Benign Prostatic Hypertrophy

3 Paths to Relief

Bryan Donnelly, BSc, MSc, MCh, FRCSI, FRCSC

As presented at the University of Calgary's
28th Annual Family Practice Review (November 2003)

Benign prostatic hypertrophy (BPH) is used to indicate symptoms of voiding difficulty caused by an enlarged prostate. This condition affects at least 60% of men over 50.[1]

There are two components to the prostate enlargement that contribute to the symptom spectrum:

1. ***Static:*** The enlargement of the gland due to increased bulk of tissue. This enlargement causes a physical obstruction to the outflow channel.
2. ***Dynamic:*** Increased muscle tone in the bladder neck and prostatic urethra secondary to the enlargement of the prostate.

Bill's case

Bill, 62, presents complaining of nocturia. From your history, you note he also has increased urinary frequency and a little urgency, yet has trouble initiating the flow.

He is a little overweight, smokes one pack of cigarettes per day, and drinks five or six cups of coffee daily. He is not taking any medications. He has no prior urologic history.

On digital rectal exam, you note an enlarged, smooth, soft prostate.

For a followup on Bill, go to page 67.

What are the symptoms?

See Table 1 for a list of symptoms. In addition, note that overflow incontinence may present as nocturnal bedwetting. Hematuria may occur with dynamic enlargement, as the blood vessels in the prostatic urethra become dilated and distended and bleed frequently.

Symptoms are so gradual in onset that many men fail to notice them. Therefore, when taking a patient history, it is important to ask specific questions (*e.g., "Do you have to be careful not to pee on your shoes?"*).

Table 1

Symptoms of benign prostatic hypertrophy

Static enlargement

- Hesitancy
- Weak stream
- Incomplete emptying
- Frequency
- Nocturia
- Acute urinary retention

Dynamic enlargement

- Frequency
- Urgency
- Urgency incontinence
- Weak stream
- Nocturia

What exams should be done?

Physical exam should include abdominal palpation and percussion for a distended bladder. In elderly patients with overflow incontinence, the bladder will not be palpable and will only be detected by percussion or ultrasound.

A digital rectal exam is essential to palpate the size and consistency of the prostate, but also to allow for assessment of anal tone and sensation.

Evidence from recent major trials with BPH have shown the importance of prostate-specific antigen (PSA) in predicting outcome and selecting medical therapies. Because of this information, and also because of its value in detecting early prostate cancer, PSA measurements are recommended in men showing symptoms of BPH.

Dr. Donnelly is an assistant clinical professor, University of Calgary, and a staff urologist, Rockyview Hospital, Calgary Health Region, Calgary, Alberta.

Table 2

Problems caused by symptomatic benign prostatic hypertrophy

- Acute urinary retention
- BPH-related surgery
- Bladder overdistention and loss of bladder tone
- Obstructive renal failure
- Development of bladder calculi and hematuria

Urodynamic assessment is used only in select patients with mixed symptoms.

Cystoscopy is used for those patients with hematuria or who fail medical treatment.

Symptomatic BPH can result in many problems, affecting the patient's quality of life and having a negative impact on sexual function (Table 2).

What are the treatment options?

Treatment options fall into three levels:

1. **observation,**
2. **medical management, and**
3. **surgery.**

1. *Observation*

Men whose symptoms are mild, not causing enough bother to warrant any form of intervention, should be carefully observed.

2. *Medical management*

For patients whose symptoms are moderate to bothersome, medical intervention is warranted.

Table 3

Side-effects of alpha blockers used for benign prostatic hypertrophy

Alpha blocker	Side-effects
Doxazosin (Needs to be titrated over a period of time)	• Associated with a higher incidence of postural hypertension than uro-selective alpha blochers
Terazosin (Needs to be titrated over a period of time)	• Same as doxazosin
Tamsulosin	• Associated with a higher incidence of retrograde ejaculation
Alfuzosin	• Very few side-effects; may occasionally cause mild aesthenia

a. Alpha blockers

All drugs in this category have been shown to be equally effective in rapidly relieving obstructive symptoms. The difference between these medications relates to their specific side-effects (Table 3). While alpha blockers alleviate symptoms rapidly, they have no impact on the natural progression of BPH. With time, the prostate can continue to enlarge, resulting in a recurrence or exacerbation of symptoms.

Benign prostatic hypertrophy affects at least 60% of men over 50.

b. Alpha reductase inhibitors

These drugs (*e.g.*, finasteride, dutasteride) result in a gradual reduction in the size of the prostate. This reduction in size is maintained over subsequent years.

In contrast to alpha blockers, alpha reductase inhibitors directly impact disease progression. Used in combination, alpha blockers and alpha reductase inhibitors have been shown to significantly reduce acute urinary retention and the need for surgical intervention.

PSA has been shown to be a key factor in selecting which patients should be prescribed combination therapy. Patients with enlarged prostates whose PSA is > 3.5 are at the highest risk of suffering progression; these patients benefit most from combination therapy.

Alpha reductase inhibitors actually reduce PSA levels by approximately 50%. Therefore, when using PSA as a tool for early detection of prostate cancer, this alteration in PSA levels must be kept in mind.

3. *Surgery*

a. TURP

Surgey is used in cases of failed medical therapy, reluctance to take medication, or intractable retention. Transurethral resection of the prostate (TURP) is the standard procedure, yielding excellent results. It is a minor surgical procedure from a patient's point of view; it usually requires an overnight stay in hospital. The principal side-effect is retrograde ejaculation.

TURP is painless and safe. The tissue removed is from the central portion of the prostate; the residual peripheral tissue is where prostate cancer can develop. Therefore, it is important to continue following men who have

Take-home message

What are the symptoms of BPH?

Some symptoms include nocturia, frequency, urgency, weak stream, and incontinence.

What exams should be done?

- History: Ask very specific questions
- Physical: Abdominal palpation and percusssion, digital rectal exam
- Lab: PSA levels

What are the treatment options?

- Observation
- Medical management with alpha bockers, alpha reductase inhibitors, or a combination
- Surgery (TURP)

undergone TURP with annual digital rectal exam and PSA assessments.

b. Microwave treatment

Microwave treatment, the process by which the prostate tissue is denatured using high temperatures, is available in some Canadian centres. Using this procedure allows the tissue to shrink with time.

c. Laser resection

Laser resection is used in a few centres. The benefit of this procedure is that it can be used in patients taking anticoagulants. Dx

Reference

1. Roehrborn CG, et al: Chapter eight. In: Walsh PC, Vaughan D, Retik AB, et al (eds): Campbell's Urology. Eighth Edition. Elsevier Science, 2002. pp. 1297-1330.

Following up on Bill: A Q&A

1. Would you do a prostate-specific antigen (PSA) on this man?

Yes. It has been shown that PSA is an important factor in choosing combination therapy to treat benign prostatic hypertrophy (BPH). Furthermore, PSA should be measured in men of this age to aid in cancer detection.

2. Does his coffee consumption have any impact on the situation?

His irritative symptoms may be due to BPH, but are frequently caused by high coffee intake. Symptoms might be easily improved by reducing coffee consumption.

3. Would you recommend surgery?

Only if medical management fails or if the patient will not/cannot take medication.

4. Would you treat him with an alpha blocker?

Because his symptoms are bothering him enough to visit his doctor, an alpha blocker is the recommended first-line medical therapy. If the PSA is > 3.5, a 5-alpha-reductase inhibitor can be added.

5. Is a post-void dribble a symptom of BPH?

No. Post-void dribble is due to incomplete emptying of the urethra. It is not related to the prostate. Treatment involves teaching the patient to massage the urethra empty.