

Case – Chronic urinary retention in elderly women: Workup and management

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CASE REPORT

An 84-year-old female presented to the hospital with delirium and was found to have an *E. coli* urinary tract infection and inability to empty with a postvoid residual (PVR) of 350mL. She had difficulty emptying for years compounded by constipation and recurrent urinary tract infections (UTI). This was her third presentation to hospital for this issue in two months. After review we noted she was previously treated with an in-and-out catheterization and urinalysis followed by being discharged.

BACKGROUND

Chronic urinary retention (CUR), defined as the persistent inability to void an adequate amount of urine,¹ affects approximately 3 in 100,000 women, 13 times less than in men². Although controversial, the American Urological Association defines non-neurogenic CUR as a PVR > 300mL on two separate occasions persisting for a minimum of 6 months.³ CUR may not always present with pain and might not even be the patient’s chief complaint.⁴ CUR may be found incidentally during the workup for some precipitating causes of CUR outlined in Table 1^{1,5} with detrusor muscle dysfunction and obstruction being the most common.² If not addressed, CUR

KEY MESSAGES

- Chronic urinary retention in elderly women is uncommon, particularly compared to age-matched men; however, it can be challenging for the treating physician.
- History, including medication and gynecological history, physical exam, and investigations are crucial to determine reversible etiologies.
- For those with no or mild consequences, conservative measures and medical management should be attempted prior to catheterization.
- Intermittent self-catheterization is preferred over indwelling, and suprapubic is preferred over urethral indwelling catheters.

can lead to recurrent infections, renal failure, hydronephrosis, denervation of the bladder, and detrusor muscle weakness or failure.^{6,7}

WORKUP

History and physical exam are important to establish the chronicity, etiology, and consequences of the UR.^{1,8} History should include voided volumes, timing of voids, fluid intake, presence or absence of hematuria, UTI, constipation, incontinence and irritative symptoms. Furthermore, past medical history should be evaluated for dermatological, gynecological, colorectal, neurological and urological disorders and medications as per Table 1.

Physical exam should include an abdominal exam for palpable kidneys and a distended bladder as well as examination of the perineum for masses, prolapse, dermatological changes, scarring and vaginal atrophy. A neurological examination including the presence of the bulbocavernosus reflex is also part of the work-up. Investigations include a urinalysis and renal function test as well as renal and abdominal ultrasound to determine if there is hydronephrosis or any abdominal masses, and evaluation of PVR by scan or catheterization. Cystoscopy is highly recommended to determine if there is an obstructive etiology such as a urethral stricture or intraurethral/bladder foreign body which may not be detected by other tests. Cystoscopy will also help determine if the UR is chronic in nature with signs of trabeculations and diverticuli.

MANAGEMENT

Unlike in acute urinary retention where a catheter is placed followed by a trial of void, CUR does not always require a catheter. If the patient is not bothered by the retention and has no signs of infection, renal calculi, or renal disease, it may be appropriate to simply observe, particularly if their PVR is < 500mL.⁵ Conservative efforts may also be undertaken by withdrawing offending medications, treating constipation or other precipitating causes of urinary retention, and engaging in pelvic floor rehabilitation.⁴

If there are mild consequences of the CUR (i.e., recurrent UTIs) then a trial of alpha-blockers, aimed to relax the urethra muscles, may be started.³ A systematic review and meta-analysis on the use of alpha-blockers in women with CUR showed improvement in symptoms (International Prostate Symptom Score (IPSS) mean difference -1.5 (95%CI -2.91 to -0.09)) but no difference in PVR.⁹ The authors also showed that alpha-blockers statistically improve quality of life (IPSS-Quality of Life score mean difference of -0.35 (95%CI -0.85 to 0.15)) with no difference in adverse events compared to placebo.⁹ However, the clinical implications of this degree of improvement may not be significant given the minimal detectable difference is usually considered 3 points. In the analysis there was no added benefit from combining alpha-blockers and cholinergics.⁹ Alpha-blocker monotherapy appears to be safer than cholinergic monotherapy with a RR of 0.52 (95%CI 0.05 to 5.36).⁹ There is limited evidence for cholinergic monotherapy (i.e., bethanechol).⁴ One double blinded randomized controlled trial showed a moderate

reduction in PVR and increase in flow rate but was limited by its small sample size.¹⁰ A separate small study reported that bethanechol did not improve voiding efficiency better than placebo.¹¹

Where appropriate, surgical intervention can be effective in treating reversible causes of bladder outlet obstruction. CUR secondary to pelvic organ prolapse is amenable to resolution with 62-86.4% of patients reporting improvement in symptoms following surgery.¹² When bladder outlet obstruction is due to a complication from a neck fascial sling or mid-urethral synthetic sling, a sling incision can improve symptoms in 70-90% of patients.¹²

If there are severe consequences from CUR such as recurrent urosepsis, renal impairment, or pain, intermittent or indwelling catheterization may be utilized.³ If the elderly patient has adequate manual dexterity and intact cognition, intermittent self-catheterization can provide the patient freedom from having a permanent catheter. It does, however, carry the risk of infection, urethral bleeding and/or stricture and development of calculi over time.¹³ It has been reported that of women aged 61-70, 83% are successful with intermittent self-catheterization, and those aged 71-80 and >80 are 74% and 40% successful, respectively.¹⁴ Therefore, this is a reasonable option in older women. Generally, it is not recommended for elderly women to be dependent on a caregiver to perform intermittent catheterization; these women are better suited for an indwelling catheter.

Where conservative management is inappropriate and intermittent self-catheterization is not possible, an indwelling urethral catheter or suprapubic catheter may be placed, with the latter being more favourable.^{3,15} A Cochrane Review revealed that there is insufficient evidence to compare the incidence of symptomatic UTIs between indwelling urethral and suprapubic catheterization, but that urethral catheterization is associated with increased rates of asymptomatic bacteriuria (RR 2.25), pain (RR 5.62), increased need for re-catheterization (RR 2.21) as well as risk of urethral strictures (RR 2.38).¹⁵ Suprapubic catheterization is superior with respect to quality of life with one study reporting an overall 72% satisfaction rate with the suprapubic catheter and 89% of patients preferring a suprapubic over urethral catheter after trialling both.¹⁶

CASE RESOLUTION

After a work-up as outlined in our review, the primary diagnosis for the patient was chronic urinary retention secondary to constipation. The patient was counselled on water intake for proper hydration and was given a dose of magnesium citrate while in the emergency department. She was then sent home with a prescription for a daily stool softener and was advised to consider pelvic floor physiotherapy. The patient has not presented to hospital or her family physician for this issue in the past six months.

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Figures and Tables

Table 1. Etiologies of chronic urinary retention in elderly women	
Obstructive*:	Anterior, apical and or posterior pelvic organ prolapse, gynecological malignancies and masses (adenomyoma, leiomyoma, and ovarian masses), colorectal malignancies, impacted stool, urethral calculi, foreign body, caruncle or cyst, urethral diverticulum, urethral stricture, bladder malignancy, previous incontinence procedures (i.e., suburethral mesh or fascia slings, retropubic burch colposuspensions, urethral bulking agents)
Infectious/Inflammatory:	Vulvovaginitis, Behcet syndrome, Vaginal lichen planus or sclerosis, HSV/HPV condyloma, cystitis, periurethral abscess, varicocele zoster, Lyme disease, Schistosomiasis
Neurological:	Multiple sclerosis, Guillaine-Barre syndrome, spinal cord neoplasm or trauma, transverse myelitis, diabetes, vertebral lesion, urethral sphincter dysfunction*
Iatrogenic:	Postoperative, Psychogenic, Medications (antiarrhythmics, anticholinergics, antidepressants, antihistamines, hydralazine, nifedipine, antiparkinsonian, antipsychotics, muscle relaxants, sympathomimetics, NSAIDs, opiates), dysfunctional voiding habits

*Most common.