

## ACQUIRED BLADDER SENSATION AFTER AUGMENTATION ILEOCYSTOPLASTY IN SPINA BIFIDA PATIENTS

### Aims of Study

The sensation of bladder filling is one of the important physiological function in storage phase, which informs the time to void. Augmentation enterocystoplasty (AECp) is currently the ultimate treatment of choice for a urinary bladder with loss of low-pressure reservoir function that is refractory to pharmacotherapy in spina bifida patients. After AECp, some patients begin to feel a novel sensation when their bladder is distended. This study was conducted to investigate whether or not the bladder sensation acquired after AECp is useful as a signal of bladder filling.

### Methods

Thirty-six (87.8%) out of 41 spina bifida patients undergoing regular follow-up developed novel bladder sensation after augmentation ileocystoplasty, in which the clam method was employed in general and 20 to 40 cm of ileal segment was used for bladder augmentation. Among them, 21 patients (9 males and 12 females, 24 to 97 months after surgery) underwent a full urodynamic study, including filling cystometry at an infusion rate of 20 ml/min. with warm (37°C) saline as an infusion medium. The intravesical pressure (Pves) and detrusor pressure (Pdet) were measured at the occurrence of two types of bladder sensation, i.e., weak sensation of bladder filling and strong one. Bladder compliance and the abdominal leak point pressure were also measured.

### Results

The mean bladder compliance was 24.2 ml/cmH<sub>2</sub>O. Bladder volume at the time of weak sensation ranged from 61 to 297 ml (mean: 186.5), while Pves and Pdet at that time were 6 to 28 cmH<sub>2</sub>O (mean: 17.6) and 0 to 19 cmH<sub>2</sub>O (mean: 8.6), respectively. Bladder volume at the time of strong sensation ranged from 173 to 597 ml (mean: 337.5), while Pves and Pdet were 10 to 61 cmH<sub>2</sub>O (mean: 30.3) and 2 to 42 cmH<sub>2</sub>O (mean: 18.5), respectively. At the time of strong sensation, Pdet in all but one patient was below 40 cmH<sub>2</sub>O that was a critical value for the preservation of upper urinary tracts. At the time of strong sensation, Pves was below the abdominal leak point pressure in most patients, except for 3 in whom Pves was 3 to 8 cmH<sub>2</sub>O higher.

### Conclusions

The weak and strong bladder sensations acquired after augmentation ileocystoplasty in spina bifida patients occurred at physiological bladder volumes with an acceptable increase of intravesical pressure. Because the strong sensation occurs without the risk of upper urinary tract deterioration and incontinence in the most cases, this acquired sensation can be used as a sign of time for urine drainage by intermittent catheterization.