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Acute Kidney Injury Secondary to Acute Urinary Retention in an 87-Year-Old Female with Prolonged Poor Oral Intake in Hospital National Guido Valadares, Timor Leste on May 2026: A Case Report

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ABSTRACT

Acute kidney injury (AKI) is a common medical emergency in elderly patients and is associated with significant morbidity and mortality. Postrenal obstruction accounts for approximately 5–10% of AKI cases but is more common among older adults. We report the case of an 87-year-old woman who presented with a 10-day history of inability to eat and drink, progressive weakness, abdominal distension, and inability to pass urine. Examination revealed a markedly distended bladder consistent with acute urinary retention. Laboratory investigations demonstrated severe AKI and Urinary Tract infection (UTI). Prompt bladder catheterization drained a large volume of urine, resulting in rapid clinical improvement and gradual recovery of renal function. This case highlights the importance of considering urinary retention as a reversible cause of AKI in elderly women, where delayed diagnosis may lead to permanent renal damage.

Keywords: Acute kidney injury, acute urinary retention, obstructive uropathy, elderly female, postrenal AKI, bladder outlet obstruction, dehydration; Timor-Leste; resource-limited setting

INTRODUCTION

Acute kidney injury (AKI) is a sudden decline in kidney function resulting in the accumulation of metabolic waste products and disturbances in fluid, electrolyte, and acid-base balance (1). According to the Kidney Disease: Improving Global Outcomes (KDIGO) guideline, AKI is diagnosed by an increase in serum creatinine, a reduction in urine output, or both (1). AKI is classified into prerenal, intrinsic renal, and postrenal causes, with postrenal obstruction accounting for approximately 5–10% of all cases but occurring more frequently among elderly patients (2,3).

Urinary retention is a relatively uncommon condition in women because of their shorter urethra and lower prevalence of bladder outlet obstruction compared with men (4). However, advanced age, pelvic organ prolapses, neurogenic bladder, diabetes mellitus, medications with anticholinergic properties, severe constipation, and detrusor underactivity increase the risk of urinary retention in elderly women (4,5). If left untreated, urinary retention may lead to obstructive uropathy, hydronephrosis, urinary tract infection, electrolyte disturbances, and AKI (3,5).

Early recognition of obstructive nephropathy is essential because renal dysfunction is often reversible following prompt decompression of the urinary tract (2,6). We report the case of an 87-year-old woman presenting with prolonged poor oral intake, acute urinary retention, UTI and severe AKI that improved after bladder catheterization, rigorous fluid and monitoring and Intravenous antibiotics

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Case Presentation

An 87-year-old female presented to the emergency department with progressive generalized weakness and reduced consciousness after ten days of poor oral intake. According to family members, she had eaten and drunk very little during this period. She had also been unable to pass urine for last ten days, with progressive lower abdominal swelling and painful.

She denied fever, diarrhea, vomiting, or recent trauma. Her medical history included hypertension which diagnosed in 2019 and she regular medication Amlodipine 10 mg peroral nocte to control her blood pressure, and she had no previous history of chronic kidney disease and urine retention in the past.

On examination, elderly female appeared dehydrated and lethargic but her consciousness was fully conserved but slightly confusion with Glascow coma scale 14/15 (open eyes:4 motor response:5 and verbal response 5)

Vital signs

- Blood pressure: 110/70 mmHg
- Pulse: 102 beats/minute
- Respiratory rate: 20 breaths/minute
- Temperature: 36.8°C
- Oxygen saturation: 97% on room air

Physical examination revealed: dry mucous membranes, reduced skin turgor, markedly distended suprapubic region and Tender palpable urinary bladder suggested for Cystitis. There was no costovertebral angle tenderness to suggest for pyelonephritis. No bipedal edema of the legs. Her physical examination on other systems was within normal ranges. A Foley urinary catheter was inserted immediately, draining approximately 2,000–2,500 mL of dark concentrated urine.

Investigations

Initial and frequent follow up laboratory findings demonstrated on the table.

Investigation	Result				Normal Ranges
	Initial test 08 /06/2026	Follow up test 11/06/2026	Out patient follow up test 30/06/2026	Last Out patient follow up test 17//07/2026	
Creatinine	500.2 umol/L	51.0 umol/L	40 umol/L	35 umol/L	<110 umol/L
Blood Urea Nitrogen	42.8 mmol/L	3.5 mmol/L	3 mmol/L	3.6 mmol/L	3.0-8.0 mmol/L
Potassium	4.6 mmol/L	3.2 mmol/L	3.6 mmol/L	3.5 mmol/L	3.5-5.3 mmol/L
Sodium	134.6mmol/L	128.0 mmol/L	135 mmol/L	134 mmol/L	135-145 mmol/L
Bicarbonate (CO2)	11 mmol/L	23 mmol/L	24 mmol/L	23 mmol/L	21-31 mmol/L
Hemoglobin	124.4 g/L	124 g/L	125g/L	125 g/L	120-150g/L
White blood cells	11.7 X10⁹/L	10.5x10⁹/L	9.0x10⁹/L	8.5 x10⁹/L	3.5-11.0 x10⁹/L
eGFR	6.31 ml/min/1.73m^2	90 ml/min/1.73m^2	94 mL/min/1.73m^2	96 mL/min/1.73m^2	>90 ml/min/1.73m^2

Table:1

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Urinalysis showed:

Present of Nitrite, leucocyte esterase, white blood cells, few bacteria were identified and cloudy urine appearance. No Blood, no cast, no crystal, glucose and protein was negative

Urine culture: Reported of no growth after 5 days.

Renal ultrasonography revealed:

Diffuse bladder wall thickening measured 4 mm with urinary bladder distended, irregularity wall with increased vascularity and floating low level of echoes. Bilateral hydronephrosis but no renal calculi, no ureteral stone, no bladder stone no urethral stone and no renal masses were identified on abdominal ultrasonography.

CT abdomen Pelvis simple

CT scan abdomen/ pelvis simple revealed: no kidneys stone no ureteric stone, no bladder stone, no urethral stone, hydronephrosis bilateral kidneys, there was no pelvic or abdominal mass was identified. The liver, spleen, pancreas are normal in size, contour and attenuation with no focal lesion identified. The remaining visualized abdominal organs are unremarkable.

Diagnosis

Based on the history, physical examinations, laboratory and imaging results demonstrated the patient was diagnosis with:

1.Acute kidney injury/AKI as urea and creatinine were markedly abnormal and eGFR 6.31 ml/ min/1.73m^2 (AKI KDIGO stage 3)

2. Culture negative urinary tract infection (UTI) / Cystitis

3. Acute urinary retention

4. Postrenal obstructive nephropathy

5. Dehydration secondary to prolonged poor oral intake

Management

This patient was managed as following:

1. Immediate bladder decompression with Foley catheter draining dark concentrated urine 2000-2500 ml in the urine bag

2. Intravenous isotonic fluids normal saline 0.9 % 500 ml bolus was given than maintenance 15-20 mL/kg/day

3. Noso-gastric tube inserted for feeding and fluid administration for rehydration and limited Intravenous fluid to avoid fluid overload and complication for elderly patient.

4. Intravenous antibiotics Ceftriaxone 1 gr twice daily for 7 days as per local antibiotics guidelines.

5. Strict monitoring of urine output and control fluid administration from intravenous to avoid fluid overload

6. Followed up renal function monitoring result to adjust fluid management.

7. follow up electrolytes test for correction

8. Avoidance of nephrotoxic medications, Diclofenac intramuscular injection for pain was stopped immediately.

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9.Nephrologist consultation was done and advice for repeat renal function test after adequate hydration in next 24 hours.

After rigorous treatment given to the patient and following catheterization, urine output improved markedly 2500- 3000 ml was recorded immediately and continue with good urine Out-put over 24 hours. Serum creatinine and blood urea nitrogen progressively decreased over the following days and normalized at repeated test on third day, accompanied by improvement in appetite and mental status. She has been sitting with help and going to toilet with support because her elderly age but clinical much stable.

Outcome and Follow-up

The patient demonstrated gradual recovery of renal function which demonstrated on follow up laboratories results showed on the table (**table:1)** with urea and creatinine remains normal and eGFR was within normal range for 87 years old female and normal of urine output from 2000-2500 ml per 24 hours draining from indwelling catheter.

She was discharged after stabilization and completion of 7 days Intravenous ceftriaxone for complicated urinary tract infection/ Cystitis in elderly patient following local antibiotic guidelines. She was discharged home with:

1.Indwelling urinary catheter because she had repeated retention in the ward after indwelling was removed and Indwelling catheter changing every two weeks at out-patient department

2. Follow-up at Nephrologist out-patient with repeat renal function test which normal after few weeks of discharged from hospital, renal function and eGFR as shown on the table 1 above.

3. Naso gastric for feeding and fluid administration because patient did not eat and drink per oral which is common in elderly patient and nasogastric tube will be change every month at out- patient department. The patient was stable throughout subsequent regular out-patient follow up with renal function and eGFR maintaining normal.

DISCUSSION

Postrenal AKI results from obstruction to urinary flow, leading to increased intratubular pressure, reduced glomerular filtration rate, decreased renal perfusion, and tubular injury (2,6). Experimental studies have demonstrated that prolonged obstruction produces inflammatory changes, tubular atrophy, and interstitial fibrosis, emphasizing the importance of early diagnosis and intervention. This case was classified into AKI KDIGO stage 3 caused by postrenal obstructive to urinary flow. She had severe oliguria with creatinine 500.2 ummol/L, urea 42.8 mmol/L and eGFR 6.31 ml/min/1.73m^2 which need for urgent dialysis, however immediate action taking through Indwelling catheter had resolved urinary retention by drained out 2,000 -2,500 ml of urine and rigorous rehydration reversed patient from worsening AKI stage 3 and had stopped the patient from urgent dialysis (7).

Although urinary retention is predominantly observed in older men, it should not be overlooked in elderly women, particularly those with neurological disease, pelvic organ prolapses, chronic constipation, previous pelvic surgery, diabetes mellitus, or medication-induced bladder dysfunction (4,5). Elderly patients frequently present with nonspecific symptoms such as anorexia, confusion, lethargy, abdominal discomfort, or reduced urine output rather than classic lower urinary tract symptoms, making diagnosis challenging (5).

In the present case, the patient had ten days of poor oral intake and inability to void with urine output was nil for several days at home resulting in combined prerenal dehydration and postrenal obstruction. The palpable distended bladder prompted immediate bladder catheterization, which drained a large volume of urine and was followed by gradual recovery of renal function. This clinical course is consistent with previous reports demonstrating that timely relief of urinary obstruction can reverse renal impairment when irreversible nephron damage has not yet occurred (2,6).

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After bladder decompression, clinicians should monitor patients for post-obstructive diuresis, characterized by excessive urine output that may result in dehydration, hypovolemia, and electrolyte disturbances if not managed appropriately (3,8). Close monitoring of fluid balance, electrolytes, and renal function is therefore recommended and proper investigation should be carried out to identified the causes of postrenal obstruction urinary retention in elderly female patient.

This case highlights the importance of considering urinary retention in elderly women presenting with AKI, particularly when physical examination reveals a distended bladder. A simple bedside bladder examination and timely urinary catheterization may prevent permanent kidney injury and significantly improve patient outcomes as it is shown in this case report. Acute kidney injury (AKI) is a significant and under-recognized cause of morbidity among hospitalized patients in low- and middle-income countries, including Timor-Leste, where delayed presentation, limited access to diagnostic imaging, and shortages of specialist nephrology and urology services remain ongoing challenges (1,2). In such resource-limited settings, AKI is often related to dehydration, infections, and late presentation of reversible conditions (2,3).

Although urinary tract infections and volume depletion are commonly reported contributors to AKI in the region, postrenal AKI due to acute urinary retention in elderly women is rarely documented in the medical literature of Timor-Leste (3,4). This may reflect underdiagnosis rather than true rarity, as bedside bladder assessment and early catheterization may not always be systematically performed in elderly patients presenting with non-specific symptoms such as weakness, anorexia, or confusion. UTI in 87 years old female still common related to age changes, incomplete bladder emptying because of reduced muscle strength which leading to increased post-void residual urine (4). This is what happen to the case report with poor oral intake for ten days leading to dehydration and unable to past urine in elderly because of decreased muscle strength causing AKI and UTI/ Cystitis.

This case emphasizes the importance of careful clinical examination in low-resource environments. A simple bedside finding of a distended urinary bladder allowed prompt catheterization, immediate decompression, and recovery of renal function without the need for advanced imaging or renal replacement therapy (1,10). Such findings highlight the critical role of basic clinical skills in improving outcomes in settings with limited diagnostic infrastructure.

To our knowledge, this may be among the first reported cases from Timor-Leste describing AKI secondary to acute urinary retention and UTI/ Cystitis in an elderly female patient. Reporting such cases is important to raise awareness among clinicians in Timor-Leste regarding reversible causes of AKI and to encourage routine evaluation for urinary retention in elderly patients presenting with oliguria or unexplained renal impairment (9,11).

CONCLUSION

Acute kidney injury secondary to acute urinary retention is a potentially reversible condition that requires early recognition and timely intervention. This case from Hospital Nacional Guido Valadares, Timor-Leste highlights the importance of thorough clinical assessment, including evaluation of hydration status and bedside bladder examination, particularly in elderly patients presenting with non-specific symptoms such as weakness, poor oral intake, and reduced urine output.

In a resource-limited setting such as Timor-Leste, where access to advanced diagnostic investigations were limited, careful history taking, physical examination, basic laboratory testing, and early urinary catheterization remain essential tools for preventing complications and improving outcomes. Prolonged poor oral intake and delayed presentation may increase the risk of severe AKI among vulnerable elderly patients.

This case emphasizes the need to strengthen awareness among healthcare workers regarding post-renal causes of AKI, improve early screening for urinary retention in elderly patients, and promote timely management strategies to reduce avoidable morbidity and mortality in Timor-Leste.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/ her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest

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