

## **THE EFFECT OF THE TRANSURETHRAL CATHETER ON THE MAXIMUM URINE FLOW DURING PRESSURE-FLOW STUDY IN NORMAL FEMALE SUBJECTS.**

### **Aims of Study**

Pressure-flow study (PFS) by using a transurethral catheter is a prevalent examination performed as an ordinary urodynamic study. However, it is the fact that the transurethral catheter has a disadvantage that the urinary flow is interfered during the voiding. There have been reported that the effect of transurethral catheter on the maximum urine flow rate during the PFS in male subjects. However, there has been rarely reported about the effect in female subjects. Then, in this study, we compared the urine flow rate in PFS with that in catheter-free uroflowmetry in normal female subjects, and estimate the effect of the transurethral catheter.

### **Methods**

Twenty-one normal Japanese female subjects (mean age, 44.8 years; range, 22 to 73 years) with no evidence of neurological abnormalities were examined. At first, catheter-free uroflowmetry was performed and the maximum flow rate (Q<sub>max</sub>) and the voided volume were measured. Then, the PFS was performed with a transurethral 7Fr double lumen catheter, and the Q<sub>max</sub> and the voided volume were measured. In the PFS, a conventional urodynamic system was used. Bladder pressure was monitored via the transurethral catheter and abdominal pressure was measured via a rectal balloon. The Q<sub>max</sub> in the PFS was compared with the Q<sub>max</sub> in the uroflowmetry. Furthermore, to exclude the influence of discrepancy of the voided volume, the Q<sub>max</sub> of the PFS started at the same bladder capacity of the uroflowmetry was examined in last nine of 21 subjects.

### **Results**

In all of 21 subjects, the Q<sub>max</sub> and the voided volume in both the catheter free uroflowmetry and the PFS with the transurethral catheter were measured. In the uroflowmetry, Q<sub>max</sub> was 30.8±8.9 ml/s and the voided volume was 254±125 ml. In the PFS, the Q<sub>max</sub> was 21.7±8.7 ml/s and the voided volume was 318±119 ml. The Q<sub>max</sub> in the PFS is significantly lower than the Q<sub>max</sub> in the uroflowmetry (p<0.0001). And the Q<sub>max</sub> in the PFS was about 69.5% of the Q<sub>max</sub> in the uroflowmetry. The voided volume in the PFS was significantly more amount than the voided volume in the uroflowmetry (p =0.02). In nine subjects who were also examined the PFS at their uroflowmetry's voided volume, the Q<sub>max</sub> decreased consequently as compared with the Q<sub>max</sub> in the uroflowmetry (p =0.0001). The Q<sub>max</sub> of the PFS at the capacity of the uroflowmetry was 24.2±9.7 ml/s, and it was 75.0% of the Q<sub>max</sub> in uroflowmetry.

### **Conclusions**

This study shows that the Q<sub>max</sub> with the transurethral catheter in normal female subjects was also decreased distinctly, which was recognized in male subjects. Interpretation of the PFS should take into account the effect of transurethral catheters.