

Benign Prostatic Hyperplasia 2: The Case of Mr. Presley's Urinary Retention

Mr. Presley presents to the emergency department in urinary retention. You are expected to direct the evaluation, education, and management of this patient.



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LEARNING OBJECTIVES

1. Describe the natural history of Benign Prostatic Hyperplasia (BPH).
2. List the risk factors for acute urinary retention in a patient with BPH.
3. List the important components of the history and physical examination when evaluating a patient with BPH.
4. List the indications for medical and surgical treatment of BPH.
5. Identify initial management of acute urinary retention.
6. Describe the potential risks in initial treatment of a patient with urinary retention.
7. Identify when a patient with BPH should be referred to a urologist.



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Mr. Presley Presents to the Emergency Department –part 1

The screams of “treat me nice” could be heard all over the Emergency Department as a 68-year old brown-eyed handsome man was led to a room. He was gyrating his hips in the most unusual and offensive manner as he yells “I want to pee free.” The doctor approaches the room to find out what all the fuss is about. “There is a whole lot of shaking going on,” says Mr. Presley, “but I still have not been able to urinate for the last 18 hours.” He reported that his urinary flow has not been good for years, but about 24 hours ago, his stream was reduced to a dribble, causing his suede shoes to be ruined. For the last 18 hours, though, he has not been able to urinate at all and a strong pain has developed in his lower abdomen. Mr. Presley’s past medical history is notable for previous diagnoses of BPH, alcoholic hepatitis, and lumbar strain. He denies taking any medication or using any recreational drugs.



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Mr. Presley Presents to the Emergency Department –part 1

Physical examination reveals normal genitalia, a prostate which is 4 cm in breadth, smooth and non-tender with no nodules, and a distended bladder which is palpable half-way up to the umbilicus.

What are possible factors which might trigger acute urinary retention in a male?



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Mr. Presley Presents to the Emergency Department –part 1

All of the following can precipitate acute urinary retention:

- a. Prostatitis
- b. Narcotics
- c. diphenhydramine (Benadryl)
- d. pseudoephedrine (Sudafed)
- e. oxybutynin (Ditropan)
- f. Alcoholic drinking binge
- g. General or Spinal Anesthesia



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Mr. Presley Presents to the Emergency Department –part 1

A male with baseline prostatic obstruction (Benign Prostatic Hyperplasia or BPH) and/or reduced bladder contractility is at risk of having one of these factors push him over the edge into frank retention, by a variety of mechanisms:

- A. Prostatitis may increase bladder outlet resistance due to prostatic edema and swelling
- B. Narcotics may reduce bladder contractility
- C. Diphenhydramine (Benadryl) is an anti-histamine with significant anti-cholinergic effects which may reduce bladder contractility
- D. Pseudoephedrine (Sudafed) is a sympathomimetic which can stimulate alpha receptors in the prostate and thus increase resistance at the prostatic urethra



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Mr. Presley Presents to the Emergency Department –part 1

Continued...

- E. Oxybutynin (Ditropan) is a strong anti-cholinergic medication given to patients for the treatment of bladder spasms and over activity. Men should generally not be given this medication without consulting a urologist. Tolterodine (Detrol) is a similar medication. Other Overactive Bladder medications may also carry some risk.
- F. Alcohol ingestion can trigger urinary retention; the exact mechanism is not clear.
- G. General and particularly Spinal Anesthesia can paralyze the bladder which often results in post-op urinary retention.



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Mr. Presley Presents to the Emergency Department – part 2

While two nurses attempt to stop his pelvis from moving, the doctor inserts a Foley catheter amid rants of “don’t be cruel.” His bladder is drained of 700cc of clear yellow urine, much to Mr. Presley’s relief. “Thank you very much,” he exclaims. His creatinine level is measured at 1.4 mg/dl.

What is the most appropriate next step in his treatment?



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Mr. Presley Presents to the Emergency Department – part 2

Start an alpha-blocker and refer to a urologist for a voiding trial in 3-7 days. In the past, acute urinary retention alone was considered an indication for transurethral resection of the prostate (TURP). More recent data suggest that up to 50% of patients on treatment can successfully pass a voiding trial after an episode of acute retention, and thus avoid immediate surgery. Many urologists start an alpha-blocker at the time of initial catheterization in order to facilitate passage of the voiding trial. Many of these drugs require 72 hours to reach optimal levels and this also gives the bladder time to recover muscle contractility.



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Mr. Presley Presents to the Emergency Department – part 2

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While a TURP may ultimately be necessary, it is usually worth a trial of bladder decompression and alpha-blocker therapy to see if the patient can safely avoid immediate surgery. Placement of a suprapubic tube would provide no added benefit in the short run compared to urethral catheterization. Finasteride (Proscar) can take up to six months to work and thus would be of no assistance in this acute setting. All men in urinary retention should be referred to a urologist for follow-up. Checking serum creatinine in patients with urinary retention is important in order to rule-out serious obstructive uropathy. In this case, a level of 1.4 mg/dl is only mildly elevated and will likely drop to normal now that his bladder outlet obstruction has been relieved.



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Mr. Presley Presents to the Emergency Department – part 3

Just for fun, let's change the numbers a little. Same situation, but instead of just 700 cc in his bladder, Mr. Presley has 1,000 cc drained immediately with another 1,000 left in the bladder. After removing 1,000 cc, the ER nurse stops the drainage and asks if you want the Foley catheter clamped.

What should be your response?

The patient's creatinine level is elevated at 3.1 mg/dl.

What is the most appropriate next step in his treatment and what new problem is he at particular risk for?



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Mr. Presley Presents to the Emergency Department – part 3

There is no point in clamping the catheter. It was once thought this would prevent “bladder collapse” and other problems, but it is now known that clamping the catheter will not help so it’s best to let it drain completely.

The patient is at high risk for post-obstructive diuresis based on the high urinary volume drained and his elevated creatinine. Urine production exceeding 200 mL/hr for 2 consecutive hours or producing more than 3 L of urine in 24 hours is considered diagnostic for post-obstructive diuresis. Serum and urine electrolytes should be monitored closely in such situations. Replacement fluid should be limited to roughly 75% of previous hourly urine output until the polyuria has normalized.

Otherwise, treatment of his BPH is the same as before except that he may need a longer period with a Foley catheter to rehabilitate his bladder and he is more likely to fail his voiding trial.



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Mr. Presley Follows-up with the Urologist

Mr. Presley follows up with the urologist 7 days later. She instills sterile saline into his bladder through the catheter, and once he feels the need to urinate, she removes the catheter. Mr. Presley is able to successfully empty 90% of the instilled volume. His urologist is pleased that he has passed the voiding trial, recommends that he continue the alpha-blocker therapy and warns him against potential triggers to urinary retention. She lets him know that if he goes into urinary retention again, he may need to undergo a procedure to reduce the obstruction from benign prostatic hyperplasia.

Mr. Presley responds that he will keep her instructions always on his mind, says “thank you very much,” and leaves the building...smiling.



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BPH and Acute Urinary Retention

It is estimated that 1 in 10 men between the ages of 70 and 79 and 3 in 10 men between the ages of 80 and 89 will have an episode of acute urinary retention. Standard treatment involves maximizing medical therapy with alpha blockers to reduce outlet obstruction and 5 alpha reductase inhibitors like finasteride to reduce prostate size. Finasteride and similar medications can also reduce bleeding during prostate surgery, but to substantially reduce prostate size may take 6 months of treatment or longer. Patients who fail the voiding trial will need to consider prostate surgery such as TURP, Laser TURP or similar. Urolift, which uses anchoring sutures to pull the lateral lobes of the prostate apart and open the urinary passage, may be appropriate for selected individuals. Surgery may not be sufficient to allow for normal voiding in patients with severely damaged or atonic bladders. Such patients will need to consider long-term intermittent self catheterization, a permanent Foley catheter or placement of a suprapubic (S/P) tube.



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Take-Home Messages from the *The Case of Mr. Presley's Urinary Retention*

1. Multiple factors can precipitate acute urinary retention, including infection, sympathomimetics, anti-cholinergics, alcohol, anesthesia and narcotics.
2. Acute urinary retention should be treated immediately with catheter decompression. Use of an alpha-blocker followed by a voiding trial in 3-7 days may enable up to 50% of men to avoid immediate surgery for obstructive BPH.
3. All patients in urinary retention should be referred to a urologist for follow-up.
4. Checking serum creatinine in patients with urinary retention is important in order to rule-out serious obstructive uropathy.
5. Recurrent urinary retention is an indication for a surgical procedure such as a TURP to remove the obstructing prostatic tissue.
6. Patients with more than 1,000 cc of bladder urine and elevated creatinine levels are at risk for post-obstructive diuresis and should be monitored for this.
7. Patients with multiple episodes of retention and those who fail voiding trials on medication should be considered for surgery. If they are too high risk for surgery or have badly damaged or atonic bladders, alternatives such as intermittent catheterization, permanent Foley or an S/P tube will be needed.



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