

## THE ROLE OF ABDOMINAL LEAK POINT PRESSURE IN URINARY INCONTINENCE IN MYELOMENINGOCELE CHILDREN

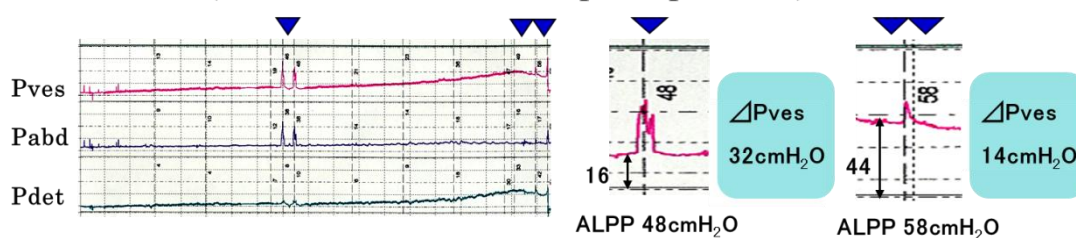
### Hypothesis / aims of study

The management of patients with neurogenic bladder secondary to myelomeningocele (MMC) imply complex problem including urinary incontinence. The abdominal leak point pressure (ALPP) is the lowest bladder pressure at which leakage occurs during prompted increases in intra-abdominal pressure, which was commonly used for the diagnosis and evaluation of stress urinary incontinence. However, the usefulness for the continence of MMC patients has not been fully investigated.

### Study design, materials and methods

A total of 44 consecutive patients with MMC were evaluated with videourodynamics and ALPP was measured under radio fluoroscopy. Furthermore, we assessed the relation between form of bladder neck and ALPP.

### Representative case of pressure flow study (ALPP: abdominal leak point pressure)

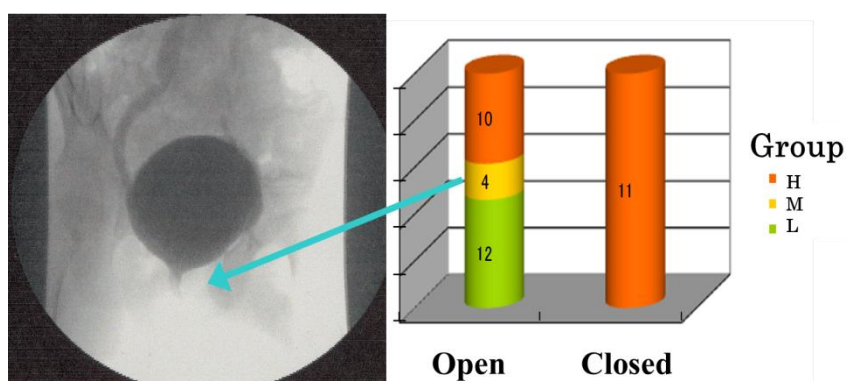


Pves: vesical pressure, Pabd: abdominal pressure, Pdet: detrusor pressure

### Results

A total of 44 patients with a mean age  $\pm$  SD of  $13 \pm 6.9$  years were studied, including 30 males and 14 females. The number of patient with ALPP measurable: 30 were stratified according to a pressure of 0 to 60 (group L), 60 to 90 (M) and greater than 90 cm H<sub>2</sub>O (H), patients was noted in 13, 4 and 13, respectively. Of the 14 patients who could not measure ALPP during urodynamics, 12 patients had maximal vesical pressure greater than 90 cm H<sub>2</sub>O. Relation between form of bladder neck and ALPP: 4 patients had closed bladder neck (4: group H) and 26 patients had an open fixed bladder necks (10: group H 4: group M and 12: group L).

### Bladder neck and ALPP



### Interpretation of results

ALPP reflects the continence mechanism of the bladder neck and proximal urethra.

"Detrusor" leak point pressure (DLPP) is a static measurement that reflects the amount of bladder pressure, which is believed to reflect bladder storage pressure and compliance. DLPP has been shown to be of prognostic value and subsequent follow-up of patients with MMC. On the contrary, ALPP is active or dynamic tests, which provide a useful tool for understanding the continence mechanism of MMC. In this study, there is no correlative relationship between the bladder neck and continence as 38.5% of patients with open bladder neck had high ALPP value. These findings provide further insights into the ALPP and anatomical morphology could not predict the continence of MMC children.

### Concluding message

According to our findings, the anatomical morphology of the bladder neck was not predicting the continence of MMC children.

### Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Ethics Committee of Hokkaido University **Helsinki:** Yes **Informed Consent:** Yes