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CLINICAL AND URODYNAMIC CHARACTERISTICS OF ADULT ONSET NOCTURNAL ENURESIS IN WOMEN WITH PELVIC FLOOR DISORDERS

Hypothesis / aims of study

Nocturnal enuresis (NE) is the complaint of loss of urine occurring during sleep defined by the standardization sub-committee of International Continence Society (1). It is classified as primary persistent or recurrent, or secondary adult onset. Despite numerous papers discussing NE in children, only a few focused on NE in adult women. Prevalence of primary NE has been reported to be 2% and these women have been shown to be more vulnerable to depression and their quality of life was seriously affected because of bedwetting (2). The relation of secondary adult onset NE with pelvic floor disorders from the urogynecological perspective is not fully understood yet. The aim of this study was to evaluate the prevalence and associated symptom bother of secondary adult onset NE and to describe related patient characteristics in women with pelvic floor disorders in an urogynecology clinic by clinical findings, questionnaires of lower urinary tract symptoms, quality of life and ambulatory urodynamics.

Study design, materials and methods

Records of women with pelvic floor disorders attending the urogynecology unit of a University Hospital between 2009 and 2012 were retrospectively reviewed (n=402). All women were admitted with urinary incontinence and/or pelvic organ prolapse, none of them complaining of NE at admission. Each woman was directly questioned for the presence of NE by the question 'Do you have bedwetting during sleep?' and for presence of the nocturia by the question 'Do you wake up more than once for voiding at night?' Available data for baseline characteristics (age, menopausal status, parity, previous pelvic surgery, chronic disease), clinical examination findings (body mass index, Q-tip test (>30°), cough stress test, post void residual urine and pelvic organ prolapse staging) and voiding diary parameters, validated questionnaires for lower urinary tract symptoms, quality of life and sexual dysfunction (UDI-6, IIQ-7,OAB-V8, Wagner, PISQ-12) were evaluated. Frequency was defined as voiding more than 7 times a day and was extracted from voiding diaries. Pelvic organ prolapse staging was performed using the pelvic organ prolapse quantification (POPQ) system. Ambulatory urodynamic evaluation was performed in 20 patients using the LUNA ambulatory monitoring recorder (MMS^{TM}). Measurement was started after the patients' spontaneous micturition. The duration of ambulatory monitoring was limited to each patient's own micturition cycle. Monitoring was ended when the patient felt unable to delay voiding.

Results

The prevalence of NE among women with pelvic floor disorders was 20.8% (84/402). Median age of women with NE was 47 years and 24 (28.6%) were menopausal. None of the patients had any neurological or mental disorder. Eleven (13.3%) patients had diabetes mellitus and 23 (27.4%) had hypertension. Fifty-nine (70.2%) patients complained of nocturia; 36 patients fulfilled the voiding diaries and 21 of them had frequency (58.3%). Forty-five (54.2%) had stage 2 or more pelvic organ prolapse. Positive cough stress test and positive Q-tip test was seen in 35 (42.2%) and 46 (56.1%) patients respectively. Median of total UDI-6 scores was 55.5; irritative subscale score was significantly high with a median score of 83.3 (range 0 to 100). Median of UDI-6 stress subscale score was 50 (range 0 to 100). Mean duration of ambulatory urodynamics was 76.5 min (range 40-130). Supine empty stress test was positive in 2 of 20 patients who underwent urodynamic evaluation (10%). Among 20 patients, detrusor overactivity was present in 14 patients (70%) with or without urinary incontinence. Thirteen of the 20 patients had stress urinary incontinence (65%). Eight patients had urodynamic stress urinary incontinence with detrusor overactivity (40%).

Interpretation of results

Nocturnal enuresis is complex entity which may be caused by one or more of several pathophysiological mechanisms. However, data regarding NE in women with pelvic floor disorders is limited. The prevalence of NE among women with pelvic floor disorders was found to be high in this study with most patients being in their reproductive ages. Advanced prolapse was observed in half of the patients. Nocturia and frequency were common, the irritative subscale score of the UDI-6 was significantly high; consistently, 70% of patients had detrusor overactivity. These findings are concordant with the studies in which detrusor instability was found in up to half of the patients with primary persistent NE (3).

Concluding message

Nocturnal enuresis is very common among women with pelvic floor disorders. Irritative symptoms seem to be more significant in these women. More studies focusing on nocturnal enuresis in women with pelvic floor disorders are needed.

Table 1. Baseline and clinical characteristics of patients with nocturnal enuresis

Age (years, median min-max)	47 (22-79)
Menopausal n (%)	24 (28.6%)
Parity (n, median min-max)	3 (1-7)
Diabetes n (%)	11 (13.3)
Hypertension n (%)	23 (27.4)
COLD n (%)	7 (8.3)
Previous pelvic surgery n (%)	10 (11.7)
BMI (median, min-max)	29.8 (20.6-50)
Positive Q-tip n (%)	46 (56.1%)
Positive stress test	35 (42.2%)

PVR (ml, median, min-max)	30 (0,00-700)
POPQ ≥ 2	
Anterior	32 (38.6%)
Posterior	21 (25.30%)
Apical	7 (8.40%)
Frequency (median, min-max)	7 (2-23)
Urinary incontinence episodes (median, min-max)	4.17 (0-16)
Fluid intake (ml)	1883 (950-3850)

BMI: Body mass index, PVR: post void residual urine, POPQ: Pelvic organ prolapse quantification, COLD: Chronic obstructive lung disease

Table 2. Lower urinary tract symptom bother, quality of life and sexual dysfunction in patients with nocturnal enuresis

Fullfilled Questionnaires (n)	Scores (median, min-max)
UDI-6 (71)	55.5 (0,00-100)
Irritative subscale	83.3 (0,00-100)
Stress subscale	50 (0,00-100)
Obstructive subscale	16.7(0,00-100)
IIQ-7 (69)	42.9 (0-100)
OAB-V8 (56)	21.5 (3-40)
WAGNER (60)	45 (0-84)
PISQ-12 (34)	25 (12-42)

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