CLINICAL CASE

Nondilated obstructive uropathy: an unreported complication in retropubic radical prostatectomy

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Abstract The aim of the present case was to provide information on a complication in retropubic radical prostatectomy that has not been reported on in the medical literature. Renal obstruction is typically characterized by hydronephrosis and hydroureter. Under certain circumstances, the radiologic studies of some patients with clinical renal failure do not show any dilatation of the urinary components, deflecting the diagnosis towards pre-renal or renal failure.

A 65-year-old man that underwent retropubic radical prostatectomy with no intraoperative complications later developed acute renal failure, oliguria, and edema. His clinical background did not explain the development of acute pre-renal or renal failure and the radiologic studies showed no renal or ureteral dilatation. The patient did not respond to conventional therapy and so, as the only option, a urinary diversion through a right open nephrostomy was performed. The acute renal failure was resolved, with high urine output. Given the adequate response, bilateral ureteral reimplantation was then performed.

Nondilated obstructive uropathy syndrome is a little-known clinical pathology and should be taken into account as a possible complication in retropubic radical prostatectomy.

PALABRAS CLAVE
Complicaciones; Prostatectomía radical; Uropatía obstructiva no dilatada; México.
Introduction

Bilobar renal obstruction is typically characterized by hydronephrosis-hydroureter. However, under certain circumstances, despite the presence of symptomatic renal disease, imaging studies fail to demonstrate hydronephrosis-hydroureter. This is the syndrome of nondilated obstructive uropathy. This syndrome can be the result of various pathologic clinical conditions including dehydration, hypotension, severe oliguria, early acute obstruction, and inability of the conductor system to dilate due to the metastatic infiltrative processes of abdominopelvic origin. This syndrome was not found among the complications reported on in the literature in patients that underwent open retropubic radical prostatectomy.5-7

The aim of the present study was to provide information, through a case presentation, on a rarely presented complication of retropubic radical prostatectomy that has not been reported on in the literature, documenting its diagnostic process and resolution.

Case presentation

A 65-year-old man with a remarkable past medical history that included a more than 25-year progression of high blood pressure treated with captopril, was evaluated in a medical consultation for presenting with a prostate-specific antigen (PSA) value of 6.33 ng/dL and free PSA of 8%. Physical examination revealed an adenomatous prostate for which a transrectal biopsy was performed, resulting in a Gleason 5 (3+2) adenocarcinoma of the prostate. The patient was programmed for retropubic radical prostatectomy that was carried out on June 15, 2011. There were no complications and blood loss was an approximate 600 mL. The patient had an adequate postoperative progression, but no diuresis was observed through the transurethral catheter; the initial serosanguineous drainage of 70mL gradually subsided. Three days after surgery the patient had a raised level of nitrogen compounds: urea 109 mg/dL, creatinine 9.2 mg/dL, potassium 4.98 mEq/L, sodium 132.5 mEq/L, and chloride 108 mEq/L, as well as important scrotal edema. A kidney ultrasound study showed no dilation of the collecting system and an empty bladder, and so a probable diagnosis of acute renal disease due to tubular necrosis was made. When the patient did not improve, the nephrology department decided to perform hemodialysis. A plain computed axial tomography scan was carried out on June 23, 2011 and showed no evidence of collections or bilateral renal obstruction. The Nephrology Service continued to manage the patient for intrinsic renal disease. Anuria and elevated nitrogen compounds persisted with the hemodialysis. Another ultrasound study was ordered, ruling out renal vessel thrombosis and there were no signs of ectasia in the collecting systems.

Believing there to be a nondilated obstruction, the decision was made to use double-J catheters, but they could not be placed due to the changes from the radical prostate surgery. An unsuccessful attempt was made through the percutaneous route.

On July 5, 2011 one month after the surgical procedure, open unilateral nephrostomy through a right posterior lumbotomy was performed as a last resort. The procedure was carried out with no complications and no hydronephrosis was observed. On the following day, the patient presented with diuresis through the nephrostomy of 5,750 mL in the first turn. Later output went up to 10 L daily and then became regulated to normal urinary volume values.

Laboratory studies from July 7, 2011 showed the following parameters in the blood chemistry: urea 32 mg/dL, creatinine 3.4 mg/dL, BUN 15 mg/dL, sodium 132 mEq/L, potassium 3.2 mEq/L, and chloride 103 mEq/L. Once the phase of excessive micturition subsided, the patient was released. Afterwards, a bilateral Lich-Gregoir ureteral reimplantation was performed on August 24, 2011. Days after the surgery, the patient presented with diuresis of more than 5 L in 24 hours. The polyuric phase subsided and the patient was released. Laboratory test results from August 25, 2011 were: glucose 162 mg/dL, BUN 6.00 mg/dL, urea 13 mg/dL, and creatinine 1.2 mg/dL.
Discussion

Nondilated obstructive uropathy syndrome can be the result of different pathologic clinical conditions associated with the absence of hydronephrosis-hydrourerter visualization in ultrasound and tomography studies, despite renal obstruction and elevated levels of nitrogen compounds. The case presented herein was the first time we were faced with such a situation and the decision to perform a nephrostomy was a rescue measure because the patient did not improve with treatment for intrinsic nephropathy. It was done unilaterally because we were not certain it would be beneficial. This case has illustrated the fact that renal obstruction should be presumed in a patient with 2 functioning kidneys that presents with signs of uremia, regardless of what imaging studies show.

Conclusions

The syndrome of nondilated obstructive uropathy is not well known and is mainly associated with neoproliferative processes, but also with surgical events such as suprapubic radical prostatectomy, and should be considered a possible, albeit uncommon, complication.

Conflict of interest

The authors declare that there is no conflict of interest.

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