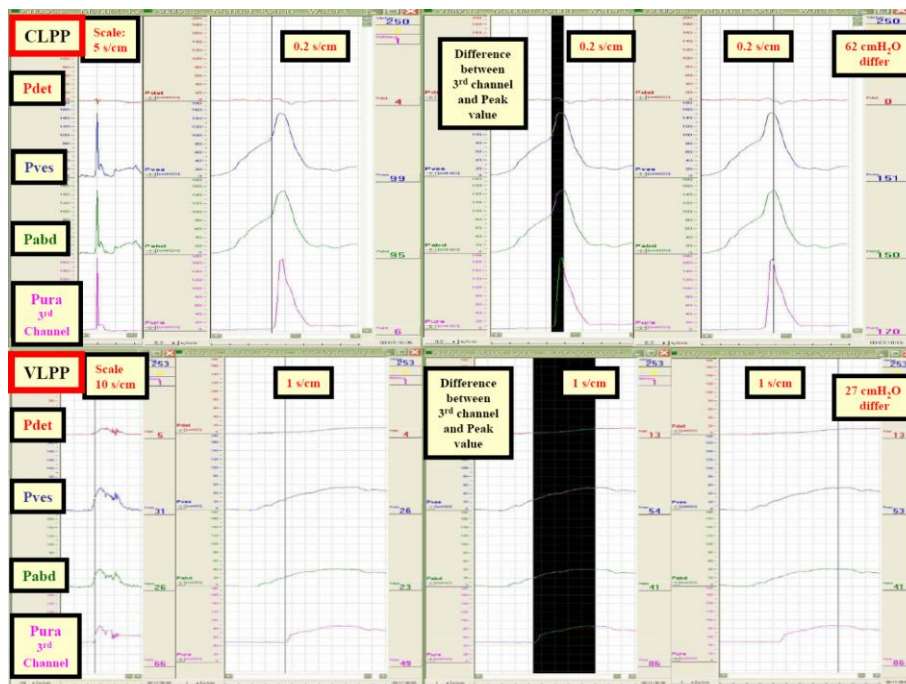


Fig. 2. Representative tracings of urodynamic study on **cough and valsalva** provocations. The Graphs of upper line shows the Cough leak point pressure (CLPP), showing the difference between the values detected by 3rd channel and peak value. The graphs of lower line shows valsalva LPP, showing same difference.

<i>Specify source of funding or grant</i>	NONE
<i>Is this a clinical trial?</i>	Yes
<i>Is this study registered in a public clinical trials registry?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Inha University Ethic Committee
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes