In addition to its use in the setting of bladder outlet obstruction due to BPH, balloon dilatation has been proposed as a potential approach for the management of detrusor external sphincter dyssynergia [1]. Indeed, some believe this procedure represents a technically-simpler approach than a complete surgical sphincterotomy, with less chance for blood loss or other associated complications.

This technique was first described by Chancellor et al. in 1992, who report their experience with a cohort of seven spinal cord injured men. They begin with cystoscopy to evaluate the sphincter and rule out bladder abnormalities. Next, a guidewire is passed via the cystoscope, and a prostate balloon dilatation catheter is inserted over the wire into the bladder. Fluoroscopy is employed to guide positioning, with the positioning balloon first inflated in the prostatic urethra, then pulled back until it sits 1–2 cm distal to the external sphincter. The dilatation balloon is then gradually inflated with the external sphincter at its midpoint. With the balloon properly positioned across the external sphincter, a waist will be seen, which will ‘pop’ or disappear as the balloon is inflated to 4 atm pressure. The inflated balloon is left in place for 10 min, and then removed. A 22 Fr three-way Foley catheter is inserted, and a retrograde urethrogram performed to assess for extravasation. Typically, this reveals a small amount of extravasation from multiple tears in the external sphincter.

If the urine is bloody, continuous bladder irrigation may be initiated. Otherwise, the catheter is left to straight drain. The patient is typically discharged after a 24–48 h, and the catheter removed in approximately one week. In Chancellor’s

group of seven men, varying in age from 21 to 39 years and requiring catheter drainage of their bladders prior to balloon dilatation, all subjects were successfully voiding post-operatively, without dribbling incontinence or diminishment of renal function at four months follow-up. Symptoms of autonomic dysreflexia improved in all patients. One man did develop delayed post-operative bleeding and required transfusion.

There have been several well-designed studies comparing the effectiveness and complications of balloon dilatation versus conventional external sphincterotomy in the treatment of DESD. After their initial description of the procedure, Chancellor and colleagues compared balloon dilatation to 12 o’clock sphincterotomy and Urolume endourethral stent placement [2]. This study was not randomized, and there were substantial differences in baseline characteristics between groups. However, the results suggested that both balloon dilatation and stenting were comparable with sphincterotomy in terms of frequency of post-procedural febrile UTIs (15–20%) and resolution of hydronephrosis (50–100%) over 12 months follow up. Complications of balloon dilatation in this study (20 subjects in this arm) included blood transfusion (5%), bulbar urethral stricture (5%), and recurrent obstruction (15%). None of the patient’s treated with balloon dilatation noted decreased erectile function. PVRs and maximum voiding pressures were similar across groups at 12 months (33–67 mL and 27–36 cm H₂O).

References

1. Chancellor MB, Hirsch IH, Kiilholma P, Staas WE. Technique of external sphincter balloon dilatation. *Urology*. 1992;40:308–10.
2. Chancellor MB, Rivas DA, Abdill CK, Karasick S, Ehrlich SM, Staas WE. Prospective comparison of external sphincter balloon dilatation and prosthesis placement with external sphincterotomy in spinal cord injured men. *Arch Phys Med Rehabil*. 1994;75:297–305.

D. M. Castro-Diaz (✉)
Department of Urology, University Hospital of the Canary Islands,
Tenerife, Spain

B. Padilla-Fernandez
University of La Laguna, Tenerife, Spain