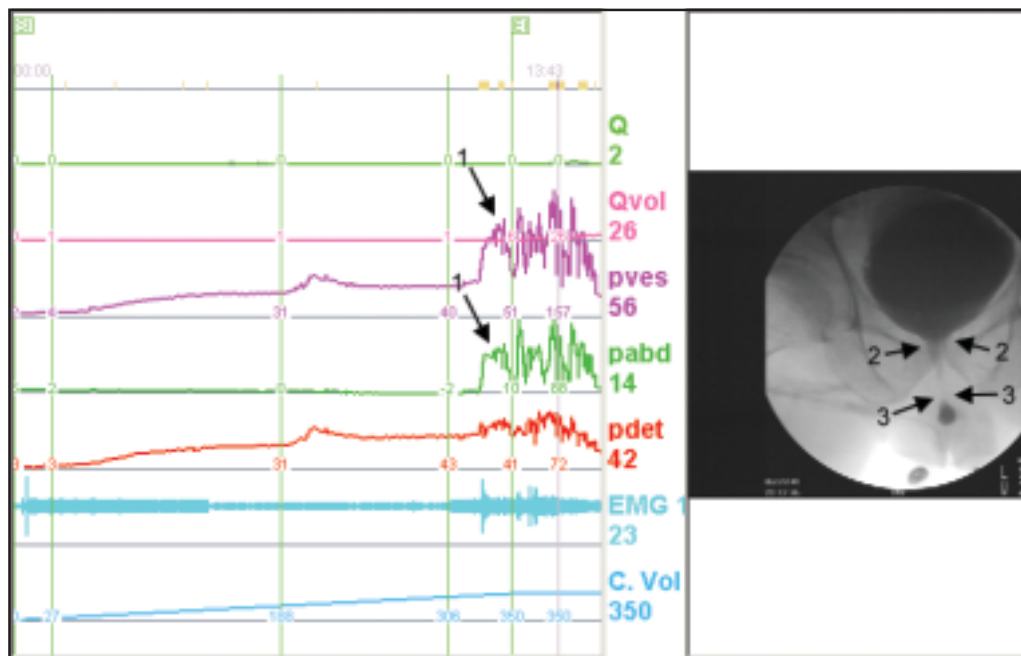


T1 Spinal Cord Injury with Difficult Urination

Hann-Chorng Kuo, M.D.

Department of Urology, Buddhist Tzu Chi General Hospital and Tzu Chi University, Hualien, Taiwan; E-mail: hck@tzuchi.com.tw



BRIEF HISTORY

This 49 year-old man had a complete T1- spinal cord injury and paraplegia for 3 years. He suffered from difficult urination, residual urine sensation, frequency, urinary incontinence and constipation over the last 3 months.

CLINICAL INVESTIGATION

Physically the patient was completely paraplegic and wheelchair bound. A renal scan revealed a good renal glomerulation filtration rate (93 mL/min) of both kidneys. A kidney, ureter and bladder (KUB) X-ray showed no obvious urolithiasis.

VIDEOURODYNAMIC FINDING

Videourodynamic study (VUDS) revealed first sensation of filling at 188 mL, full sensation at 306 mL, and urge sensation at 350 mL. The

bladder compliance was low (350/42) and the patient felt discomfort at the bladder volume of 350 mL. During the voiding phase, our patient used abdominal pressure to void (arrows 1). The voiding pressure was 117 cm water and only a low maximum flow rate (Qmax) of 2 mL/s was noted. Postvoid residual was 300 mL. The bladder neck and prostatic urethra were open (arrows 2) but the urethral sphincter was tight (arrows 3) during the voiding phase. No urethral sphincter relaxation during voiding was noted.

CLINICAL DIAGNOSIS AND MANAGEMENT

The VUDS revealed detrusor underactivity and low bladder compliance. Due to a high urethral resistance, the voiding pressure was high and the patient had to void by means of a high abdominal pressure. Intravesical botulinum toxin injection can decrease the intravesical pressure and reduce the episodes of overflow incontinence. If a patient wishes to void by abdominal pressure, concomitant urethral injection of botulinum toxin A is also indicated.