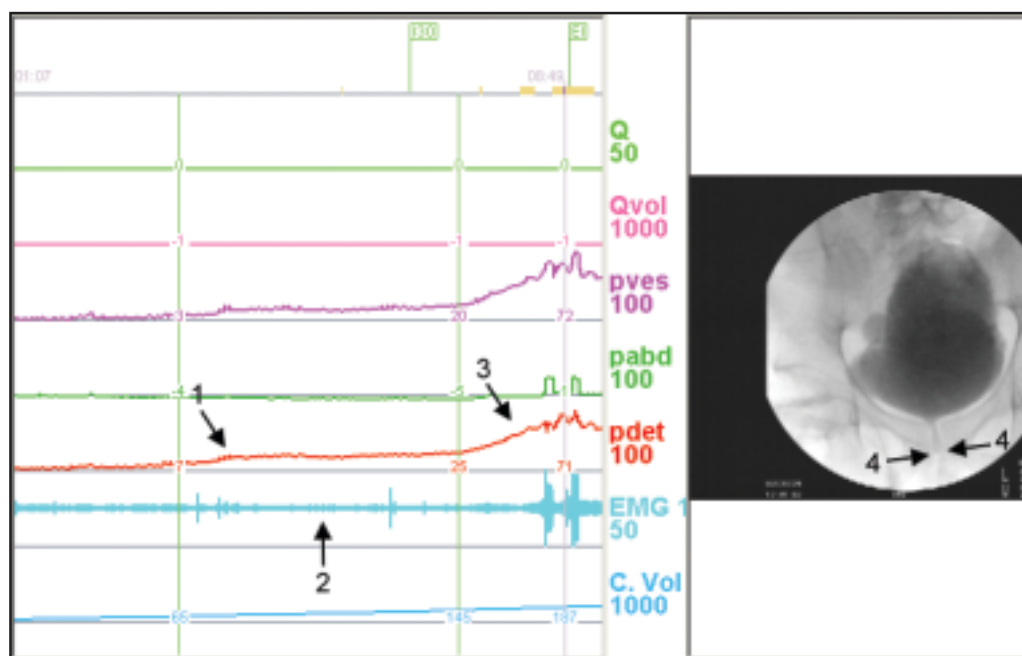


# Spinal Cord Injury with Detrusor Sphincter Dyssynergia and Difficult Urination

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## BRIEF HISTORY

A 37-year-old man presented with C5 spinal cord injury and quadriplegia after a traffic accident. Severe difficulty in urinating and urinary incontinence were noted after his spinal cord injury. Frequent urinary tract infection annoyed him for 2 years. Urethral sphincter injection of botulinum toxin A had been performed to assist his voiding dysfunction.

## CLINICAL INVESTIGATION

He was tetraplegic and wheelchair bound. Urinalysis revealed numerous white blood cells (WBC) per high power field. The bulbocavernosus reflex was hyperactive, but the sensation below C8 was absent.

## VIDEOURODYNAMIC FINDING

Videourodynamic study (VUDS) revealed detrusor overactivity at

a bladder volume of 65 mL (arrow 1). The detrusor contractility was low and increased urethral sphincter activity was also accompanied with detrusor contraction (arrow 2). Bladder capacity was 187 mL with a rise of intravesical pressure up to 70 cm water (arrow 3). However, the urethral sphincter activity did not relax and no urine flow occurred (arrows 4). No vesicoureteral reflux was noted during the voiding phase.

## CLINICAL DIAGNOSIS AND MANAGEMENT

This VUDS showed a type 3 detrusor sphincter dyssynergia, which is characterized by increased urethral sphincter activity when the bladder is full and the sphincter activity persisted during the voiding phase. Because the bladder outlet is closed, increased intravesical pressure will injure the bladder defense mechanism and result in urinary tract infection. Urethral injections of botulinum toxin A is indicated to reduce the urethral resistance. If the patient wishes to be continent, intravesical injections of botulinum toxin A plus intermittent catheterization is also feasible.