Correlation between preoperative urodynamic findings with correction of pelvic organ prolapse (POP) and the improvement of overactive bladder symptoms following tension-free vaginal mesh operation in women with POP

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Background
• Pelvic organ prolapse (POP) is a debilitating condition in women and associated with not only voiding symptoms but also overactive bladder (OAB) symptoms such as urgency and frequent urination.
• Although the etiology of urinary symptoms of POP is multifactorial, it has been proposed that functional bladder outlet obstruction (BOO) due to prolapsed organs and/or reduced pelvic floor support are important causes of POP-associated non-neurogenic OAB. In this study, we aimed to elucidate the mechanisms inducing OAB condition in women with POP.

Aims of study
• To elucidate the mechanisms inducing OAB condition in women with POP.

Materials and Methods
• Prospective study from May 2010 to November 2011.
• Forty women with POP associated with stage 2 or greater cystocele.
– They received filling cystometry and pressure flow study in the sitting position.
– They received tension-free vaginal mesh (TVM) operation.

Urodynamic study
* Baseline(=Before)
* After correcting the POP by inserting a single gauze pack in the vagina (=After)

Results
Fig. 1 Prevalence of OAB and DO in POP
OAB wet OAB dry non OAB

Fig. 2 Results of bladder capacity at FDV and MDV before and after insertion of a gauze pack in the vagina

Fig. 3 Results of detrusor pressure (Pdet) at FDV and MDV before and after insertion of a gauze pack in the vagina

Table 1 Correlation between preoperative DO and OAB after TVM operation

<table>
<thead>
<tr>
<th>DO after intravaginal gauze pack insertion (UDS) (n=14)</th>
<th>Disappeared (n=11)</th>
<th>Improved (n=1)</th>
<th>Unchanged (n=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAB after TVM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappeared</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Improved</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unchanged</td>
<td>0</td>
<td>0</td>
<td>1</td>
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Conclusions
• POP is an important direct cause of OAB symptoms as exemplified by the immediate decrease of DO following POP correction during UDS
• POP-induced bladder overdistention due to cystocele, which could elicit afferent nerve sensitization in response to bladder stretch and/or decrease bladder blood flow, is considered to be directly involved in the emergence of OAB associated with POP, as OAB or DO conditions can be reversed within a short period of time after POP correction (either by TVM surgery or gauze pack insertion, respectively) in many cases
• Preoperative UDS with POP correction using intravaginal gauze pack insertion could be a useful method for predicting the outcome of POP surgery in the improvement of OAB symptoms

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