

Ureteral duplication with ectopic implantation of the ureter into the prostatic urethra

Othman Chama, Khalid Ouatar, Mustapha Ahsaini, Soufiane Mellas, Jalal Eddine El Ammari, Mohammed Fadl Tazi, Mohammed Jamal El Fassi, Moulay Hassan Farih

ABSTRACT

An ectopic ureter is a ureter that terminates in or below the bladder neck. The incidence of ectopic ureter remains unclear because this malformation is often asymptomatic. Eighty percent of ectopic ureters are associated with a duplicate ureter. In our case, it was a 29 years old man, who consulted for intermittent pelvic pain. The patient underwent a prostatic magnetic resonance imaging (MRI), which showed an ectopic ureteral abruption at the level of the prostate. The uroscanner showed a ureteral duplicity with a silent superior kidney.

Keywords: Duplication, Ectopic implantation, Prostatic urethra, Ureteral malformation

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INTRODUCTION

An ectopic ureter is a ureter that terminates in or below the bladder neck. Ectopic ureter is 2–12 times more common in women than in men. Ectopia is bilateral in only 7.5–17% of cases. Eighty percent of ectopic ureters are associated with a duplicate ureter, whereas in men, the majority of ectopic ureters drain a single system [1, 2].

CASE REPORT

Mr. F.B. 29 years old male, sports coach, single, allergic to penicillin, from a consanguineous marriage, followed for anxiety on Xanax, who consulted for intermittent pelvic pain in which the ultrasound showed a latero-prostatic cystic image as well as an image suggesting a double excretory system with dilatation of the excretory cavities at the level of the upper kidney.

On examination, the patient described intermittent pelvic pain during micturition, no previous infectious episode, no micturition disorder, and no ejaculation disorder according to the patient. The clinical examination of the abdomen and external genitalia and the rectal examination were normal.

Renal function was normal. The bacteriological examination of the urine was sterile. The patient underwent a prostatic magnetic resonance imaging (MRI), which showed an ectopic ureteral abruption at the level of the prostate. The uroscanner showed a ureteral duplicity with a silent superior kidney.

The patient underwent a JJ ascension at the level of the healthy ureter with ureteroscopy (UPR) and ureteral catheterization for the ectopic ureter, followed by a partial nephroureterectomy by transperitoneal approach.

The ureter was sectioned at the level of the bladder neck, thus avoiding a dissection of the nerve strips. The

postoperative follow-up was simple, and the patient was discharged on day 5. The anatomopathological examination described a mesenchyme made of ovoid or spindle-shaped cells concentrically surrounding the primary renal tubules with lesions of renal dysplasia and interstitial nephritis. The removal of the JJ catheter was performed four weeks later. The patient did not complain of pain nor of lower urinary tract symptoms (LUTS).

DISCUSSION

The diagnosis of duplex collecting systems is rare in adulthood, as most of these anomalies are detected and surgically corrected in childhood.

The duplex collecting system can be variable where most ectopic ureters in men terminate in the prostatic urethra upstream of the verumontanum (47%) but they also terminate in the prostatic utricle (10%), seminal vesicle (33%), ejaculatory duct (5%), and vas deferens (5%) [3]. They may cause urinary tract infections, urinary urgency, and urinary frequency, but without real incontinence [4]. Only one case of ectopic implantation of a double system in the prostatic urethra in contact with the verumontanum with incontinence has been described [5].

Ultrasound provides excellent anatomic information but does not necessarily differentiate a bifid renal pelvis from a bifid ureter or two complete ureters [6]. In our case, ultrasound provided exact diagnosis of duplex collecting systems and ureter duplex, but did not describe exactly where the ostium of the ureter of upper pole was. Computed tomography (CT) scanning can help to determine if an obstruction exists and can aid in assessing the renal parenchyma. Computed tomography scanning can also help to determine the exact insertion of the duplex ureter if it is intravesical or extravesical [7].

In our case the patient had a uroscanner which showed a duplicate ureter with an upper kidney that did not excrete. Prostatic MRI was able to confirm the diagnosis as well as the termination of the ectopic ureter in the prostatic ureter (Figures 1 and 2).

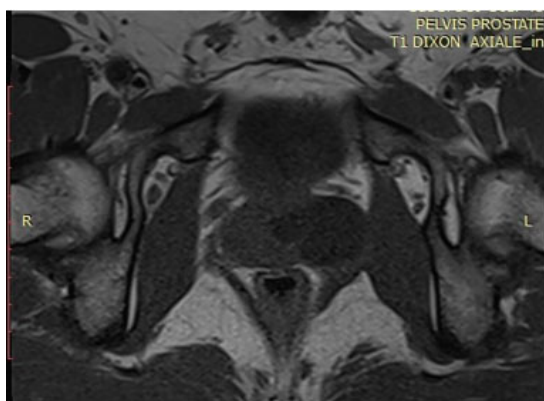


Figure 1: T1 MRI cross-section showing implantation in the prostate.

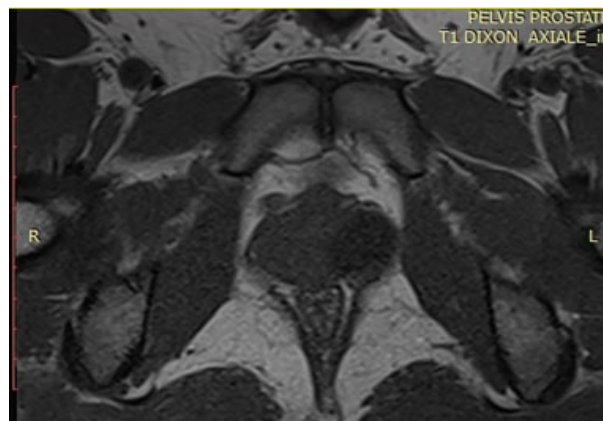


Figure 2: T1 MRI cross-section showing implantation in the prostate urethra.

Treatment

In our case, the patient underwent a partial nephroureterectomy. The ureter had to be kept as short as possible to avoid poor emptying and to limit dissection of the vas deferens, seminal vesicles, and latero-prostatic vasculo-nervous bands to avoid complications (Figure 3).

In the MATHEWS series, including 6 cases of ectopic implantation of the ureter into the prostatic urethra, nephroureterectomy with reconstruction of the prostatic urethra or nephrectomy associated with an endoscopic incision of the distal ureter was performed, but bladder dysfunction was reported in 2 of the 6 operated children [1].



Figure 3: The surgical specimen.

CONCLUSION

The presented case highlights the importance of an anatomical and functional evaluation of the urogenital tract anatomy in order to find the most appropriate treatment, i.e., a radical treatment for the destroyed kidney while preserving at the same time the spermatic tract.

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Author Contributions

Othman Chama – 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

Khalid Ouatar – Acquisition 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

Mustapha Ahsaini – Conception of 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

Soufiane Mellas – Conception of the work, Revising the work critically for important intellectual content, Final

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Jalal Eddine El Ammari – Conception of 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

Mohammed Fadl Tazi – Conception of 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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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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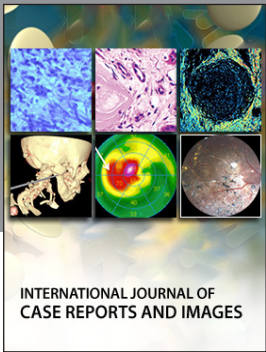
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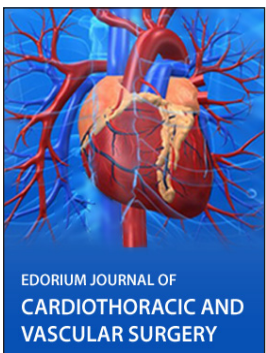


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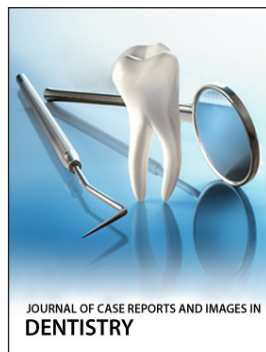
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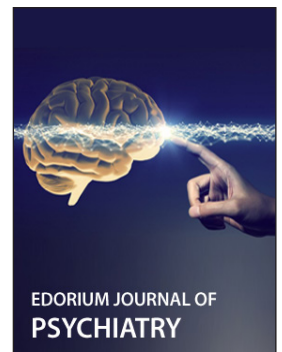
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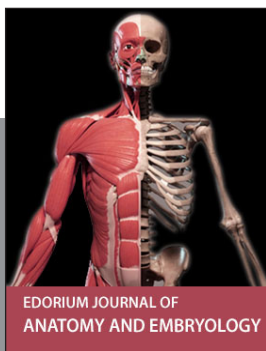
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