

Laborie's Expert Corner

UROLOGY & UROGYNECOLOGY

Dr. Scott MacDiarmid, M.D., FRCPSC - Multi-Channel Advanced Urodynamics vs Penile Cuff Uroflowmetry

How Multi-Channel Advanced Urodynamics works:

Urodynamics is a functional assessment that provides pathophysiologic explanations for symptoms and/or dysfunction of the lower and upper urinary tracts. Urodynamics consists of a number of tests leveraging two catheters inserted into the urethra and rectum, and when combined with the history and physical examination, radiologic studies, and endoscopy, it is an essential part of our diagnostic armamentarium. These tests include but are not limited to: uroflowmetry, CMG, pressure flow studies, urethral pressure profilometry, etc.. Advanced urodynamics will help you understand all the various forms of urinary incontinence, overactive and under-active bladder, leak point pressure, detrusor sphincter dyssynergia, and intrinsic sphincter deficiency.



How Penile Cuff Uroflowmetry works:

The device is fitted to the penis and the patient is asked to voluntarily void into a uroflowmeter. The highest voiding pressure at flow interruption (PCuffInt) and Qmax are measured and plotted on a modified version of the ICS nomogram. Using the isovolumetric bladder pressure and maximum flow, the patients are diagnosed as being obstructed, not obstructed, high pressure high flow, and low-pressure low flow. **Although it's a beneficial test, it does not replace the liberal utilization of formal urodynamics in the male population as it does not assess the bladder's storage characteristics.**

Diagnosing the presence of significantly reduced bladder capacity, impressive detrusor overactivity, and/or loss of bladder compliance not only better defines the bladder storage disorder, it helps predict whether or not the patient's OAB symptoms may persist or even worsen following surgery.

Recommendation:

I recommend advanced multi-channel urodynamic studies prior to performing surgery in men with LUTS, especially those with bothersome storage symptoms. It's well established that prostatectomy and invasive procedures are less effective in unobstructed men, and I believe that storage symptoms are more likely to persist in those having unfavorable storage characteristics during cystometry.

Although the guideline statements are reasonable, I take a much more bullish approach to urodynamics and pressure flow studies. Proceeding with invasive prostate-directed therapy without filling and voiding cystometry in most patients does not allow for optimal patient/physician shared decision making.

Biography

Dr. MacDiarmid is director of the Alliance Urology Specialists Bladder Control and Pelvic Pain Center in Greensboro, NC. He completed fellowships in reconstructive urology and urodynamics at Duke University Medical Center in Durham, NC; the University of Otago in Christchurch, New Zealand; and the University of Sheffield in England. He is currently a clinical professor of Urology in the Department of Urology, at the University of North Carolina, in Chapel Hill, NC.

References:

1. The Art of LUTS
2. <https://pubmed.ncbi.nlm.nih.gov/19057217/>

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