

A fatigued man with interrupted sleep and frequent need for urination

Commentary by **ANDREW BROOKS** FRACS

Urinary frequency is a common urological symptom that requires further investigation, particularly if it is affecting a patient's quality of life.



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Case scenario

Ben is a 56-year-old man who presents with fatigue. He has been experiencing interrupted sleep and needs to get up several times at night to urinate. He thinks he noticed some blood in his urine on one occasion. During the day he also needs to go to the toilet frequently to pass water, especially before meetings and leaving the office for home. He is currently taking ramipril 2.5 mg daily to control his mild hypertension. Ben's mother has mature-onset diabetes and his father died last year at the age of 82 years from postsurgical complications after a transurethral resection.

What is your diagnosis for Ben?

Commentary

Ben has a number of urological symptoms. These need to be grouped into symptom complexes that suggest either a number of problems or a single diagnosis.

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Macroscopic haematuria has a significant association with serious urological disease, and upper tract imaging, urine cytology and cystoscopy are warranted. Cystoscopy is essential because imaging studies will not reveal serious disease such as small carcinomas or carcinoma *in situ* of the bladder. The most common cause of haematuria in a patient such as Ben would be bleeding from his prostate due to benign prostatic hyperplasia.

Ben has a symptom complex of lower urinary tract symptoms. This consists of daytime frequency and nocturia. The association between daytime and night-time frequency tends to exclude causes associated specifically with nocturia alone. Frequency of urination may be precipitated by:

- a sense of impending micturition associated with an overactive bladder
- bladder discomfort or pain related to inflammation
- high volumes of urine.

The degree to which these factors interfere with the patient's quality of life determines if any subsequent investigations or treatments are needed. One of the more common causes of frequency and urgency in male patients is bladder outlet obstruction. Questions should be asked about the patient's flow rate, perceived volume voided and associated symptoms such as dysuria.

Generally, urinary tract symptoms of frequency in a male patient should be considered as being due to:

- overactive bladder
- inflammation of the lower urinary tract
- high urine volume.

A diagnosis for Ben's symptoms is not immediately apparent but a systematic approach to diagnosis should reveal the problem.

In the first instance, Ben should have the following investigations, which are focused specifically on defining the presence of an underlying problem:

- midstream urine test to determine if inflammation or urinary tract infection are present
- urine cytology to identify the presence of cancer, but it may miss low-grade disease
- electrolytes, urea and creatinine levels measurement to check renal function
- fasting blood glucose level measurement to test for type 2 diabetes
- prostate specific antigen level measurement to define risk of prostatic carcinoma or suggest prostatic inflammation
- 24-hour fluid balance chart to define functional capacity and indicate if high voided volumes are the problem
- imaging studies such as computed tomography urogram, which is a specific intravenous contrast study of the urinary tract
- urinary flow study.

Ben could complete a standard questionnaire about his lower

urinary tract symptoms, which would give an International Prostate Symptom Score. This allows an assessment to be made of the effect his symptoms have on his quality of life and therefore the extent to which investigations and treatments may be offered.

These investigations can be completed and then reviewed at the second consultation.

If Ben's urinary tract symptoms are bothersome and his flow rate suggests bladder outflow obstruction then a trial of an alpha blocker is appropriate.

A urodynamic study correlates voiding pressure to flow rate, attempting to diagnose bladder outflow obstruction on the basis of a high-pressure low-flow pattern. This would be indicated if Ben does not respond to the alpha blocker and the voided volume chart did not suggest a high voided volume as a cause.

Ben will require cystoscopy to exclude significant lower urinary tract disease as a cause of his haematuria.

Conclusion

Ben's symptoms suggest bladder outflow obstruction and the development of frequency and nocturia due to the ensuing alteration in bladder wall compliance. His haematuria may be from a hyperplastic prostate gland although more significant causes would need to be excluded. MT

COMPETING INTERESTS: None.