

## CLINICAL VIGNETTE

# Management of an Elderly Man with Acute Urinary Retention

Manuel A. Eskildsen, MD, MPH, CMD, AGSF

### *Case Presentation*

A 74-year-old male with a history of benign prostatic hyperplasia (BPH) and severe bipolar disorder presented to the emergency department with a large left groin bulge. At the time of presentation, the patient stated that the bulge had been present for about a month. He denied any nausea or vomiting and had been eating normally. He stated he had not had a bowel movement in “several weeks.”

The patient had a longtime history of severe bipolar disorder and was a lifelong nonsmoker. He drank about one beer per week. He was unmarried, with no children, and lived alone in an apartment. The patient was independent with his basic activities of daily living. As far as instrumental activities of daily living, he administered his own medications, but his only brother helped him with finances and transportation.

His initial physical examination was notable for stable vital signs and a large, non-reducible left inguinal hernia. He underwent herniorrhaphy without intra-operative complications. On the day of surgery, because of urinary retention, he required placement of an indwelling urinary catheter. He was discharged on the third day after surgery with good pain control and urine output with an indwelling catheter still in place. One of his discharge medications included tamsulosin, an alpha-1 adrenergic agonist.

He was discharged to a skilled nursing facility for rehabilitation and help in management of his catheter, which he had been judged to not be able to manage on his own at home. On the first day of admission to the nursing facility, his indwelling catheter was removed, and he was placed on a voiding trial with a regimen of clean intermittent catheterizations to be performed every 6 hours if post-void residual (PVR) levels were above 250 cc. His PVR levels were consistently in the 800-1000 cc range for two days. His urologist then recommended the indwelling catheter be reinstated, and he tolerated this well with no infections until he was discharged from the skilled nursing facility and admitted directly to a hospital for a simple prostatectomy. He underwent the procedure under general anesthesia and had no intraoperative or postoperative complications. By the time of hospital discharge, he was able to void on his own. After spending several days staying with his brother, he was able to move in to an assisted living apartment, living there on his own.

### *Acute Urinary Retention in Men*

Acute urinary retention (AUR) is the sudden inability to pass urine, which is a urologic emergency and can be quite painful. More than 10% of men in their 70's and a third in their 80's are expected to develop it within the next five years.<sup>1</sup> The three main mechanisms that can lead to AUR are outflow obstruction, neurologic impairment, and an inefficient detrusor muscle. Obstruction can be mechanical, most commonly caused by benign prostatic hyperplasia, and dynamic obstruction refers to increased muscle tone in the bladder outlet or urethra due to medications like opiates. Interruption or alteration of neural pathways leading to the lower urinary tract can also lead to AUR. Finally, dysfunction of the detrusor muscle, like that caused by anticholinergic medications, may lead to AUR as well.

AUR is divided into two main types: spontaneous and precipitated.<sup>2</sup> Spontaneous AUR develops largely as part of the pathogenesis of benign prostatic hyperplasia (BPH), while precipitated AUR develops as a result of a superimposed etiology. Medications (e.g., opiates, anticholinergics, nasal decongestants), spinal cord injuries, urinary infections, trauma, or even bed bound status in the post-operative period can all lead to precipitated urinary retention.

Management of AUR involves immediate bladder decompression, through a urinary catheter, most commonly urethral, but it may also be suprapubic. After the initial catheterization, there is evidence that a trial without a catheter (TWOC) may be successful. TWOC involves removing the catheter most often after 1-3 days of catheter placement, allowing the patient to void successfully in 23-40% of cases. Surveys conducted in the UK and France showed that close to 75% of men catheterized for AUR had a TWOC.<sup>2</sup> Factors that are associated with successful TWOC include younger age (<65 years), detrusor pressure greater than 35 cc H<sub>2</sub>O, a drained volume of less than one liter at catheterization, and the presence of a precipitating event.<sup>3</sup> There is mixed evidence as to the optimal time to start TWOC. In one trial, prolonged catheterization was associated with a greater success rate for TWOC (seven compared to two days).<sup>4</sup> However, prolonged catheterization has also been associated with more complications, like hematuria, infection, and urinary leakage around the catheter, as well as more prolonged hospitalizations.<sup>5</sup>

Clean intermittent catheterization (CIC) is an additional tool after the catheter is removed. A feasibility trial of CIC after a

short period of indwelling catheterization (mean=2.6 days) on 50 patients found a higher likelihood of voiding success compared with the indwelling catheter group (56% vs 25%).<sup>6</sup>

Medical management is an additional tool that may be used to improve the likelihood of success of a TWOC. In one randomized trial of 360 men comparing 10 mg of alfuzosin (an alpha-1 agonist) with placebo, alfuzosin was associated with higher rate of success of TWOC (62% vs 48%), as well as reduced need for surgical treatment.<sup>7</sup>

The definitive treatment for AUR is surgical. This may involve transurethral resection of the prostate (TURP) or prostatectomy. With respect to the timing of surgery, immediate surgery after an episode of AUR is associated with greater morbidity, including intraoperative bleeding and urosepsis,<sup>8</sup> and mortality in comparison to elective surgery.

### Discussion

Our patient developed AUR and was treated initially with immediate bladder decompression with a urinary catheter and medically managed with tamsulosin. A TWOC with CIC was unsuccessful at the facility. He underwent simple prostatectomy after the initial episode of AUR, and despite the potential for greater complications associated with surgery scheduled less than 30 days after AUR, he had a successful recovery.

In summary, an episode of AUR should lead to immediate decompression of the bladder, in most instances with an indwelling catheter. An alpha-1 agonist like alfuzosin should be initiated, if not in place already, at the time of insertion of the catheter. Under most circumstances, a trial without a catheter should be attempted 2-3 days after insertion of the urinary catheter. If TWOC is unsuccessful and the catheter needs to be replaced, surgical treatment may be attempted, preferably 30 days or more after the initial episode of retention.

### REFERENCES

1. **Yoon PD, Chalasani V, Woo HH.** Systematic review and meta-analysis on management of acute urinary retention. *Prostate Cancer Prostatic Dis.* 2015 Dec;18(4):297-302. doi: 10.1038/pcan.2015.15. Epub 2015 Jul 21. Review. PubMed PMID: 26195469.
2. **Fitzpatrick JM, Kirby RS.** Management of acute urinary retention. *BJU Int.* 2006 Apr;97 Suppl 2:16-20; discussion 21-2. Review. PubMed PMID: 16507048.
3. **Klarskov P, Andersen JT, Asmussen CF, Brenøe J, Jensen SK, Jensen IL, Lund P, Schultz A, Vedel T.** Symptoms and signs predictive of the voiding pattern after acute urinary retention in men. *Scand J Urol Nephrol.* 1987;21(1):23-8. PubMed PMID: 3589519.
4. **Djavan B, Shariat S, Omar M, Roehrborn CG, Marberger M.** Does prolonged catheter drainage improve the chance of recovering voluntary voiding after acute retention of urine. *Eur Urol.* 1998;33 (Suppl 7):A26.
5. **Desgrandchamps F, De La Taille A, Doublet JD; RetenFrance Study Group.** The management of acute urinary retention in France: a cross-sectional survey in 2618 men with benign prostatic hyperplasia. *BJU Int.* 2006 Apr;97(4):727-33. PubMed PMID: 16536763.
6. **Patel MI, Watts W, Grant A.** The optimal form of urinary drainage after acute retention of urine. *BJU Int.* 2001 Jul;88(1):26-9. PubMed PMID: 11446840.
7. **McNeill SA, Hargreave TB, Roehrborn CG; Alfaur study group.** Alfuzosin 10 mg once daily in the management of acute urinary retention: results of a double-blind placebo-controlled study. *Urology.* 2005 Jan;65(1):83-9; discussion 89-90. PubMed PMID: 15667868.
8. **Pickard R, Emberton M, Neal DE.** The management of men with acute urinary retention. National Prostatectomy Audit Steering Group. *Br J Urol.* 1998 May;81(5):712-20. PubMed PMID: 9634047.

Submitted April 19, 2016