

NOCTURNAL ENURESIS IN ADULTS; URODYNAMIC FINDINGS IN 78 PATIENTS

Hypothesis / aims of study

Nocturnal enuresis (NE) is a highly bothersome and poorly understood symptom, representing an area of considerable need for the patients affected. "Bedwetting" is a rare but extremely bothersome problem. The lack of standardised definition, and poor insight into underlying mechanisms, means management is often difficult and achieves poor outcomes. NE can be primary (life-long) or secondary (arising after a period without bedwetting of at least one year). It can also be monosymptomatic or polysymptomatic (arising in conjunction with other symptoms). Secondary NE has been associated with chronic urinary retention in men, and with neurological disease. We surveyed records of adults reporting NE when presenting for urodynamic testing, in order to characterise specific risk factors and associations.

Study design, materials and methods

Adults (age >17) attending a single tertiary referral centre underwent a comprehensive standardised evaluation, including a complete history, pelvic examination and urinalysis to exclude urinary infection. Urodynamic testing was done in accordance with the recommendations of the International Continence Society (ICS) [1]. Records of patients reporting bedwetting whilst asleep were evaluated. Patients were categorized into primary or secondary. The latter were subdivided into those with overactive bladder (OAB) and those without, according to ICS definitions [2]. Post void residual (PVR) was considered significant if greater than 150ml.

Results

Between January 2010 to Dec 2011, the database had information for 4048 patients. A total of 78 adults with NE (60% women) were identified (Table 1). Of the women, 38% had previously undergone a major gynaecological operation. 13 women reporting secondary NE with OAB symptoms had previously undergone an abdominal hysterectomy.

Table 1: Patients	Number (M/F)	Mean age (range)	Significant PVR (uroflowmetry)	Neurological disease	Antidepressants
Primary NE	5 (2/3)	46.8 (35-61)	0	2	1
Secondary NE with OAB	58 (21/37)	53.7 (17-89)	7	7	17
Secondary without OAB	15 (8/7)	54.6 (28-77)	1	4	3
TOTAL	78 (31/47)	52.6 (17-89)	8	13	21

Frequency volume chart information (FVC; Table 2) was available in 45 cases (14 men and 31 women). Mean daytime frequency was 7.9 in men and 9.8 in women. Mean nocturia episodes were 3 in men compared to 2.2 in women. Nocturia was seen in 84.4% cases. 86% of men and 84% of women had one or more episodes of nocturia. 58% of women with nocturia and nocturnal enuresis had OAB symptoms.

Urodynamic results of the 78 patients are given in Table 3. DO was noted as the sole diagnosis in 46% of cases, and as a component of mixed urinary incontinence in another 23%. 52% of people with OAB symptoms had DO, and another 22% of cases with OAB had mixed urinary incontinence.

Table 2: FVC data	Number (M/F)	Mean day/ night frequency (M)	Mean day/ night frequency (F)	≥ 1 nocturia episodes (M/ F)
Primary NE	2 (0/2)	NA/ NA	8.5/ 3.0	0/2
Secondary NE with OAB	44 (21/23)	8/ 3.1	10.3/ 2.3	6/19
Secondary without OAB	13 (7/6)	7.7/ 2.8	8.3/ 1.7	6/5
TOTAL	45 (14/31)	7.9/ 3.0	9.8/ 2.2	86%/84%

Table 3: Urodynamics	Significant PVR	No Incontinence	USI*	DO**	MUI***
Primary NE	0	1	0	4	0
Secondary NE with OAB	5	11	4	30	13
Secondary without OAB	1	3	5	2	5
TOTAL	6	15 (19%)	9 (12%)	36 (46%)	18 (23%)

* USI: Urodynamic stress incontinence; ** DO: Detrusor overactivity; *** MUI: Mixed urinary incontinence.

Interpretation of results

The ICS standardisation of lower urinary tract terminology defines enuresis in the same terms as incontinence (“any involuntary loss of urine”), and uses “nocturnal” as a qualifier indicating incontinence during sleep [2]. However, this does not appear to constitute a good basis for evaluating patients affected. Many patients with NE do not have symptoms or urodynamic findings of incontinence, and a standardised definition which better categorises the symptom is desirable. There was a high prevalence of OAB in adults with NE, and this was also reflected in a high prevalence of DO. Nocturia was highly prevalent, including in people without OAB. For those patients with NE and nocturia, it is not clear why any given episode should fail to wake the patient and cause bedwetting; differing lower urinary tract mechanisms underlying the two symptoms cannot be excluded. A subgroup of people with NE and no nocturia was apparent (14% of male NE patients, 16% of female). The number of primary enuretic patients was low, but the explanation for this is not clear; it may reflect a low prevalence, or a failure of affected patients to present in adulthood. Significant PVR was a rare occurrence, and signifies that chronic urinary retention is not a common factor in secondary adult NE.

Concluding message

Secondary adult NE is rarely monosymptomatic; it usually presents with OAB or nocturia. Significant PVR was not a common feature.

References

1. 1 Abrams, P., et al., The standardisation of terminology of lower urinary tract function: report from the Standardisation Subcommittee of the International Continence Society. *Neurourol Urodyn*, 2002. 21(2): p. 167-78.
2. 2 Schafer, W., et al., Good urodynamic practices: uroflowmetry, filling cystometry, and pressure-flow studies. *Neurourol Urodyn*, 2002. 21(3): p. 261-74.

Disclosures

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