536

Shaker H[1], Morad S[1]
1. Ain Shams University

RELIABILITY OF SACRAL ROOT PERCUTANEOUS NERVE EVALUATION AS A SCREENING TEST FOR PATIENTS WITH REFRACTORY OVERACTIVE BLADDER SYNDROME AND CHRONIC IDIOPATHIC URINARY RETENTION

Hypothesis / aims of study
Sacral root neuromodulation has established its position as a line of treatment of various voiding and storage dysfunctions. Percutaneous nerve evaluation (PNE) is a screening test aimed at predicting the response of such patients to neuromodulation before implanting them with a neuroprothesis. In this work, we intended to study the reliability of PNE as a screening test in this category of patients.

Study design, materials and methods
Forty nine patients with either overactive bladder or idiopathic non-obstructive chronic urinary retention were included in our study. All these patients failed all conservative and pharmacological means. Patients were subjected to PNE which entitles placement of temporary wire electrode percutaneously and kept for four days. During this period patients fill a comprehensive urinary diary which is compared to a baseline two similar diaries. Only patients that showed more than 50% improvement in their major symptoms were implanted with a permanent neuroprothesis. Patients are followed at 1, 3 and 6 month intervals and 6 monthly thereafter.

Results
Nineteen patients showed considerable improvement in the PNE trial period and were implanted. Seven of the implanted patients were in the bladder overactivity group while 12 were in the retention group. One patient of the bladder overactivity group and 3 in the chronic retention group failed after implantation with the permanent neuroprosthesis. Failure occurred after 6 months in the patient with bladder overactivity. On the other hand, in chronic idiopathic retention, cessation of the response occurred early post operatively in 2 patients and after a year in the third patient. In patients that showed good response after neuroprosthesis implantation, no statistical significant difference between data obtained with the PNE and those obtained at any point of the follow-up. The cause of failure was not clear as the place of the permanent electrode was verified by post-operative x-rays and there was no failure in internal pulse generator or the electrode. These 4 patients felt the stimulation at exactly the same area that they felt during the PNE denoting that the same nerve is stimulated and that there is no equipment failure. In patients that responded favourably after the implantation, there was no statistical significant difference between data obtained with the PNE and those obtained at any point of the follow-up for patients qualified for the implant. In the bladder overactivity group, urinary frequency dropped from baseline of 14.65±1.62 to 8.94±1.51, 8.88±.97, 9.01±1.15 and 10.79±1.12 voids/24hrs for the PNE, 1month, 3 month and 6 month post-implant follow-up respectively. The number of leaks/day dropped from a baseline of 3.93±0.79 to 0.47±0.20, 1.25±0.93, 1.08±0.75, 0.56±0.33 for the PNE and same post implant follow up respectively. In the retention group, implanted patients continued to void similar amounts compared to the PNE with very minimal post-void residual. The percentage of the post void residual to total bladder capacity dropped from 73% to 13.6%, 13.4% with the PNE and after 1 month of implantation respectively.

Interpretation of results
PNE is a reliable screening test that can predict the outcome of permanent sacral root neuroprosthetic implants for treatment of refractory voiding and storage dysfunctions in 78.95% of cases. The causes of failure of this test to predict the outcome of the rest of the patients are not clear.

Concluding message

Although PNE is a reasonably reliable simple test to predict the result of the permanent implant, nevertheless, further improvement for such a test is needed to overcome this small percentage of patients that fail postoperatively in spite of the good response during the screening test period.