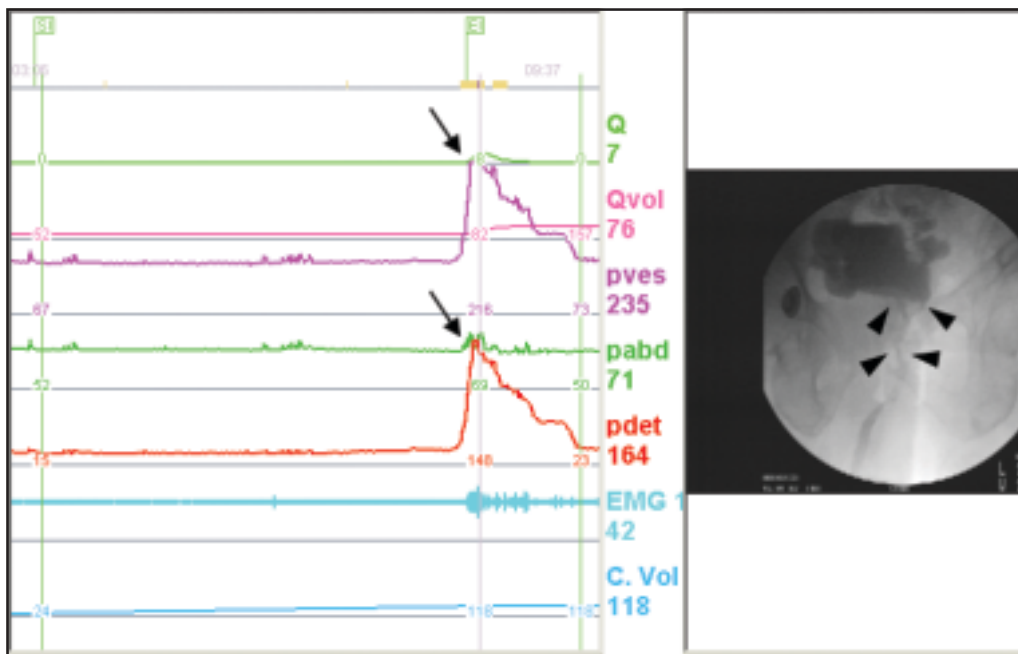


Benign Prostatic Hyperplasia with Bladder Outlet Obstruction

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BRIEF HISTORY

An 81-year-old man had recurrent urinary retention for 2 years prior to this admission. He had been treated with alpha-blocker and 5-alpha-reductase inhibitor, however, the lower urinary tract symptoms persisted. Intraprostatic injections of botulinum toxin A (Botox) had been performed three times with a total dose of 600 units but urinary retention still occurred.

CLINICAL INVESTIGATION

The prostate was huge on digital rectal examination. The surface of the prostate was smooth and the consistency was elastic and firm. The total prostate volume was 162 mL, and the transition zone index was 0.57. Uroflowmetry revealed the maximum flow rate (Q_{max}) was 10.4 mL/s, voided volume was 103 mL and postvoid residual (PVR) was 171 mL. The prostatic specific antigen was 5.32 ng/mL. He was neurologically normal and urinalysis results were negative.

VIDEOURODYNAMIC FINDINGS

During bladder filling, phasic detrusor contractions occurred. First sensation of filling was felt at 85 mL, full sensation (FS) at 96 mL, and uninhibited detrusor contraction to voiding occurred when he reached FS (arrows). The voiding detrusor pressure at Q_{max} was 150 cm water and the Q_{max} was 8 mL/s. The voided volume was 105 mL and PVR was 30 mL. During the voiding phase the bladder neck and prostatic urethra were narrow (arrow heads). Multiple bladder diverticula were also noted in the cystourethrogram.

CLINICAL DIAGNOSIS AND MANAGEMENT

The results of the videourodynamic study revealed a typical case of BPH with bladder outlet obstruction (BOO). High voiding pressure, low flow rate and narrow bladder outlet all demonstrated the presence of an anatomical obstruction. The BOO may also lead to functional change of the bladder, i.e. small bladder capacity and detrusor overactivity. Since medical treatment and minimally invasive therapy failed in this patient, transurethral resection of the prostate is recommended to relieve his LUTS.