CASE STUDY

A 64-Year-Old Man With Lower Urinary Tract Symptoms

Presentation

A 64-year-old white man presents for a dyslipidemia follow-up visit at his family medicine office. During the visit, the physician assistant (PA) examining him notices that he seems fatigued. The patient jokes about waking up too frequently at night to urinate, saying, "It sure stinks to get old." When questioned further, he reveals his symptoms as nocturia (~2×/night), frequent urges to urinate during the day, occasional leakage, and a weak urine stream with postmicturition dribbling. He reports no blood in the urine or bladder pain and he is not diabetic. The patient is married and reports no sexual dysfunction. After determining that he is adherent to atorvastatin 20 mg per day for mixed dyslipidemia and reviewing his lipid profile with him, this patient is evaluated for lower urinary tract symptoms (LUTS).

Physical Examination

- Height: 5 ft 8 in
- Waist: 37 in
- Weight: 201 lb
- Blood pressure: 132/82 mm Hg
- Digital rectal and prostate examination: normal
- Abdominal and genital examinations: normal

Laboratory Values

- Chemistry profile: blood sugar and renal function normal
- TC: 184 mg/dL
- HDL-C: 46 mg/dL
- LDL-C: 98 mg/dL
- TG: 198 mg/dL
- Non–HDL-C: 138 mg/dL

HDL-C = high-density lipoprotein cholesterol; LDL-C = low-density lipoprotein cholesterol; TC = total cholesterol; TG = triglycerides.

Urologic Laboratory Values

- Prostate-specific antigen (PSA): 0.9 ng/mL
- Urinalysis: normal

Clinical Decision Point

Based on the information provided thus far, which of the following should be part of the clinical plan of action?

- Refer patient to a urologist for further workup and analysis
- Order additional laboratory tests
- Begin medical treatment for LUTS
- Gather more information from the patient, assess level of bother

Comment

The treatment of male patients with LUTS is often considered to be in the urologist's domain. However, in most cases LUTS can be identified and treated by the primary care provider, including nurse practitioners and PAs. In fact, surveys have shown that LUTS patients are quite satisfied with their treatment in nurse-led clinics. In one recent study, a majority of patients expressed satisfaction or extreme satisfaction with multiple aspects of their clinical experience at a nurse-led benign prostatic hypertrophy/hyperplasia (BPH) clinic, including quality of assessment procedures, clarity of explanations received, and medication provided; 100% of patients in the survey were satisfied or extremely satisfied with their overall experience.[1]

At this point in the patient case, referral to a urologist is not warranted. Table 1 describes circumstances in which referral of a patient with LUTS to a specialist would be appropriate.[2,3]

The patient's laboratory values are unremarkable and no additional tests are required at this time. In cases where the PSA is elevated or there are abnormalities upon digital prostate exam, however, it is important to rule out possible malignancy.

Medical treatment for his symptoms is a likely path for this patient; however, the level of bother that he experiences needs to be determined. After identifying LUTS, the clinician must assess bother before proceeding.

What Is LUTS?

The presentation of LUTS in men is often mixed. LUTS may be divided into 3 basic categories[1]:

- *Storage symptoms:* frequency, nocturia, urgency, urinary incontinence, stress incontinence, urge incontinence
- *Voiding symptoms:* slow stream, splitting or spraying, intermittent stream, hesitance, straining
- *Postmicturition symptoms:* feeling of incomplete emptying, postmicturition dribble

Storage, or irritative, symptoms are traditionally associated with overactive bladder (OAB), while voiding and postmicturition symptoms are traditionally associated with obstruction from BPH. Bladder obstruction due to prostate enlargement may also cause or exacerbate bladder irritation.[2] Figure 1 demonstrates the pathophysiology of these conditions.[3]

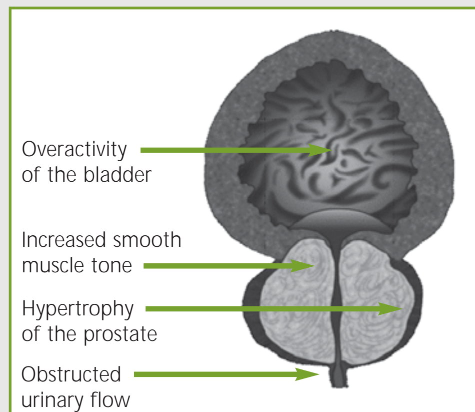

Figure 1. Pathophysiology of LUTS. Adapted from Gjertson CK et al.[3]

References

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Decision: Continue workup of patient and identify level of bother due to LUTS.

Identifying and Assessing LUTS Bother—Simple and Practical

Identifying LUTS is the first and ultimately the most important challenge for the clinician. Few patients, even those with significant bother, plan to discuss urinary symptoms with a healthcare practitioner. The simple screening question found in Table 2 can aid in the initial diagnosis of LUTS as well as assess the level of bother the patient is experiencing. The initial assessment of LUTS includes a physical exam, history of symptoms, and laboratory analysis. LUTS should not be ruled out if the prostate does not feel enlarged; not all symptomatic patients have enlarged prostates.[4] After ruling out other diagnoses and determining that a urologist consultation is not warranted, the clinician's next step is to assess bother from LUTS symptoms.

Formal validated instruments, such as the American Urological Association Symptom Index and the International Prostate Symptom Score, may be used for this assessment, but a simple screening question can also provide adequate information to determine next steps (Table 2).

Since the practice has a heavy appointment schedule the day of the patient's visit, the PA uses the simple LUTS Screening and Evaluation questions. The patient says his symptoms are certainly bothersome enough that he would like to start taking medication, if the PA thinks it will help.

Table 1. Referral for LUTS to a Specialist

- Uncertain diagnosis
- Microscopic or gross hematuria
- Suspected bladder or prostate carcinoma
- Recurrent urinary tract infections
- Symptoms refractory to medical therapy
- Acute or chronic urinary retention
- Neurogenic bladder dysfunction
- Previous genitourinary surgery
- Abnormal digital rectal examination
- Elevated serum PSA level
- Renal insufficiency

Rosenberg MT et al[2]; Naslund MJ et al.[3]

Table 2. LUTS Screening and Evaluation Questions

To screen for presence of LUTS	*"As a male, you are at risk for an enlarged prostate."* Symptoms include: ➤ Difficulty starting urination ➤ Weak urinary stream or dribbling ➤ Waking at night to urinate ➤ Frequent urge to urinate *" If these symptoms bother you and you want help, let me know because I can help"*
To determine level of bother from LUTS/ whether to initiate medical therapy	*"Are your urinary symptoms bothering you enough that you would be willing to take medication every day to give you relief?"*

LUTS/BPH

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Clinical Decision Point

At this point, which of the following options would you consider for this patient?

- Watchful waiting, teach behavioral modification
- Behavioral modification alone
- A uroselective α_1-adrenergic blocker, teach behavioral modification
- A 5α-reductase inhibitor (5ARI), teach behavioral modification

Comment

The patient has indicated he is having storage, voiding, and postmicturition symptoms and that his symptoms bother him enough that he is willing to take medication every day; thus, watchful waiting would not be the recommended approach. When a patient with LUTS does not experience enough bother to warrant medical therapy, watchful waiting is appropriate.

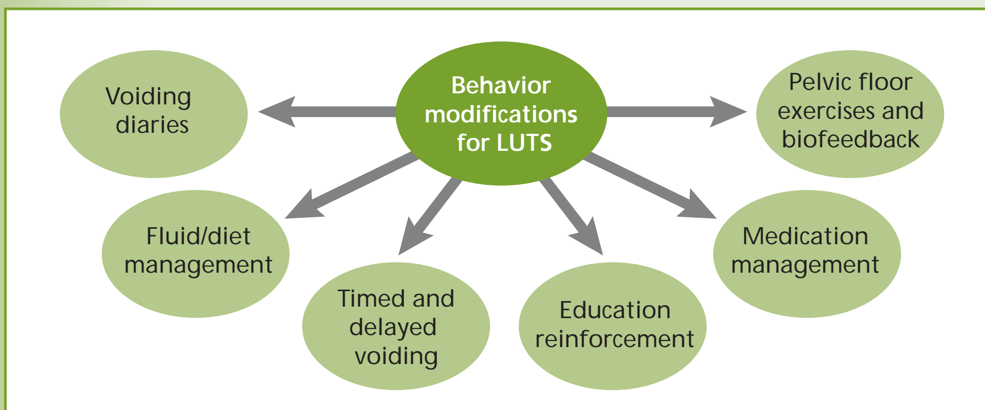

Figure 2. **Recommended behavior modifications.** Adapted from Wein AJ.[5]

LUTS in Primary Care

LUTS is highly prevalent in the primary care setting, although the condition has been widely underdiagnosed. In a recent study of male patients >50 years of age seen in the primary care setting[1]:

- 42% experienced moderate or severe LUTS
- 29% had moderate or severe LUTS and either an enlarged prostate or a PSA >1.5 ng/mL
  - In this category, only 33% intended to discuss their symptoms with their primary care clinician

These data suggest that for every 175 male patients >50 years of age in the primary care setting, nearly 75 are experiencing bothersome urinary symptoms. Only a few of these, however, will proactively discuss this bother with their clinician. The takeaway message is clear—if a clinician does not *proactively* ask about LUTS, many patients will suffer in silence.

Reference

1. Naslund MJ, Gilsenan AW, Midkiff KD, Bown A, Wolford ET, Wang J. Prevalence of lower urinary tract symptoms and prostate enlargement in the primary care setting. *Int J Clin Pract.* 2007;61(9):1437-1445.

The patient should be encouraged to follow up regularly so that he can discuss the treatment options that are available should this level of bother increase to a point where medical therapy is indicated. All patients with bothersome LUTS, however, might benefit from behavioral modification as part of their treatment plan (Figure 2).[5]

Rosenberg and colleagues[2] have developed a specific treatment algorithm for identifying and treating male LUTS in the primary care setting. This expert panel recommends provisional empiric therapy with an α_1-adrenergic blocker for initial medical treatment for bothersome male LUTS. α_1-Adrenergic blockers are well tolerated and improve symptoms by 30% to 40% in approximately 70% of patients. Nonresponders can be identified quickly and started on other therapies. Unlike α_1-adrenergic blockers, 5ARIs have a slow onset of action, often not demonstrating benefit until 6 months after initiation of therapy (Table 3).[4,6-9] Based on his symptoms and level of bother, the patient in this case should be started on medical therapy and reevaluated in 2 to 4 weeks to assess treatment success and patient satisfaction.

Table 3. Pharmacotherapeutic Options for BPH/LUTS

α_1-Adrenergic Blockers	5α-Reductase Inhibitors
Properties	
➤ Relax prostate and bladder smooth muscle ➤ Do not alter prostate volume or growth ➤ Do not alter odds of acute urinary retention (AUR) or BPH-related surgery	➤ Inhibit conversion of testosterone to dihydrotestosterone ➤ Limit prostate growth ➤ Reduce prostate volume ➤ Reduce risk of AUR and BPH-related surgery
Included in Class	
➤ Uroselective (alfuzosin SR, tamsulosin) ➤ Nonuroselective (doxazosin, terazosin)	➤ Dutasteride ➤ Finasteride
Onset of Action	
➤ Days to weeks	➤ Usually months
Efficacy	
➤ Improve flow rate ➤ No significant differences within class	➤ May slow disease progression ➤ Some potential differences within class ➤ Effective for men with evidence of prostate enlargement
Safety	
➤ Uroselective better tolerated than nonselective ➤ Most common class side effects: dizziness, orthostatic hypotension, sexual effects	➤ No significant differences within class ➤ Most common class side effects: decreased libido, impotence, ejaculation disorder

AUA Practice Guidelines Committee[4]; Patel AK et al[6]; Roehrborn CG[7]; Nickel JC[8]; Djavan B et al.[9]

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Decision: Initiate therapy with uroselective α_1-adrenergic blocker and teach behavior modifications.

The PA prescribes an α_1-adrenergic blocker, explaining that the patient should not expect improvement right away, but within the next 2 weeks. The PA describes the potential side effects with this drug, including dizziness and ejaculatory dysfunction and states that this "is not going to make the symptoms completely disappear, but it should significantly improve your quality of life." Finally, the PA instructs the patient on how to perform pelvic floor exercises and reviews fluid and diet management with the patient. He is scheduled for a follow-up visit in 2 weeks.

Setting Expectations and Evaluating Response

No medication will make a 72-year-old patient feel like he is 25 again. Establishing realistic expectations with a patient and teaching him the meaning of "normal" are key discussion points when initiating therapy. Upon follow-up evaluation[2]:

- Evaluate the patient's level of adherence to therapy
- Assess individual symptom improvements or regression
- Assess patient satisfaction with therapy
- Consider, based on treatment response, whether there may be an irritative OAB component to a patient's LUTS that should be addressed in combination with BPH or in place of BPH
- Maintain or modify therapy as appropriate

Medical Treatment of LUTS: An Overview

The 2 classes of drugs commonly used to treat LUTS/BPH in men are α_1-adrenergic blockers and 5ARIs; both have been demonstrated effective alone or in combination, but they are not interchangeable (Table 3).[1-5] The rationale for therapy with α_1-adrenergic blockers postulates that symptoms of BPH are caused, at least in part, by contraction of prostatic smooth muscle, which leads to bladder outlet obstruction. Treatment with α_1-adrenergic blockers relieves smooth muscle tension in the prostate, urethra, and bladder neck, improving urine flow and decreasing outlet obstruction, thus relieving symptoms. However, α_1-adrenergic blockers do not affect the size of the prostate and, therefore, are not disease-modifying. Of the currently available α_1-adrenergic blockers, 2 are selective to receptors in the urogenital tract: tamsulosin and alfuzosin. These uroselective α_1-adrenergic blockers have more favorable side effect profiles than the others, and alfuzosin does not require titration. Tamsulosin has been demonstrated to be associated with a greater incidence of ejaculatory dysfunction than alfuzosin. The efficacies among the available products in this class are similar.[1,2]

The 5ARIs may reduce prostate volume and prevent progression of BPH and the development of acute urinary retention (AUR). They work by inhibiting production of dihydrotestosterone (DHT). In contrast to α_1-adrenergic blockers, 5ARIs may alter the course of the disease.[1,2] The 2 currently available 5ARIs have similar side effect profiles, but their activity and efficacy differ. Finasteride inhibits only type 2 5α-reductase, which is found primarily in genital tissue, whereas dutasteride also inhibits type 1 5α-reductase, which is expressed in the liver and skin as well as in the prostate.

2-Week Follow-Up Visit

At the 2-week follow-up visit, the patient reports that his nocturia has been reduced from 2×/night to 1×/night and there has been partial improvement in his stream and postmicturition dribble. The urge and frequency symptoms during the day are mostly unchanged, but he is experiencing no leakage. Overall he is pleased with the improvement, but he his sleep is still disturbed and he is uncomfortable during the day. He says, "I'm really happy the medication is working, but I wish it worked just a little bit better. I really don't like waking up at night, and I still get urges during the day."

Clinical Decision Point

At this point, you decide to:

- Stop the uroselective α_1-adrenergic blocker
- Initiate 5ARI therapy
- Evaluate for possible OAB
- Set follow-up appointment

Comment

The patient clearly has responded to the initial α_1-adrenergic blocker therapy. Although he is pleased with the results thus far, there is still residual bother to be addressed. Since the patient still reports storage symptoms, the clinician evaluates the patient for OAB, and then reinforces some of the behavioral changes previously recommended, such as refraining from drinking liquids at least 2 hours before going to sleep. Due to its demonstrated efficacy, stopping the α_1-adrenergic blocker would not be an option at this stage. The clinician instead initiates adjuvant therapy with a 5ARI. The clinician explains to the patient why combination therapy may provide more complete relief and advises the patient

This broad activity of dutasteride may translate into more complete suppression of DHT, which may result in certain enhanced efficacy measures.[4]

5ARIs may take up to 6 months to provide optimum results and may not be as appropriate as initial monotherapy for LUTS as the α_1-adrenergic blockers.[6] Some evidence, however, indicates that combination of a 5ARI and α_1-adrenergic blocker may provide better long-term benefit than either therapy alone. This was studied in the MTOPS trial, which showed that combination therapy was superior to either class for reducing LUTS and preventing BPH progression and demonstrated the long-term safety of combination treatment.[6]

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that it may take a commitment from him of up to 6 months before response to the combination therapy can be fully evaluated. The clinician reminds the patient again that the symptoms will not completely disappear; however, the goal of the combination treatment is to address the residual bother and improve his quality of life.

Decision: Add a 5ARI to α_1-adrenergic blocker and follow up in 3 to 6 months.

At his 3-month follow-up visit, the patient's nocturia has been reduced from 1×/night to about 3×/week and seems to occur if he has consumed liquids less than 2 hours before going to sleep. The clinician reminds him of this important behavioral change. The patient's stream is stronger, but he still experiences some postmicturition dribble. He experiences less urge and frequency throughout the day, but it is still present.

At the patient's 6-month follow-up visit, his nocturia is down to approximately 1×/week. His stream remains strong and the postmicturition dribble has improved. His daytime symptoms of urge and frequency seem to have improved as well. The patient is very satisfied with his treatment.

Clinical Pearls

- Proactively ask patients about urinary symptoms. Most men with bothersome LUTS do not plan on discussing them with their healthcare practitioner
- In most cases, LUTS/BPH can be managed effectively in the primary care setting
- Provisional treatment for BPH with a uroselective α_1-adrenergic blocker as initial therapy for LUTS was recommended in a recently published algorithm designed for primary care clinicians
- Encourage behavior modifications and adherence to therapy by setting realistic expectations of outcomes and educating patients about their condition and treatment

References

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