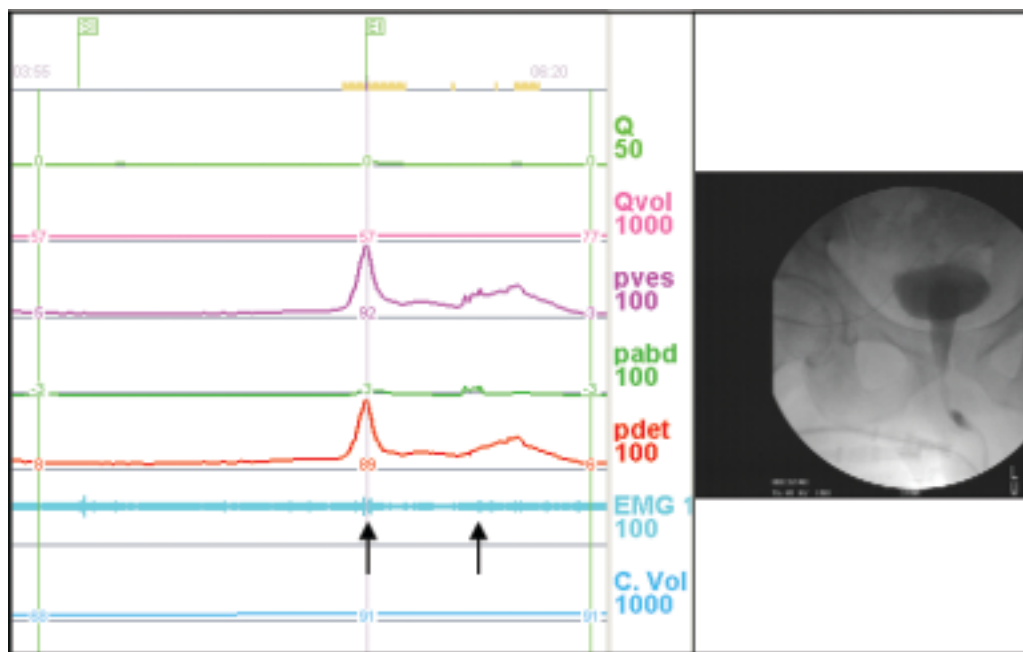


Spinal Cord Injury with Urinary Incontinence

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BRIEF HISTORY

A 51-year-old man had an old cervical spine epidural abscess. Quadriplegia developed after surgical intervention. He had suffered from urinary incontinence and difficult urination for 10 years. Urinary tract infections occurred 2-3 times per year. He had received intravesical instillation of resiniferatoxin for his detrusor overactivity, urethral injection of botulinum toxin A for urethral sphincter dyssynergia (DSD) and was treated with an alpha-blocker and baclofen.

CLINICAL INVESTIGATION

He had quadriplegia and was wheelchair bound. Urinalysis revealed pyuria with 20-30 WBC per high power field. The bulbocavernosus reflex was intact and the anal sphincter was tight. Because of urinary incontinence, he had to wear a diaper at all times.

VIDEOURODYNAMIC FINDING

Videourodynamic study (VUDS) revealed a small bladder capacity and high voiding detrusor pressure (Pdet). The bladder compliance was fair and urethral sphincter electromyographic (EMG) activity increased when the bladder was full (arrows). The urethral sphincter EMG increased during detrusor contraction and voiding. The maximal voiding Pdet was 81 cm water but the Pdet at maximum flow rate (Qmax) was 36 cm water. Post void residual was 0 mL.

CLINICAL DIAGNOSIS AND MANAGEMENT

This VUDS study is a typical detrusor sphincter dyssynergia (DSD) type 1, which is characterized by involuntary detrusor contraction combined with increased sphincter EMG activity. When the urethral sphincter relaxed, the uroflow reached a maximum with a normal urethral resistance. Patients with DSD type 1 usually can void smoothly with little PVR. However, under some circumstances such as urinary tract infection, constipation or surgical trauma the urethral sphincter tone increases and may cause incomplete emptying. Medication with antimuscarinics and alpha-blocker plus baclofen may be helpful.