



Available online at www.sciencedirect.com

SciVerse ScienceDirect

journal homepage: www.jfma-online.com



ORIGINAL ARTICLE

Clinical and video urodynamic characteristics of adult women with dysfunctional voiding



Yih-Chou Chen ^a, Hann-Chorng Kuo ^{b,*}

^a Department of Urology, Hualien General Hospital, Hualien, Taiwan

^b Department of Urology, Buddhist Tzu Chi General Hospital and Tzu Chi University, Hualien, Taiwan

Received 13 October 2011; received in revised form 20 April 2012; accepted 23 April 2012

KEYWORDS

detrusor overactivity;
dysfunctional voiding;
video urodynamics;
women

Background/Purpose: Dysfunctional voiding (DV) is an abnormality of bladder emptying in neurologically normal individuals where the external sphincter activity increases during voiding. This study investigated the clinical presentations and videourodynamic characteristics of adult women with DV. **Methods:** A total of 1605 women with lower urinary tract symptoms (LUTS) were investigated with videourodynamic (VUD) studies from 1997 to 2010. The clinical urinary symptoms and VUD characteristics of DV were compared with a group of urodynamically normal controls. Antimuscarinic or alpha-blocker treatment according to the chief complaint of storage or voiding LUTS was respectively given. **Results:** There were 168 women diagnosed with DV. Detrusor overactivity (DO) occurred in 69% of women with DV. Patients with DV had significantly lower cystometric bladder capacity, higher detrusor pressure, lower maximum flow rate, and larger post-void residual volume than the controls. A total of 114 (67.9%) patients had storage symptoms and 54 (32.1%) had voiding symptoms as their chief complaints among those with DV. Among them, urinary frequency ($n = 69$, 41.1%) was the most common chief complaint, followed by dysuria ($n = 53$, 32.1%), and urgency incontinence ($n = 26$, 15.5%). The incidence of urgency incontinence and dysuria were significantly greater than that in the control group, however, the incidence of frequency, urgency, or nocturia showed no significant difference between DV and control groups. The success rates were 41.2% ($n = 47$) for antimuscarinic therapy and 51.9% ($n = 28$) for alpha-blocker therapy in patients with storage and voiding LUTS, respectively ($p = 0.366$).

Conclusion: DO and storage LUTS commonly occurred in women with DV, suggesting DO could be one of the etiology in the pathophysiology of DV. VUD studies yielded a high diagnostic rate for DV in women with LUTS.

Copyright © 2012, Elsevier Taiwan LLC & Formosan Medical Association. All rights reserved.

Conflicts of interest: The authors have no conflicts of interest relevant to this article.

* Corresponding author. Department of Urology, Buddhist Tzu Chi General Hospital, 707, Section 3, Chung Yang Road, Hualien, Taiwan. E-mail address: hck@tzuchi.com.tw (H.-C. Kuo).

Introduction

Dysfunctional voiding (DV) is an abnormality of bladder emptying in neurologically normal individuals where the external sphincter activity increases during voiding. In 1973, Hinman and Bauman¹ popularized the concept of incoordination between the detrusor and activity of the pelvic floor-external sphincter complex. DV was first described as the failure to coordinate the detrusor and external sphincter in children in 1978.² Since then, most DV studies focused on the elimination syndrome and urinary tract infection (UTI) in children. Nonetheless, this phenomenon was also noted in women presenting with lower urinary tract symptoms (LUTS)³ and is postulated to be a learned voiding dysfunction in adults.⁴ Statistically significantly more mothers of children with overactive bladder (OAB) or DV reported having had similar symptoms in their childhood. When OAB of childhood persists into adulthood, it is likely to cause DV in the adult.⁵

Although DV is common in children and can be detected early in those with characteristic clinical presentations or recurrent UTIs, the differential diagnosis between DV and detrusor overactivity (DO) in adult women is difficult and can be inaccurate when based on LUTS alone. A video-urodynamic study (VUDS) is an examination combining voiding pressure, urine flow, and imaging studies during the voiding phase and can provide great help in differentiating DV from LUTS in women.⁶ An accurate diagnosis of DV is essential in order to select correct treatment. Therefore, we analyzed the clinical presentations and VUD characteristics of women diagnosed with DV.

Patients and methods

This study was a retrospective analysis among a total of 1605 consecutive women with LUTS were analyzed from 1997 to 2010. All women who received VUD study had LUTS that could not be eradicated after medical treatment or physiotherapy for more than 3 months. The medical record charts were reviewed, and the clinical LUTS, comorbidities, VUD characteristics, urodynamic parameters, and result of treatment were recorded in detail. Patients with pelvic organ prolapse, genuine stress urinary incontinence, previous genitourinary surgery, history of genitourinary tract cancer, neurogenic voiding dysfunction, established diagnosis of interstitial cystitis/painful bladder syndrome, or active UTI were excluded. These female patients with LUTS received VUD study for diagnosis. The diagnosis was made according to International Continence Society (ICS) terminology.⁷ If patients suffered from LUTS but normal in VUD study, they were considered as urodynamically normal and enrolled as control group.

The clinical symptoms of LUTS were recorded in detail. The main symptom was defined as the most bothersome symptom that drove patients to seek help. The LUTS recorded were also clustered into storage symptoms (including frequency, urgency, urgency incontinence, and nocturia), voiding symptoms (including hesitancy, difficult urination, slow stream, intermittency, terminal dribbling, and urine retention), pain symptoms (including painful sensation over bladder, urethra, or perineum), and post-

micturition symptoms. Urinary retention was referred to the condition that patients could not urinate spontaneously and catheterization was necessary to evacuate the bladder.

VUD studies were performed using multichannel urodynamic equipment (Life-Tech, Houston, TX, USA) and a C-arm fluoroscope (Toshiba, Tokyo, Japan) prior to any treatment. The procedure was performed in the sitting position with a 6 Fr dual-channel urethral catheter for recording intravesical pressure and infusing warm normal saline containing 20% urografin and an 8 Fr rectal balloon catheter to record the intra-abdominal pressure. The VUD study was performed at a filling rate of 20–30 ml/minute. The C-arm fluoroscope was positioned 45 degrees from the buttock so that the urethra could be lengthened and the bladder neck, urethral sphincter, and pelvic floor (distal) urethra could be clearly identified. Urethral sphincter electromyography (EMG) was recorded using surface patch EMG electrodes placed at the perianal area. The VUD study was repeated at least once to demonstrate reproducibility of the findings during the first examination. All descriptions and terminology of urodynamic parameters were in accordance with the recommendations of the International Continence Society.⁷

A voiding detrusor pressure (Pdet) at maximum flow rate (Qmax) of more than 35 cm H₂O was considered high Pdet,⁸ 10–35 cm H₂O was considered normal Pdet, and 10 cm H₂O or less was considered low Pdet. DO was defined as evidence of spontaneous detrusor contractions occurring during bladder filling (phasic DO) or before uninhibited detrusor contraction, voiding at bladder capacity (terminal DO) during the urodynamic study. If patients had a strong desire to void at a cystometric bladder capacity (CBC) of less than 350 ml and without the occurrence of DO, they were considered to have increased bladder sensation. Bladder compliance was measured as the incrementally increased cystometric volume at full bladder sensation divided by the increased detrusor pressure.

The final diagnosis of DV was made based on the clinical symptoms and the main VUD findings. Patients with a stable bladder, normal bladder sensation, CBC > 350 ml, normal detrusor Pdet, or low Pdet but a Qmax > 15 ml/second, and PVR less than 10% of CBC were considered as urodynamically normal. The Qmax during VUDS was also compared to that in free uroflowmetry, the higher Qmax was adapted for final analysis. DV was diagnosed when high Pdet, intermittent or increased external sphincter EMG activity, and a “spinning top” urethral appearance on cinefluoroscopy during voiding occurred together. If patients were found to have a neurologic disease, they were classified as having external-detrusor sphincter dyssynergia but not DV.^{9,10} The urodynamic parameters and clinical symptoms were compared between patients with DV and controls.

Comorbidities were recorded from the medical records, including gastrointestinal, skeletal muscular, autoimmunity, and other systemic disorders. The VUD characteristics were also compared between those with and without comorbidities.

Antimuscarinic or alpha-blocker treatment, with or without a skeletal muscle relaxant according to the chief complaint of storage or voiding symptoms, respectively, was given to patients with DV. Patients were treated for 1–3 months and the treatment results were recorded using

Download English Version:

<https://daneshyari.com/en/article/3478974>

Download Persian Version:

<https://daneshyari.com/article/3478974>

[Daneshyari.com](https://daneshyari.com)