

THE PREDICTOR FOR DISCORDANCE BETWEEN THE LEVEL OF INJURY AND EXPECTED URODYNAMIC FINDING IN THE PATIENTS WITH TRAUMATIC SPINAL CORD INJURY

Hypothesis / aims of study

Most of suprasacral lesions result in detrusor overactivity (DO) and sacral lesions usually produce detrusor underactivity (DU) or areflexia (DA) in the patients with traumatic spinal cord injury (SCI). In clinical practice, however, discordance between the level of injury and expected urodynamic findings may be dealt with sometimes. We aimed to identify the predictor for discordance from the review of clinical parameters of the patients with traumatic SCI.

Study design, materials and methods

From January 2004 to June 2010, 95 patients with traumatic SCI received both urodynamic study and spinal magnetic resonance imaging at our institution. Of the patients, excluding 38 patients with unclear level of injury, less than 6 months interval from injury to urodynamic study, multiple levels of injury, other neurologic or urologic conditions that affect voiding function, 57 patients were enrolled in final analysis.

Results

The mean age was 36.4 years, and 38 (66.7%) of the patients were men. Thirty-nine (68.4%) patients had suprasacral lesions, and 18 (31.6%) had sacral lesions. Bladder management methods at the time of urodynamic study are as follows: spontaneous/reflex voiding in 26 (45.6%), clean intermittent catheterization in 23 (40.4%), chronic urethral catheterization in 6 (10.5%), and suprapubic catheterization in 2 (3.5%). Patients were divided by whether the expected urodynamic findings were coincident with the levels of injury. Group I consisted of 17 (29.8%) patients with DA/DU in the suprasacral lesions or DO/striated sphincter dyssynergia in the sacral lesions. Group II consisted of 40 (70.2%) patients showing concordance of the expected urodynamic findings with the levels of injury. Age at the injury, sex, completeness of injury, mechanism of injury, and bladder management methods were not different between the two groups. On the other hand, the interval from injury to urodynamic study was shorter in group I than group II (3.7 vs. 7.3 years, $P=0.049$), and sacral lesions were more common in group I (52.9 vs. 22.5%, $P=0.032$).

Interpretation of results

Although the urodynamic findings of patients with traumatic SCI may be expected by classifying the level of injury at the initial evaluation, substantial portion of patients showed the discordance between the level of injury and expected urodynamic findings. Therefore, physicians dealing with these patients may consider predictors for discordance between the level of injury and expected urodynamic findings in planning treatment strategies at the initial evaluation.

Concluding message

About 30% of our patients with traumatic SCI demonstrated the discordance between the level of injury and expected urodynamic findings. When the interval from injury to urodynamic study is relatively shorter or the sacral lesion is present, one might consider the discordance with urodynamic finding.

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Institutional Review Board of Seoul National University Bundang Hospital
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No