

## Bilateral Ureteral Duplicity with Right Ureterocele: About A Rare Case

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### Abstract

We report the case of a patient who is consulted for irritative symptomatology of the lower urinary tract and occasional lumbar bread, Objective cystoscopy the presence of right ureterocele and two left ureteral sites, the uroscanner objective bilateral ureteral duplication. The treatment consists of an endoscopic Ureterocelotomy (UEI) the latter allowed a disappearance of irritative symptomatology on the one hand and secondly renal disobstruction thus allowing the preservation of the right renal unit.

**Keywords:** Bilateral ureteral duplicity; Ureterocele; Endoscopic Ureterocelotomy (UEI)

### Introduction

Ureteral duplication is found in 0.9% of routine autopsies and bilateral complete ureteral duplication occurs in 1 in 500 persons [1] and is found in 0.3% of excretory urograms [2]. Ureteral duplication is more common in females and when bilateral and complete, all four ureters may open orthotopically on the trigone bladder. In keeping with the Weigert-Meyer law, the upper pole ureter typically opens medially while the lower pole ureter opens laterally. Complete ureteral duplication may be associated with other congenital abnormalities such as a short lower intramural ureter or vesicoureteral reflux or reflux of an upper ureteral occlusion with a ureterocele (orthotopic or ectopic) causing obstruction.

Ureteral duplication is often asymptomatic but may be associated with urinary tract infections, urolithiasis and the congenital problems mentioned above. Urinary calculi are often due to relative stasis of urine but may occur due to factors unrelated to the duplication. In our observation, bilateral ureteral duplicity was associated with a right ureterocele at the entrance of the ureters of the right superior pyelon. The mode of discovery was the irritative syndrome caused by the ureterocele, this ureterocele was also obstructive on the upper system of the right kidney.

### Case Report

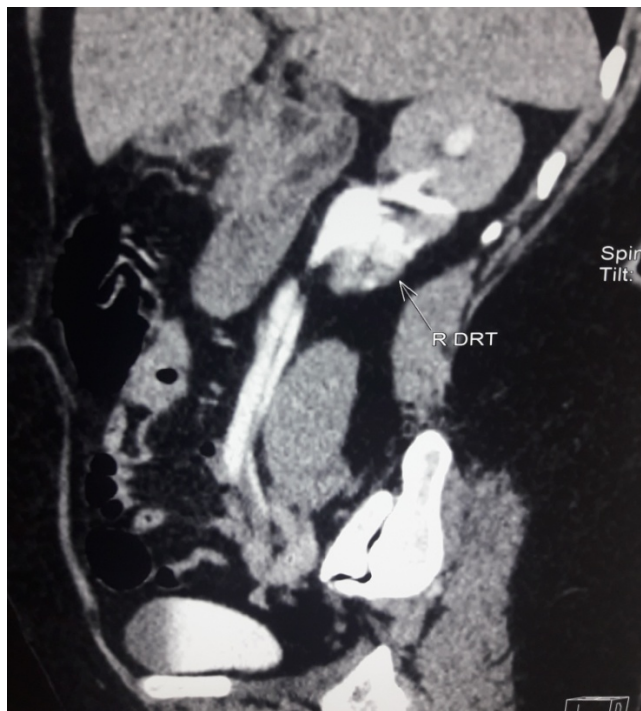
A 50-year-old patient with no significant pathological antecedent, presenting with symptomatology of an irritative syndrome with moderate low-grade lumbar pain that has been evolving for several years. In the clinical examination, the patient in good general condition, no fever, no lumbar sensitivity and external genital examination without abnormalities. At first, a cytobacteriological examination of the urine was done negative income.

A cystoscopy performs objectives the presence of a right ureterocele a right ureteral delivery with two left ureteral deliveries, in front of these data a uroscanner was asked objective the presence of a bilateral ureteral duplication with a ureterocele without dilation of the renal

cavities with a right kidney of small size compared to the left kidney (Figures 1-3)

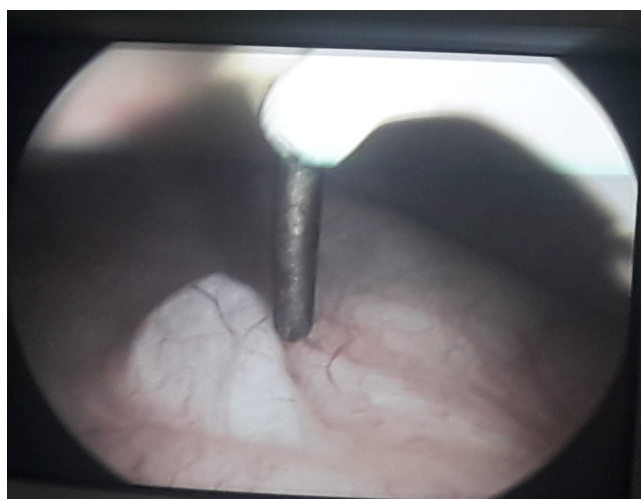


**Figure 1:** Objective pre-operative image scanner bilateral ureteral duplicity and asymmetry of both kidneys.



**Figure 2:** Objective preoperative computed tomography of right ureter duplication and presence of the right ureterocele.

The therapeutic decision was to treat initially the ureterocele and respected duplicity if the evolution is favourable after the cure of the ureterocele.

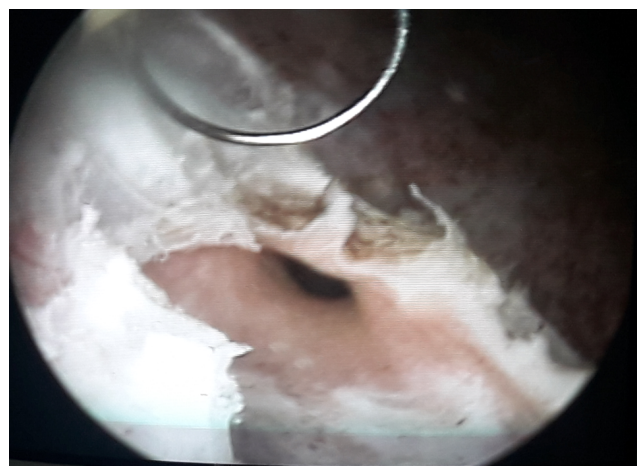


**Figure 3:** Cystoscopic image of the right ureterocele before the incision.

The patient had an initial endoscopic Ureterocelotomy; Ureterocelotomy was performed by puncture-electrocoagulation cystoscopy (Figure 4). The follow-up was systematized: clinical and paraclinical: ultrasounds at 3 months, 6 months, one year then every

year, Renal DMSA/DTPA scintigraphy showed functional asymmetry in favour of the left kidney, but good drainage on the right side after treatment of the ureterocele justifying the preservation of the right renal unit.

The evolution was satisfactory with the disappearance of the irritative syndrome with normal resumption of urination as well as a disappearance of low back pain.



**Figure 4:** Cystoscopic image of the ureterocele after initial endoscopic Ureterocelotomy

## Discussion

Duplicated ureters deriving from a single kidney is a rare congenital anatomical variation [3] where the ureters may either join to form a partially duplicated ureter or they may remain fully separated and create a complete duplication, as in the presented case. Unilateral ureteral duplication was found in up to 0.8% in autopsy studies, while bilateral duplication was found in 0.16–0.32% [3].

The etiology of ureteral duplication in the majority of cases is due to premature splitting of ureteral buds, remnants of wolffian duct and in some cases because of the presence of two separate ureteral buds [4]. Duplication is believed to be inherited in an autosomal dominant way, presenting with incomplete penetrance [5] and often appears in Caucasian females, as in our case [6].

The clinical presentations of ureteral duplication are various and age-related [4]. Majority of cases with duplicated ureters; the patients are asymptomatic and usually are diagnosed accidentally [7]. The most common clinical presentation of ureteral duplication is recurrent UTI in children and VUR, flank pain and obstruction in adults [7].

Some cases of duplicity ureteral with ureterocele stone have been reported but complete ureteral duplication with separate orifices in the bladder is very rare. In these patients renal morphology, ureteral condition and renal function should be evaluated. Complete ureteral duplication without obstruction can be missed by sonography [4]. Unequal hydronephrosis between upper and lower poles of the kidney is strongly supportive for complete ureteral duplication [4]. The peculiarity of our observation and the presence of bilateral ureteral duplication with the presence of a unilateral ureterocele and revealing sign were related to bladder irritation caused by the ureterocele. The

endoscopic treatment of the ureterocele allows, on the one hand the disappearance of the irritative symptomatology and, on the other hand to remove the obstruction on the upper system of the right kidney.

## Conclusion

Complete duplication of the ureters is a very rare clinical entity that may be asymptomatic or have various clinical signs; the presence of bilateral complete ureteral duplication with a ureterocele associated with our knowledge in the literature is exceptional. The therapeutic attitude is very variable from conservative treatment to nephrectomy in case of non-functional kidney on the scintigraphy; the therapeutic choice depends mainly on the quality of the renal parenchyma.

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