

## CLINICAL IMAGE

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# Atypical acute obstruction of the urinary tract

Marie Julien, Sami El Ramadan, Gwendoline Rager

## CASE REPORT

A 71-year-old man with a history of untreated prostate adenocarcinoma and an indwelling urinary catheter (UC) for chronic urinary retention was admitted to the intensive care unit for septic shock. He presented a significant biological inflammatory syndrome, hyperlactatemia of 3.4 mmol/L and stage 1 acute kidney injury. During the exploration, the patient underwent an abdominal computed tomography (CT) scan. The scan revealed dilatation of the right urinary tract due to obstruction of the right ureteral orifice by the end of the Foley tube as seen on the curvilinear reconstruction (Figure 1).

Fatty infiltration due to obstruction was observed around the right kidney, as well as mild late contrast enhancement in the parenchyma. This indwelling UC was removed and replaced upon admission to our department. The patient did well under empiric antibiotic therapy, resulting in the normalization of renal function. Subsequently, he was referred to the urological surgery unit to plan a prostatectomy.

## DISCUSSION

Most ureteral lesions are caused by medical procedures, such as those performed by urologists, gynecologists, or general surgical procedures, or by external trauma [1, 2]. Ureteral obstruction due to UC is a rare clinical event with fewer than 30 cases reported worldwide [3].

Female gender, neurogenic bladder, sensory disturbances, and urethral catheterization with an empty



Figure 1: Curvilinear reconstruction of an abdominal computed tomography scan with contrast following the right ureter on patient admission: (A) Obstruction of the right ureteral orifice by the end of the Foley tube extremity leading to dilatation of the right ureter. (B) Fatty infiltration around the right kidney and mild late contrast-enhancement in the parenchyma.

bladder appear to increase the likelihood of UC ureteral malposition [4, 5].

Ultrasound, CT, and cystoscopy are diagnostic tools for suspected catheter misplacement [6]. The Foley catheter appears as a hypodense spherical structure filled with water attenuation on CT. Hydroureteronephrosis may also be observed, especially when Foley catheter is placed at the ureteral orifice. Contrast-enhanced CT urography or magnetic resonance imaging may be useful in the diagnosis of ureteral rupture with contrast leakage into the abdomen and pelvis [7].

If the ureter is not injured, patients can be managed conservatively by changing or removing the catheter and treating any urinary tract infection.

In cases of ureteral dilaceration or rupture may require endoscopic surgery, percutaneous nephrostomy, or laparotomy for reconstruction [3, 8].

## CONCLUSION

Urinary catheter ureteral malposition is a very rare clinical entity that can result in severe complications.

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Diagnosis can be quickly made through imaging to visualize a misplaced catheter or secondary hydroureteronephrosis. Conservative management is possible if the ureter remains intact.

**Keywords:** Acute kidney injury, Curvilinear reconstruction, Ureteral obstruction, Urinary catheter

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## Author Contributions

Marie Julien – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation

of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Sami El Ramadan – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Written informed consent was obtained from the patient for publication of this article.

## Conflict of Interest

Authors declare no conflict of interest.

## Data Availability

All relevant data are within the paper and its Supporting Information files.

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