

SACRAL ELECTRODIAGNOSTICS IN PATIENTS WITH LOWER URINARY DYSFUNCTION

Aims of Study

Electrodiagnostic studies are regarded as a continuation of clinical neurological examination (1). They are thought to be useful in patients with urinary, bowel or sexual dysfunction in whom peripheral sacral nervous system lesion is suspected (2). In addition to demonstrating the lesion, these tests can help localise it and assess its severity. The aim of the present study was to analyse the referral pattern and findings in the patients with lower urinary dysfunction referred for electrodiagnostic evaluation.

Methods

From the database of our tertiary referral centre, all examinees from May 1997 to December 2002 in whom the author performed sacral electrodiagnostic studies for routine diagnostic purposes, were identified. Patients with lower urinary dysfunction (incontinence or retention) in whom quantitative electromyography (EMG) of the external anal sphincter (EAS) muscle was performed, were included. The values of motor unit potential (MUP) parameters obtained in patients were compared with published normative data (3). Data on examinees, specialities of referring doctors, diagnoses, symptoms and signs on neurological examination, and electrodiagnostic findings were evaluated using descriptive statistics.

Results

During the defined period, sacral electrodiagnostic studies – including valid quantitative EMG of the EAS – were performed in 201 patients. Of them, 127 had lower urinary dysfunction (44% men, 13-84 years of age) and were thus eligible for the study. Urinary incontinence was the only complaint in 63 patients, urinary retention in 31, while both, incontinence and retention, was reported by 35. Thirty-one patients were referred by urologists, 30 by family doctors, 24 by neurologists, 14 by proctologists, 13 by orthopaedic or trauma surgeons, 8 by gynaecologists, and remaining 7 by other physicians. In addition to lower urinary dysfunction, 47 patients reported faecal incontinence, 40 constipation, and 36 (29 men) of 56 with data available reported sexual dysfunction. On clinical examination, 37 patients had perianal sensory loss. Pathological quantitative EMG of the EAS was found in 39 patients (31%), of whom 26 also had additional non-urinary sacral dysfunction, and 16 patients also had perianal sensory loss on neurological examination. Only 1 patient (with a history of lumbar disc surgery) with both, isolated lower urinary dysfunction and normal perianal sensation, had abnormal electrophysiological findings. In a group of 87 patients with either additional non-urinary sacral dysfunction or perianal sensory loss, abnormal electrophysiological findings were demonstrated in 38 patients (44%). Among those with abnormal sacral electrodiagnostic findings, cauda equina lesion was diagnosed in 12, multi system atrophy in 7, polyneuropathy in 3, old obstetric injury in 2, and lesion due to (surgery for) anal prolapse in 1. In the remaining 13 patients no aetiology of neurogenic lesion was identified, but in 3 of them concomitant upper motor neurone signs were found, 2 patients had previous lumbar disc surgery, 1 had previous hysterectomy, 1 complained of lumbalgia, and in 1 Crohn's disease was diagnosed.

Conclusions

Lower urinary dysfunction was found to be a common reason for referral for sacral electrodiagnostic studies in our clinical setting. In patients with lower urinary dysfunction our study demonstrated electrodiagnostic abnormalities almost exclusively when either additional non-urinary sacral dysfunction was reported or perianal sensory loss was demonstrated on neurological examination. We propose that all patients with lower urinary dysfunction shall be asked about bowel and sexual dysfunction, and have perianal sensation tested. Non-urinary sacral dysfunction and abnormal sensation are sensitive but non-specific for the detection of a neurogenic sacral lesion. Hence, in patients who suffer from several sacral dysfunctions or have perianal sensory loss, electrodiagnostic studies are indicated.

References

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