

BLADDER DYSFUNCTION IN PATIENTS WITH CAUDA EQUINA LESIONS: A CLINICAL, URODYNAMIC AND ELECTRODIAGNOSTIC STUDY

Aims of Study

In spite of the recognised deleterious effect of cauda equina lesions on lower urinary tract (LUT) function, data obtained in larger, systematically studied populations of these patients are limited (1-7). The aim of the present study was to present data on urinary function in a larger group of patients with clinical and radiological findings supportive of chronic lesions to the cauda equina or conus medullaris.

Methods

In 67 patients with cauda equina or conus medullaris lesion a urinary function questionnaire was used (8), responses scored and urinary dysfunction graded. The number of patients seeking help for urinary dysfunction was noted. Neurological examination of the trunk and lower limbs, quantitative electromyography of the external anal sphincter (EAS) muscles (motor unit potential (MUP) count during relaxation and analysis of MUP parameters) (9), evaluation of the lower sacral reflex, and urodynamic measurements were performed.

Results

Severe LUT dysfunction was present in 13%, moderate in 32% and mild in 43% of our patients. Urinary symptoms interfered with daily life in 88% and sexual life in 71% of sexually active patients, but only 36 patients had been seen by an urologist before inclusion into the study. Symptoms of disturbed bladder emptying were the most common (92% of patients), followed by urinary incontinence (58%) and symptoms of bladder hyperactivity (46%). Perianal sensation was normal in only 3 patients. The MUP count during relaxation was reduced in 52% patients. On EMG EAS muscles were bilaterally completely denervated in 5 patients, in 81% MUP analysis was abnormal, and in remaining 12% it was normal. Lower sacral reflex activation was reduced in 52%, and absent in 30% of patients. In 54% of 37 patients in whom it was measured, a postmicturition residual was found. On cystometry during storage phase detrusor hyperactivity was found in 45% of patients, and reduced bladder capacity in 7% of 44 patients with this investigation performed. During voiding phase an acontractile bladder was demonstrated in 45% patients, and detrusor hypoactivity in 20% patients. Using multiple linear regression analysis, only perianal sensory loss ($P = 0.0001$) and female gender ($P < 0.02$) had a significant positive effect on urinary incontinence. No effect of other factors on urinary incontinence, and no effect of any factor on disturbed bladder emptying, and bladder hyperactivity was found. Although the evaluated electrophysiological parameters were abnormal in a high percentage of patients they correlated poorly with LUT symptoms.

Conclusions

Our study confirmed significant urinary dysfunction in patients with chronic cauda equina lesions, which was correlated with the clinical finding of sensory loss in the lower sacral segments, but not the classical EMG parameters registered in the EAS muscle. Based on our results, we propose that more clinical attention be paid to patients with suspected cauda equina lesions. Further studies of this patient group are needed to provide an evidence base for appropriate diagnostics and therapy.

References

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