

## A SPINAL CORD TRANSACTION INDUCED NEUROGENIC BLADDER MODEL AND ITS VIDEO-URODYNAMIC EVALUATION IN YOUNG RABBIT

### Hypothesis / aims of study

To establish a spinal cord transaction (SCT) induced neurogenic bladder (NB) model in young rabbit and evaluated by video-urodynamic study.

### Study design, materials and methods

Eighteen young male Japanese White rabbits [weighing at 1.2-1.6kg, (1.36±0.11)kg, 7-9 weeks old] were randomly divided into SCT (n=12) and sham group(n=6). SCT group with a modified method of transaction at the sixth lumbar level. Sham group was only bite part of the spinous process at the same position, exposed spinal cord but not given a transaction. Video-urodynamic assessment was performed at the second month post operation.

### Results

SCT group showed a typical postoperative manifestation of hind limb paralysis. The sham group (n = 6) showed no significant abnormality. Bladder capacity increased significantly in SCT group, the maximum cyst metric capacity between SCT group and sham group were 95.7 ± 7.19 ml vs. 51.6 ± 4.07ml ( $P < 0.001$ ), bladder compliance were 11.32±1.98 ml / cmH<sub>2</sub>O vs. 5.19 ± 0.26 ml / cmH<sub>2</sub>O, respectively ( $P < 0.001$ ), detrusor leak point pressure (DLPP) were 9.36 ± 2.33cmH<sub>2</sub>O vs. 18.67 ± 2.66cmH<sub>2</sub>O, respectively ( $P < 0.001$ ), the maximum detrusor pressure during voiding were 8.50 ± 3.34cmH<sub>2</sub>O vs. 31.33 ± 7.20 cmH<sub>2</sub>O ( $P < 0.001$ ).

### Interpretation of results

The common urodynamic performance of sacral spinal cord injury was detrusor areflexia associated with bladder compliance increased or normal, and bladder capacity can be significantly increased too, even lead to vesicoureteral reflux. Nevertheless, this study did not observe obvious vesicoureteral reflux; the main reason may be the animals have not conducted a long-term urodynamic follow-up.

### Concluding message

This improved method of spinal cord transaction can be used to establish an immature rabbit model with a contractile detrusor for clinical research on neurogenic bladder.

### Disclosures

**Funding:** NONE **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rabbit **Ethics Committee:** Ethics Committee of the First Affiliated Hospital of Zhengzhou University