



## PRACTICE

## 10-MINUTE CONSULTATION

## Lower urinary tract symptoms in an older man

Maria Vedanayagam *urology specialist registrar*<sup>1</sup>, Amit Kumar *general practitioner*<sup>2</sup>, Sanjeev Madaan *consultant urological surgeon*<sup>1</sup>

<sup>1</sup>Darent Valley Hospital, Dartford DA2 8DA, UK; <sup>2</sup>White Horse Surgery, Northfleet, Gravesend DA11 8BZ, UK

A 65 year old man comes to see you with problems urinating. He feels the need to pass urine often, and it takes a long time to void when he does.

Lower urinary tract symptoms in men are common and increase with age.<sup>1</sup> There is an estimated prevalence of >50% in men over 50 years old.<sup>2</sup> Between the ages of 40 and 79 years, the prevalence of moderate to severe symptoms increases by 9.8% per decade.<sup>3</sup> There is also a strong association of lower urinary tract symptoms with metabolic syndrome (including obesity, diabetes, and hypertension).<sup>4,5</sup>

Lower urinary tract symptoms in men are most commonly due to benign prostatic enlargement, which can cause bladder outflow obstruction.<sup>6,7</sup> However, not all men with benign prostatic enlargement will have bothersome symptoms.<sup>6</sup> Lower urinary tract symptoms can interfere with general wellbeing, sleep, and sexual activity. They are an independent risk factor for sexual dysfunction in men over the age of 50 years.<sup>2</sup> Some patients who seek medical attention may be worried about prostate cancer.

### What you should cover

Ask the patient to describe his symptoms. Classify them into storage, voiding, and post-micturition symptoms (box 1).

Ask the patient if he has noticed a slow urine flow, if it takes him longer to start micturition, or if he feels the need to strain to empty his bladder. Voiding symptoms are thought to result from an obstructive process, commonly benign prostatic enlargement.

Voiding symptoms may also be a result of a urethral stricture, meatal stenosis, tight phimosis of the foreskin or detrusor hypocontractility.<sup>6,8</sup>

Isolated storage symptoms are commonly due to an overactive bladder. Ask the patient if he experiences a sudden urge to pass urine, which may be associated with urine leak if he is unable to void immediately. This is a predominant symptom of overactive bladder.<sup>8,9</sup>

Mixed voiding and storage symptoms can be secondary to bladder outlet obstruction, most commonly due to benign prostatic enlargement.<sup>10</sup> Post-micturition dribble is a sign of urine in the bulbar urethra that is not fully expelled.<sup>8</sup>

Ask about symptom duration; a sudden change may indicate bladder pathology such as a urinary tract infection or bladder malignancy.

The patient's medical history or medications may suggest an alternative cause—such as heart failure, diabetes, or the effect of diuretics—that may be contributing to storage lower urinary tract symptoms such as nocturia.<sup>1,2</sup>

Consider a brief sexual history if the patient has symptoms of dysuria or penile discharge to assess the risk for a sexually transmitted infection, which can also present with lower urinary tract symptoms.

Find out what has prompted the patient to seek advice at this stage. For example, is he concerned about malignancy, poor sleep due to nocturia, or sexual function? The information will help you to formulate an appropriate management plan.

### What you should do

#### Examination

- Offer to examine the prostate via a digital rectal examination and note the size and contour of the prostate. An enlarged prostate is >30 g (a 30 g prostate is approximately the size of a golf ball).
- A genital examination can exclude meatal stenosis or phimosis.
- Examine the abdomen for distension, a palpable bladder or suprapubic dullness on percussion, which may suggest urinary retention.
- If there is clinical suspicion of an underlying neurological condition, perform a focused neurological examination.

**What you need to know**

- Lower urinary tract symptoms in men are common and increase with age
- For bothersome urine voiding symptoms secondary to suspected benign prostatic enlargement, trial of an  $\alpha$  blocker or 5 $\alpha$ -reductase inhibitor, or both
- For bothersome urine storage symptoms, trial an anticholinergic or  $\beta_3$  agonist

**Box 1: Classification of lower urinary tract symptoms***Voiding*

- Poor stream
- Intermittent stream
- Hesitancy
- Straining to void
- Terminal dribbling

*Storage*

- Frequency
- Nocturia
- Urgency
- Urge incontinence

*Post-micturition*

- Post-micturition dribbling
- Incomplete emptying

- In patients with storage symptoms of frequency and nocturia, the presence of peripheral oedema may suggest a cardiac cause.

**Investigations**

Urine analysis may reveal nitrites and leucocytes suggestive of infection, and a mid-stream urine sample should be sent for culture. The presence of glucose may suggest diabetes, and blood may be a sign of infection or malignancy. In the case of persistent non-visible haematuria, a urological referral is recommended.

Consider a patient diary of fluid and caffeine intake to identify triggers of an overactive bladder. A frequency voiding chart can be used for predominantly storage symptoms or nocturia.<sup>10 11</sup>

The National Institute for Health and Care Excellence (NICE) recommends offering patients information, advice, and time to decide whether they wish to have prostate specific antigen (PSA) testing if they have any of the following.<sup>11</sup>

- Lower urinary tract symptoms suggestive of benign prostatic enlargement
- Abnormal digital rectal examination suggestive of prostate cancer
- The patient is concerned about prostate cancer.

Prostate specific antigen (PSA) is a predictor of prostate growth and clinical progression of benign prostatic hyperplasia.<sup>12 13</sup> It is used as a marker of prostate cancer, and an age-specific elevated PSA level in the absence of a urinary tract infection may indicate underlying prostate cancer. The presence of weight loss or new onset bony pain with an elevated PSA level or abnormal digital rectal examination should raise suspicion of advanced prostate cancer.

**Management**

Offer men with bothersome lower urinary tract symptoms an assessment using a validated symptom score such as the international prostate symptom score (IPSS). This is useful to

assess a change in symptoms.<sup>11</sup> Offer lifestyle and fluid modification advice, including abstinence from or reduction in caffeine intake. Other management is guided by the type and severity of symptoms as well as estimated prostate size (summarised in table 1↓).

After starting treatment for benign prostatic enlargement or overactive bladder, review the patient after four to six weeks, and then every 6-12 months to assess drug side effects and continued efficacy.<sup>11</sup>

Box 2 lists the situations when specialist referral is warranted.

Competing interests: We have read and understood BMJ policy on declaration of interests and have no relevant interests to declare.

Provenance and peer review: Not commissioned; externally peer reviewed.

- 1 Coyne KS, Sexton CC, Thompson CL, et al. The prevalence of lower urinary tract symptoms (LUTS) in the USA, the UK and Sweden: results from the Epidemiology of LUTS (EpiLUTS) study. *BJU Int* 2009;357:352-60. doi:10.1111/j.1464-410X.2009.08427.x pmid:19281467.
- 2 Rosen R, Altwein J, Boyle P, et al. Lower urinary tract symptoms and male sexual dysfunction: the multinational survey of the aging male (MSAM-7). *Eur Urol* 2003;357:637-49. doi:10.1016/j.eururo.2003.08.015 pmid:14644114.
- 3 Boyle P, Robertson C, Mazzetta C, et al. UrEpiK Study Group. The prevalence of lower urinary tract symptoms in men and women in four centres. The UrEpiK study. *BJU Int* 2003;357:409-14. doi:10.1046/j.1464-410X.2003.04369.x pmid:12930430.
- 4 Hammarsten J, Peeker R. Urological aspects of the metabolic syndrome. *Nat Rev Urol* 2011;357:483-94. doi:10.1038/nrurol.2011.112 pmid:21811224.
- 5 Parsons JK. Modifiable risk factors for benign prostatic hyperplasia and lower urinary tract symptoms: new approaches to old problems. *J Urol* 2007;357:395-401. doi:10.1016/j.juro.2007.03.103 pmid:17561143.
- 6 Speakman MJ. Lower urinary tract symptoms suggestive of benign prostatic hyperplasia (LUTS/BPH): more than treating symptoms? *Eur Urol Suppl* 2008;357:680-9doi:10.1016/j.eursup.2008.08.003.
- 7 McConnell JD, Roehrborn CG, Bautista OM, et al. Medical Therapy of Prostatic Symptoms (MTOPS) Research Group. The long-term effect of doxazosin, finasteride, and combination therapy on the clinical progression of benign prostatic hyperplasia. *N Engl J Med* 2003;357:2387-98. doi:10.1056/NEJMoa030656 pmid:14681504.
- 8 Rees J, Bultitude M, Challacombe B. The management of lower urinary tract symptoms in men. *BMJ* 2014;357:g3861. doi:10.1136/bmj.g3861 pmid:24963071.
- 9 Gravas S, Bach T, Bachmann A, et al. EAU guidelines for treatment of non-neurogenic male lower urinary tract symptoms. 2016. <https://uroweb.org/guideline/treatment-of-non-neurogenic-male-luts/>.
- 10 Gravas S, Bach T, Bachmann A, et al. EAU guidelines on non-neurogenic male LUTS including benign prostatic obstruction. 2016. <https://uroweb.org/guideline/treatment-of-non-neurogenic-male-luts/?type=pocket-guidelines>.

**Box 2: When to refer patients to the urology department**

- Failure of medical treatment (after two visits to review symptoms and medication)
- Severe lower urinary tract symptoms (IPSS  $\geq 20$ )
- Abnormal digital rectal examination suggestive of prostate cancer
- Elevated age-specific PSA
- Recurrent urinary tract infection
- Persistent non-visible or any visible haematuria
- Urinary retention (palpable bladder on examination)

IPSS = international prostate symptom score. PSA = prostate specific antigen

**Education into practice**

- Do you discuss with patients the side effects of commonly used medications for benign prostatic enlargement and overactive bladder?

**How patients were involved in the creation of this article**

Patient involvement allowed us to clarify terms that were unclear and provide us with the patient's perspective of why medical attention is sought for lower urinary tract symptoms

- 11 National Institute for Health and Care Excellence. Lower urinary tract symptoms in men: management (clinical guideline 97). 2015. [www.nice.org.uk/guidance/CG97](http://www.nice.org.uk/guidance/CG97).
- 12 Djavan B, Fong YK, Harik M, et al. Longitudinal study of men with mild symptoms of bladder outlet obstruction treated with watchful waiting for four years. *Urology* 2004;357:1144-8. doi:10.1016/j.urology.2004.08.049 pmid:15596187.
- 13 Roehrborn CG, McConnell JD, Lieber M, et al. PLESS Study Group. Serum prostate-specific antigen concentration is a powerful predictor of acute urinary retention and need for surgery in men with clinical benign prostatic hyperplasia. *Urology* 1999;357:473-80. doi:10.1016/S0090-4295(98)00654-2 pmid:10096369.
- 14 McConnell JD, Bruskewitz R, Walsh P, et al. Finasteride Long-Term Efficacy and Safety Study Group. The effect of finasteride on the risk of acute urinary retention and the need

for surgical treatment among men with benign prostatic hyperplasia. *N Engl J Med* 1998;357:557-63. doi:10.1056/NEJM199802263380901 pmid:9475762.

- 15 BNF British National Formulary. Urinary incontinence. [www.evidence.nhs.uk/formulary/bnf/current/7-obstetrics-gynaecology-and-urinary-tract-disorders/74-drugs-for-genito-urinary-disorders/742-drugs-for-urinary-frequency-enuresis-and-incontinence/urinary-incontinence#PHP5074](http://www.evidence.nhs.uk/formulary/bnf/current/7-obstetrics-gynaecology-and-urinary-tract-disorders/74-drugs-for-genito-urinary-disorders/742-drugs-for-urinary-frequency-enuresis-and-incontinence/urinary-incontinence#PHP5074).

**Accepted: 16 03 2017**

Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to <http://group.bmj.com/group/rights-licensing/permissions>

## Table

**Table 1 | Initial management approach to lower urinary tract symptoms**

Symptoms and signs	Treatment	Side effects of medication
Moderate to severe LUTS (IPSS >7), normal size prostate	$\alpha$ blocker (alfuzosin, doxazosin, tamsulosin, or terazosin)	Reduced ejaculation or anejaculation Postural hypotension <sup>10</sup>
Mild LUTS (IPSS <8), enlarged prostate	5 $\alpha$ -reductase inhibitor (finasteride, dutasteride)	Reduced libido Erectile dysfunction <sup>14</sup>
Moderate to severe LUTS (IPSS >7), enlarged prostate	Combination of $\alpha$ blocker plus 5 $\alpha$ -reductase inhibitor	As above
Storage symptoms (suggestive of overactive bladder)	Anticholinergic (tolterodine, oxybutynin, darifenacin, solifenacin)	Dry eyes and mouth Constipation Confusion (especially in elderly patients) <sup>10 15</sup>
	$\beta_3$ agonist (mirabegron) if patient has already trialed an anticholinergic	Tachycardia

LUTS=lower urinary tract symptoms. IPSS=international prostate symptom score.