Should Nocturia Not Be Called a Lower Urinary Tract Symptom?

Marcus J. Drake

School of Clinical Sciences, University of Bristol, Bristol, UK

Modern-day urology benefits from a carefully developed approach to individuals presenting with common urinary symptoms, categorising them as lower urinary tract symptoms (LUTS) and subcategorising them into whether the storage or voiding phase is affected [1]. Storage LUTS include urgency, nocturia, increased daytime frequency, and incontinence. Voiding LUTS include poor stream and hesitancy, which may be associated with postmicturition LUTS (postmicturition dribble and sensation of incomplete emptying). This classification allows for a systematic approach, making it easy to cover all aspects and identify which symptoms are genuinely causing bother to the presenting patient. The terminology is also careful to avoid prejudgment of the underlying mechanism. For example, describing symptoms as voiding LUTS rather than obstructive symptoms avoids the presumption that bladder outlet obstruction (BOO) is the cause. Since detrusor underactivity is common and leads to symptoms that cannot be distinguished from those caused by BOO on clinical grounds alone, the acceptance that voiding LUTS is now the professional standard [2] represents significant progress.

The widespread acceptance of the LUTS terminology means that nocturia is clearly associated with lower urinary tract problems in the minds of urologists. This link also extends to primary-care and care-of-the-elderly physicians, and many others. Furthermore, nocturia is part of the definition of overactive bladder syndrome (which is characterised by urinary urgency, with or without urgency urinary incontinence, usually with increased daytime frequency and nocturia, if there is no proven infection or other obvious pathology [1,3]). However, the widely recognised placement of nocturia into the storage LUTS category should not cloud the fact that this symptom actually occurs more often as a consequence of processes unrelated to lower urinary tract dysfunction (LUTD).

Most cases of nocturia probably reflect wider health or behavioural issues unrelated to LUTD [4]. Urine production reflects homeostatic requirements to achieve water and salt balance. In general, daytime and nighttime voiding frequency are determined by the relative balance of urine volumes and lower urinary tract reservoir function, moderated by behavioural and psychological factors. Even a modest degree of variance in any facet increases the likelihood of nocturia. The simplest means to ascertain the likely factors in a patient is to ask the individual to complete a frequency volume chart or bladder diary [5], an under-utilised evaluation that is actually extremely easy to obtain, provided it is explained to the patient how profoundly the findings will influence safe selection of treatment.

In this issue of European Urology, Goessaert and colleagues [6] describe a remarkable study in which they undertook comprehensive testing of multiple parameters relevant to salt and water handling at regular intervals during the day and at night. The findings show circadian variation in salt and water handling, and alterations in symptomatic patients. Many important conclusions can be extrapolated from the results. For example, expression of nocturia due to nocturnal polyuria can reflect mechanisms unrelated to LUTD and that should not be managed with LUTD therapy. In addition, that the medical profession is not currently well placed to offer effective screening and therapy for most patients with nocturia.

Health care professionals need to consider all medical aspects, and they should reflect on whether nocturia reflects issues of water and/or salt handling, LUTD, or both (Fig. 1). In practical terms, this requires a focus on whether the nocturia is an isolated symptom, whether LUTS are present, what medical conditions are present, and what the bladder diary reveals. Some likely scenarios are as follows:

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* Bristol Urological Institute, 3rd Floor Learning & Research Building, Southmead Hospital, Bristol BS10 5NB, UK. Tel. +44 117 9505050; Fax: +44 117 4149474.
E-mail address: marcus.drake@bristol.ac.uk.
A patient with a known cardiovascular, renal, endocrine, respiratory, or biochemical abnormality presenting with nocturia as a sole symptom. The bladder diary may identify global or nocturnal polyuria. In such patients, assessment should focus on the evaluation of potential systemic causes.

A patient presenting with nocturia as a sole symptom who does not have a known medical condition. Alongside conventional urologic assessment, such patients should be evaluated to decide if an undiagnosed condition might be present, and the presence of global or nocturnal polyuria is potentially strongly indicative.

Any patient presenting with LUTS who is found to have nocturia.

(i) The possibility of a known or previously undiagnosed medical condition should be considered in all patients, especially when the bladder diary identifies global or nocturnal polyuria. Many will have two problems: both LUTD and a medical factor affecting urine output. If so, treating the LUTD alone will not fully resolve the nocturia, and actually may have a minimal effect.

(ii) If a patient has predominantly storage LUTS that first became evident at a similar time to the nocturia, and with a small voided volume for nocturnal voiding, then it is reasonable to attribute the nocturia to a probable LUTS.

Accordingly, assessment of nocturia must include consideration of medical and behavioural factors influencing urine production. Where several LUTS are present, nocturia must not be presumed to result from LUTD, since coexisting pathologies commonly occur, especially in older individuals. The article by Goessaert and colleagues [6] is a suitable indicator of how it might be valuable to improve our approaches to screening for systemic influences. Their experimental approach is clearly a major undertaking for the study subjects, and hence impractical for adoption in everyday practice. Nonetheless, it forms an excellent basis for justifying development of a feasible and pragmatic approach in the future. An intriguing aspect is that nocturnal polyuria does not necessarily lead to nocturia [7], potentially leading to another patient cohort for consideration.

Thus, it is not appropriate for health care professionals to regard nocturia solely as a LUTS, and instigation of treatment for a presumed LUTD when nocturia is a main symptom is potentially dangerous if full consideration is not given to wider potential factors. Nocturia is a common problem, and since LUTD is directly causative in a minority of cases, perhaps it should more appropriately be termed a systemic symptom [4] rather than a LUTS.

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References


