

# Mixed Intrinsic Sphincter Deficiency and Detrusor Overactivity in a Woman

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## BRIEF HISTORY

A 58-year old woman had had symptoms of frequency urgency and urinary incontinence for more than 3 months. She had 2 children, all normal spontaneously delivered, and had no history of pelvic surgery. The urinary incontinence occurred whenever she got the sensation of urgency or coughing. She had been treated with antimuscarinic for 1 month but this failed to relieve her symptoms.

## PHYSICAL EXAMINATION AND LABORATORY FINDINGS

Physically she was normal in appearance. No cystocele or uterine prolapse was noted. Urine leakage was demonstrated when she strained or coughed. Uroflowmetry revealed a maximum flow rate (Qmax) of 27 mL/s, voided volume of 181 mL and postvoid residual volume (PVR) of 5 mL. A highly sensitive C-reactive protein level of 0.43 mg/dL was also measured.

## VIDEOURODYNAMIC STUDY

Because antimuscarinic failed to relieve her symptoms, a videourodynamic study was performed to investigate the underlying vesicourethral dysfunction. During the bladder filling phase, low-amplitude detrusor contractions accompanied with urge sensation was noted (arrow heads). The first sensation of filling was perceived at 130 mL, full sensation at 206 mL and urgency sensation at 244 mL. At a bladder filling of 200 mL, several coughs and Valsalva maneuver were performed and the lowest abdominal leak point pressure of 48 cmH<sub>2</sub>O was noted (arrows) during straining, however, no bladder neck hypermobility was noted (arrows). After the last Valsalva maneuver, uninhibited detrusor contraction occurred and urination started (arrows). The voiding pressure was 12 cmH<sub>2</sub>O, Qmax was 17 mL/s and PVR was 0 mL.

## DIAGNOSIS AND MANAGEMENT

Mixed intrinsic sphincter deficiency and detrusor overactivity is the likely cause of her urge syndrome and urinary incontinence. Because low-amplitude detrusor contractions occur during bladder filling she feels the urge to void at small bladder volume and she has frequent urination. Intrinsic sphincter efficiency (ISE) without bladder neck hypermobility is likely to cause stress urinary incontinence. However,

uninhibited detrusor contraction occurs whenever she coughs and urine leaks into the urethra. The detrusor overactivity may be primary or secondary to ISD. Since antimuscarinics failed to solve the incontinence, a suburethral sling might increase urethral resistance, eliminate urine leaks into the urethra, and hence, reduce the occurrence of detrusor overactivity during coughs. If frequency and urgency persist after anti-incontinence surgery, antimuscarinics might be effective for the condition of no ISD.

