Electrodiagnosis of Erectile Dysfunction in Patients after

Nerve-Sparing Radical Retropubic Prostatectomy

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Introduction: Differential diagnosis of erectile dysfunction (ED) is often difficult in patients who have undergone radical retropubic prostatectomy (RRP). Obviously penile (cavernous) nerves can be easily damaged during radical prostatectomy, even when “nerve-sparing” techniques are used. Patients who have undergone RRP invariably develop neurogenic ED, and after RRP using nerve-sparing techniques, neurogenic causes of ED are frequently dismissed. No agreement exists regarding whether electrodiagnosis can be a valuable tool in understanding ED after RRP or even which electrodiagnostic tests would be most efficient and accurate. We aimed to define pudendal nerve conduction testing via the Bulbocavernosus Reflex System (BRS; UroVal, Inc., Manhattan, KS) for the diagnosis of neurogenic ED after RRP.

Methods: We performed a prospective investigation of 12 patients who presented with ED after RRP via pudendal nerve conduction studies with the UroVal BRS on 24 corporal nerves. The BRS system is completely noninvasive. It is built around a tactile probe tip that contains a pressure transducer and is activated by pushing the tip against the skin, which overlays the area

where the pudendal nerve branch runs. The tactile pressure is then converted to a sound wave, which initiates the stimulus. The stimulus creates a time series that undergoes a marked detection algorithm scan and assesses changes in amplitude within the "X" millisecond window. Any change in amplitude is recorded, and the computer software calculates and displays the latency. Standard nerve conduction values with sequential and comparative results were recorded for all study participants. Cutoff limits and specificities of each test were analyzed. Distoproximal latencies were measured on all 24 nerve branches and were compared with normal values.

Results: Five (42%) of the 12 patients had results suggestive of neurogenic ED based on increased pudendal nerve latency values. Of the 24 nerve branches studied, seven (29%) had abnormal latency values.

Conclusions: ED after nerve-sparing RRP can have multiple causes, including neurogenic subtypes. Calculation of distoproximal pudendal nerve latency with the BRS is an accurate, objective, and noninvasive modality for measuring corporal nerve function and assessing neurogenic ED.