DETRUSOR CONTRACTION “SUSTAINABILITY” RESTORE AFTER PELVIC ORGAN PROLAPSE SURGERY

Hypothesis / aims of study
Pelvic organ prolapsed (POP) may cause bladder outlet obstruction and decrease detrusor contractility. Bladder contractility consists of contractile strength and duration. However, the variable method for evaluating the contraction duration is not well validated. The most widely used measurement of bladder contractility is the Watts factor (WF). WF was calculated throughout bladder emptying. Impaired bladder contraction represent not only decreased peak of WF, but also poorly sustained detrusor contractions. From this point of view, the maximum height of the resulting curve (Wmax) and its pattern should be discussed separately. In the present study, we focused on the detrusor contraction sustainability using a new pressure flow study (PFS) parameter. We focused on the detrusor contractility pattern of POP patients with and without temporary vaginal pessary and post operation PFS data.

Study design, materials and methods
We defined “Wmax %” as the percentage of when reach the Wmax during micturition (figure a). A normal detrusor contractility pattern show a sharp increase at the initiation of micturition, and slight increasing to the end of micturition. However, patients with impaired contractility show a fading contraction pattern. Wmax % could represent the pattern of detrusor contractility.

Results
The mean age (range) of patients was 74 (63-84). The mean pre (pessary (-) and (+)) and postoperative Qmax and Pdet at Qmax were not changed significantly (15.0 ± 12.4, 16.7 ± 8.3, and 13.3 ± 7.5 ml/min) and (13.7 ± 6.5, 13.9 ± 6.9, and 18.4 ± 12.0 cmH2O), respectively. Residual volume decreased significantly with pessary (+) compare to pessary (-) (160.7 ± 122.5, 53.0 ± 149.5, and 88.2 ± 95.6 ml, P<0.05). Although both parameters Wmax (3.8 ± 3.1, 10.7 ± 9.2, and 4.8 ± 2.2 W/m²) and Wmax % (60.8 ± 23.8, 81.7 ± 21.7, and 70.4 ± 27.2) have significant differences by analysis of variance, multiple comparison reveal significant intergroup difference only in Wmax % (p=0.028) (typical case: figure b).

Interpretation of results
Wmax is the maximum instantaneous power of contraction, whereas Wmax % can confirm the improvement of detrusor contraction sustainability. Moreover, Wmax % shows more sensitivity for detecting the restoration of detrusor contraction compare to Wmax.

Concluding message
Our study confirmed that mesh surgery restore the detrusor contractility pattern of anterior pelvic organ prolapsed patients. The measurement of W max % provides some insight into the bladder contraction sustainability.
Disclosures

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