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EVALUATION OF REFLEXES TO IMPROVE VOIDING IN SPINAL CORD INJURY PATIENTS

Aims of Study: This report evaluates the contribution of maneuvers that facilitate the reflexes to improve voiding in spinal cord injury (SCI) patients. The maneuvers considered are. a) suprapubic tapping (SPT), b) anal stretch, and c) physical stimulation of the posterior bladder neck.

Methods: Thirty-two SCI patients (29 to 70 years old) with complete supraconal motor lesions were included in this evaluation. Simultaneous water cystometrograms, needle EMG of the periurethral sphincter and transrectal sonographic studies were done to visualize the bladder neck and posterior urethra in every patient. During urodynamic evaluation: a) SPT was done (minimum 10 times) to evaluate changes in the bladder pressure, opening of the bladder neck and posterior urethra, and changes in EMG activity of the external urethral sphincter, b) following anal stretch, changes in the EMG activity of the external urethral sphincter were recorded, and c) noted urodynamic changes following stimulation of posterior bladder neck region by touching 3 times with the urodynamic catheter guided by simultaneous transrectal linear array sonography.

Results: Following SPT 50% had a rise in mean maximum voiding pressure (MMVP) of 12 cm water, 30% had a drop in MMVP of 18 cm water and there was no change in 20%. Rise and fall in MMV seemed to correlate with the status of outflow obstruction. Anal stretch resulted in relaxation of the external urethral sphincter for a mean period of (11 seconds \pm 5 seconds). Physical stimulation of the posterior bladder neck facilitated the voiding reflex in 85% of the patients: The mean voiding pressure was 80 cm water (range 34-180 cm) on stimulation alone versus 85 cm (range 42-150 cm) on cystometrographic study.

Conclusion: The present study draws attention to the presence of facilitatory responses to voiding following suprapubic tapping, intraurethral stimulation of the bladder neck with a catheter and relaxation of striated urethral sphincter following anal stretch. Appreciation of these reflexes has a bearing on the interpretation of urodynamics, checking of residuals following catheterization and therapeutic use of anal stretch for voiding in spinal cord injury patients.