

VALUE OF URODYNAMIC SPHINCTER MONITORING AND SCORING

Hypothesis / aims of study

Clinical symptom scores, e.g. the IPSS and AUA scores, have proven clinical value. However, they are more subjective than objective, and inherently lack specificity, e.g., an ability to separately quantify primary detrusor dysfunction from primary bladder outlet dysfunction. Applying scores to recorded bladder and urethral sphincter behaviour could bring greater specificity to interpretation of lower urinary tract (LUT) dysfunction. It could also provide a guide to therapy in the way of a severity index. This paper focuses on the value of selective sphincter scoring.

Study design, materials and methods

A dual channel T-DOC urodynamic catheter was used to continuously record the bladder and urethral behaviour during the filling and emptying phases of the UDP study. Study data was recorded on a Medtronic Duet® Logic G/2 urodynamic study (UDS) machine. Urethral pressures were scored as follows: a) Tone: One point (range 0-3 points) was assigned for each 10 cm of median closure pressure above 75cm H₂O, or less than 55cm H₂O, b) Reflex Instability: One point (range 0-3 points) was assigned for every 10cm of unstable deflection above/below the median sphincter closure during filling and c) Sensation: discomfort triggered by catheter movement was graded as none, mild, moderate, or severe using a 0-3 scale. A severity index score was obtained by dividing points assigned by the total possible points. This was then converted to a percentile.

Results

The urodynamic studies of 24 female patients, ages 23-59, median 40yrs, presenting with a primary complaint of frequency, were reviewed and scored. Urethral scores varied between 17% and 49% (median 32%) deviation from normal. In all the studies, there were no normal scores of the sphincter. 58% of these studies showed noxious sphincter hypersensitivity, 42% of patients had some degree of sphincter intrinsic weakness, and 92% showed spontaneous spastic sphincter dysfunction.

Interpretation of results

The various components of dysfunction, i.e., a) Spasticity, gradations of change or deviation from a smooth and steady sphincter pressure during filling, or sphincter resting pressures >75cm H₂O, b) Intrinsic weakness, gradations of tonal pressures < 55 cm H₂O and c) Sensation, variations in noxious sensations to catheter insertion or movement, could be objectively identified and quantified. Hence each component of dysfunction could be selectively addressed in a treatment plan.

Concluding message

Urodynamic studies should be geared toward obtaining comprehensive objective clinical data. A Scoring approach identifies and quantifies the various contributing elements to voiding dysfunction. This becomes particularly helpful in assigning a mix of therapies, e.g., the need to perform a sling for weakness along with giving meds for associated dyssynergia and/or bladder over activity. Scoring allows for a standardized approach toward the assessment and treatment of the LUT Dysfunction.

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	No
<i>This study did not require ethics committee approval because</i>	Routine Urodynamic evaluation of patients with voiding dysfunction
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes