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Complete Ureteral Duplicity Complicated by Lithiasis with Right Ureterohydronephrosis with Left Renal Excretion Defect: Apropos of a Clinical Case

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Abstract

Ureteral duplication is a congenital malformative uropathy that occurs most often in children. Complete ureteral duplication is defined by a kidney that has two ureters with two orifices that communicate to the bladder through two ureteral meati. It is an anatomical variant that remains rare. Its early discovery is due to a lack of diagnostic means, hence the occurrence of long-term complications. To this end, we observe an increased importance of the morbidity linked to the late diagnosis of this duplicity. Our objective was to show the importance of the morbidity linked to the late diagnosis of this anomaly, the incidence of the infection and the complications that this pathology poses as a problem. It was a clinical case of fortuitous discovery taken care of by a general surgeon in the general surgery department of the hospital "Mother Child" Le Luxembourg Bamako Mali. We report a case of complete ureteral duplication complicated by ureterohydronephrosis on a lithiasis wedged in the uretero-vesical junction of one of the left ureters in its lower portion which required a uretero-lithotomy with bladder reimplantation of the left ureters and secondly to a uretero-lithotomy with bladder reimplantation after two months. The postoperative course was simple.

Keywords

Ureteral duplication, Congenital malformation, Duplicity, Adult, Bamako Mali

1. Introduction

Ureteral duplication is defined by a kidney that has two excretory ducts with two ureteral orifices or meatuses. Ureteral pyeloduplication is a malformative uropathy of the urinary tract. It becomes pathological in the event of anomalous junction and therefore drainage of one or both ureters [1] [2].

The frequency of this congenital pathology is estimated between 0.6% to 0.8% of the general population.

Its early diagnosis is rare in our context because of fortuitous discovery [3] [4] [5].

This ureteral duplicity most often increases the frequency of urinary tract infections and low-noise complications [6].

Our main objective is to prove the importance or the gravity of the morbidity linked to the late discovery of this malformative congenital uropathy. The purpose of this work is to report a case and to review the literature. We report a clinical case of complete lithiasic ureteral duplication complicated by right ureterohydronephrosis with a defect of left renal excretion.

2. Observation

Mr. S.K., aged 28, a peasant consulted on August 8, 2022, for abdominal and pelvic pain such as colic, relieved by vomiting and accompanied by burning while urinating, pollakiuria, initial hematuria at the beginning and then terminal, all evolving since 2017.

A history of repeated urinary tract infections and urinary schistosomiasis treated with biltricide 600 mg were reported in childhood. The general signs were dominated by a fever at 38.5˚C, TA = 12/08 cm Hg, Pulse = 82 beats per minute and a good general condition. Clinical examination does not find organomegaly, or diffuse abdominal pain simulating an acute abdomen. Elsewhere the rest of the clinical examination is unremarkable.

The emergency abdomino-pelvic ultrasound showed dilation of the pyelo-calicielle cavities of the left kidney without a clearly visible lower obstacle: left renal colic.

The uro-computed tomography objectified a lithiasis of the lower ureters (non-obstructive on the right) with uretero hydronephrosis associated with an excretion defect on the left and a bladder seen in low fullness presenting a more marked calcification at the level of the bladder dome (**Figures 1-3**).

The biological assessment showed the biochemistry a slightly low total protein 60.84 g/l (N = 62 to 80). On the blood count, leukocytes were at 7000/mm^3 (N = 4000 to 10,000/mm^3), serum creatinine at 106.08 micrommol/l N = (53 to 120) micron mol/L.

Midline laparotomy below the umbilical under locoregional anesthesia with a retroperitoneal approach to the left ureter found two dilated ureters (**Figures 4-7**) with a lithiasis wedged into the left uretero-vesical junction. We performed uretero-vesical reimplantation of the two left ureters with two ureteral drains after

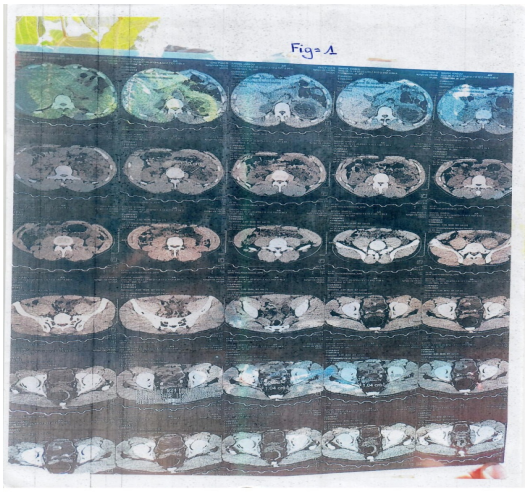

Figure 1. Images without contrast.

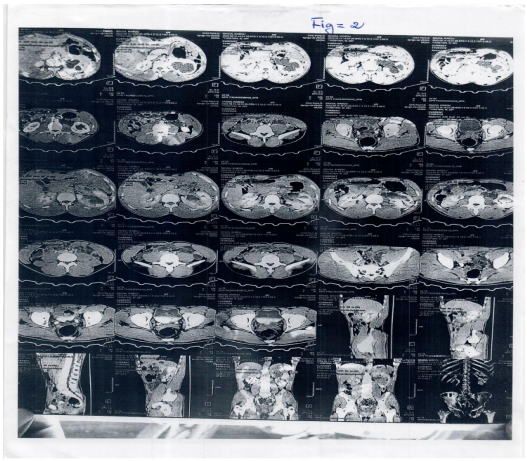

Figure 2. Images with contrast.

Figure 3. Densitometric tomo images with left ureteral calculus + ureter hydronephrosis and right renal muteness.

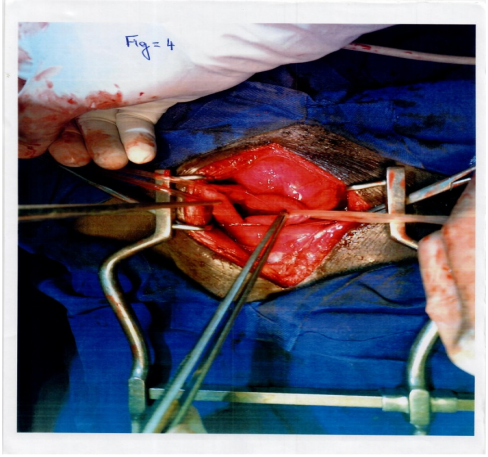

Figure 4. Isolation of the two (02) ureters.

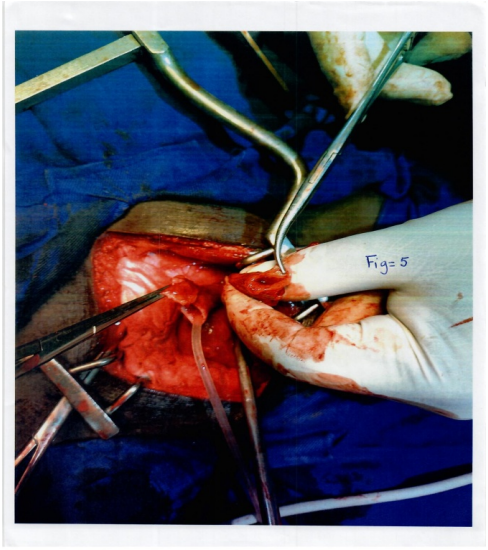

Figure 5. Ureteral catheterization.

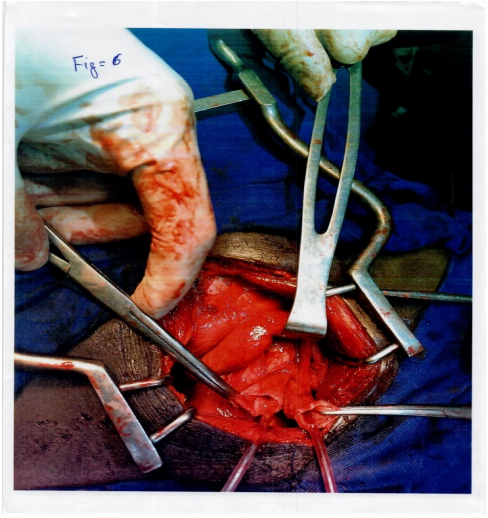

Figure 6. Left ureteral renal drainage before reimplantation.

left uretero-lithotomy (Figure 8; Figure 9) and plane-by-plane closure (Figure 10). We used ceftriaxone 1G IV (1G × 2 times daily for 3 days); Ofloxacin 200 mg per os (1 tablet × 2 times a day) and paracetamol 1G in infusion on demand. Dressings were done every four days after the patient was discharged. The patient was discharged on D7 postoperative after removal of the two left ureteral drains with a CH18 two-way urethral catheter.

The postoperative course was simple. The right ureteral lithotomy was scheduled two months later during which we observed lumbar ureteral lithiasis with significant ureterohydronephrosis upstream during the operation. The postoperative course was also simple; intravenous urography performed in three months is normal and functionality of the left kidney was considered mute (Figure 11, Figure 12).

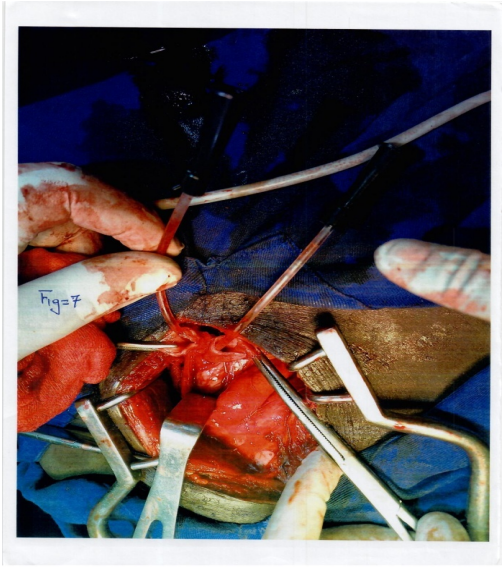

Figure 7. Left ureteral renal drainage before reimplantation.

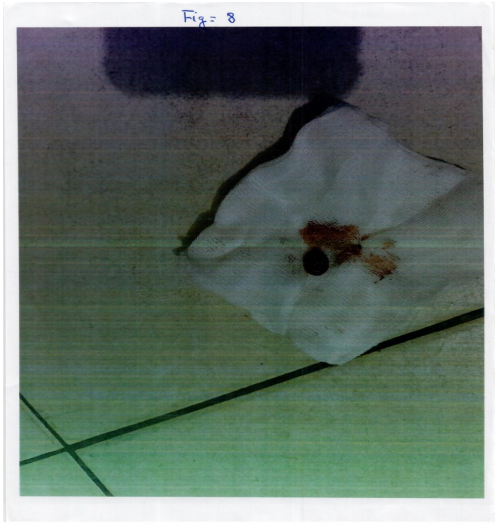

Figure 8. Extraction of lithiasis.

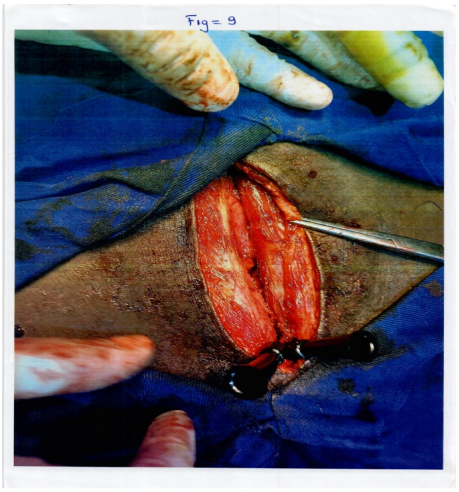

Figure 9. Closure after catheterization.

Figure 10. Monitoring.

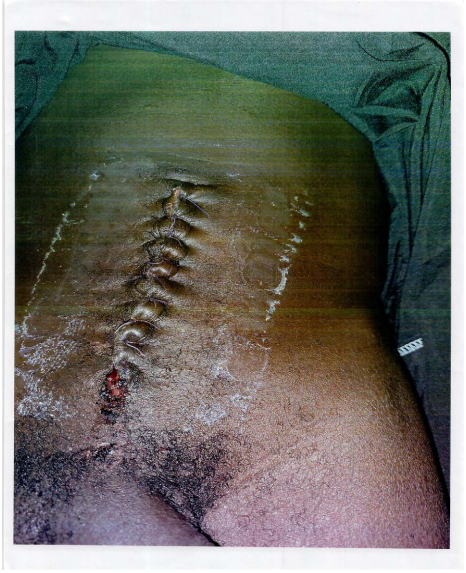

Figure 11. Postoperative continuation on day 7.

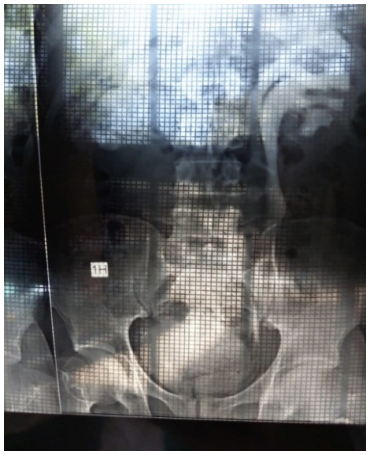

Figure 12. UIV control at two (02) months of the mute left kidney.

3. Discussion

The management was motivated by a complication of this ureteral duplicity unknown until the day of the intervention despite the uro-computed tomography whereas in the literature this management is done from the neonatal period or in childhood [3] [5].

According to the classification of SMITH in 1946, our case corresponds to type II (Three renal units, one of them drained by a simple ureter and the two others by two ureters joining with two ureteral meati as described by certain authors [4].

The association of stones is very frequent in a context of late discovery of the duplication according to the literature [3] [4] [5] [6] [7]. Repetitive urinary tract infections and pain such as renal colic were the motivations for the discovery of this ureteral duplication in the literature [8] [9]. Imaging has an important place in the assessment of this pathology to specify its type, to look for possible associated complications and to guide the therapeutic gesture. A computed tomography must be performed in order to better specify the lesions. Its interest has also been highlighted in the literature [4] [10] [11] [12].

The diagnosis of duplicity is found intraoperatively and is therefore fortuitously discovered, as in many authors [2] [4] [6] [7]. Our course of action consisted of uretero-vesical reimplantation after a lithotomy of the uretero-vesical junction like many authors where conservative treatment was the most frequent option given the early diagnosis [1] [4] [6] [7]. The postoperative course was simple, as described in the literature [3] [4] [6] [10].

4. Conclusion

Duplicities of the ureter are sometimes discovered by chance during radiological or computed tomography exploration, therefore without apparent clinical urological signs. Pathogenic ureteral duplicities require medical and surgical management, most often conservative as long as we can, accompanied by increased long-term monitoring. Early management of congenital anomalies of the ureters

helps preserve renal capital. Moreover, the late discovery of the pathogenic form leads to destruction of the renal parenchyma.

Acknowledgements and Conflicts of Interest

The authors thank the patient who kindly gave his informed consent and there is no conflict of interest.

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