

ELECTROMYOGRAPHY AND VOIDING CYSTOURETHROGRAPHY ARE BOTH NECESSARY FOR DETECTION OF DETRUSOR SPHINCTER DYSSYNERGIA

Hypothesis / aims of study

Detrusor sphincter dyssynergia (DSD) is defined as: "a detrusor contraction concurrent with an involuntary contraction of the urethral and/or periurethral striated muscle" [1]. There is currently no consensus regarding diagnosis of detrusor-external sphincter dyssynergia on urodynamic testing. In 2005 we published a retrospective study of needle EMG showing significant discordance between electromyographic (EMG) and voiding cystourethrographic (VCUG) determination of detrusor-external sphincter dyssynergia (DESD) [2]. In this project we again looked at this question, however with patch EMG and prospectively.

Study design, materials and methods

Patients were prospectively evaluated by a single urodynamicist in an academic continence center. Presence of DESD was determined by increased patch EMG activity and/or by a dilated bladder neck and proximal urethra on multichannel videourodynamics during detrusor contraction. These criteria had to be met in the absence of valsalva, pelvic floor spasm (dysfunctional voiding), attempt to inhibit voiding, history of sphincterotomy or stent. Minimal acceptable criterion for agreement between the two tests was set at 70% concordance.

Results

Forty-six patients were diagnosed with DESD. Binomial testing demonstrated significant disagreement ($p < 0.01$) in observed proportions. There was 46% agreement (25 patients) and 54% disagreement (21 patients) between EMG and VCUG for diagnosis of DESD.

Interpretation of results

We demonstrated significant disagreement between patch EMG and VCUG for a positive diagnosis of DESD. The findings in this prospective study with patch EMG are confirmatory of our prior retrospective study of using needle EMG.

Concluding message

A combination of EMG and VCUG may identify more cases of DESD than either modality alone. These findings underscore the need for more strict criteria to guide the diagnosis of DESD.

Table 1. Disagreement in diagnosis of detrusor-external sphincter dyssynergia (DESD) between electromyogram (EMG) and voiding cystourethrogram (VCUG) is evenly divided.

	DESD Absent by VCUG (Bladder Neck Closed)	DESD Present by VCUG (Bladder Neck Open)	Total
DESD Absent by EMG	0 by design	11	11
DESD Present by EMG	10	25	35
Total	10	36	46

References

1. Neurourol Urodyn (2002); 21:167-178.
2. Neurourol Urodyn (2005); 24: 616-621.

<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>	Yes
<i>Specify Name of Ethics Committee</i>	Albany Medical Center Internal Review Board
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No