

REMARKABLE INCREASE OF URETHRAL ELECTROSENSITIVITY THRESHOLD IN PATIENTS WITH DETRUSOR OVERACTIVITY.

Hypothesis / aims of study

Sensation in the urethra is not easy to evaluate. And the clinical role of urethral sensation is not clearly defined. It is suggested that involuntary detrusor contractions are triggered by bladder sensory input conveyed in unmyelinated C-fibers. We investigated the sensation of the distal urethra by electrostimulation with the condition for the stimulation of C-fibers to be clear the clinical role of urethral sensation.

Study design, materials and methods

Kiesswetter (1977) first applied the technique for evaluation of mucosal electrosensitivity of urethra. A 14 Fr silastic Foley catheter was used as the electrostimulating catheter. Two platinum electrodes were mounted 1 cm apart and 1 cm below the balloon of the catheter. After urodynamic investigation consisting of uroflowmetry and filling cystometry, the electrostimulating catheter was passed into the bladder so as to fit the electrodes in the posterior urethra. The catheter was connected to a constant current stimulator supplying square wave impulses (3Hz, 0.5ms). The intensity of first sensation was recorded as the urethral sensitivity threshold.

Results

Total 56 patients were investigated and the results of urodynamic study were 38 patients with neurogenic bladder (with detrusor overactivity), 10 patients with idiopathic detrusor overactivity and 8 patients seemed to be normal. The threshold of the neurogenic bladder group was 15.5 ± 12.0 mA and normal group was 3.2 ± 1.5 mA. Statistically significant difference was existing between two groups. And the threshold of the idiopathic detrusor overactivity group was 5.5 ± 3.8 mA. It is not statistically significant but the threshold of this group was lower than that of the neurogenic bladder group and higher than that of normal group. No correlation was found between the threshold and the sensation of filling cystometry.

Interpretation of results

In neurogenic bladder condition, threshold of electrosensitivity was increased significantly. Moreover, in idiopathic case threshold of electrosensitivity was increased. The elevation of the urethral electrosensitivity threshold may show the subclinical sensory disorder of the lower urinary tract.

Concluding message

The evaluation of the urethral electrosensitivity may provide other information of afferent nerve condition of the lower urinary tract.