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Left Ureterocele Complicated by A Ureteral Stone: About A Case and Review of the Literature

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Abstract **Original Research Article**

Summary: It is the pseudo-cystic dilatation of the sub-mucosal terminal ureter. It is a rare congenital pathology, diagnosed more and more in newborns because of antenatal exploration, and which often remains asymptomatic in adults and discovered fortuitously, if not revealed in the context of complications dominated by lithiasis. In our case, we were dealing with a 30-year-old patient, without any notable pathological history, who was admitted to the emergency room for the management of renal colic. The etiological work-up was in favor of a left orthotopic ureterocele, complicated by lithiasis in the form of an iliac ureteral stone.

Keywords: sub-mucosal terminal ureter, newborns, congenital pathology, Ureteral Stone.

INTRODUCTION

Ureterocele is a rare congenital malformation characterized by a pseudocystic dilatation of the lower end of the ureter. It usually occurs at an early age in newborns and infants. Its discovery has become more and more frequent since the systematic practice of antenatal ultrasound. The adult form is much less frequent and has been the subject of only rare observations in the literature. It is complicated by lithiasis in 30 to 60% of cases [1]. We report the case of one patient and discuss the diagnostic and therapeutic difficulties associated with this particular form of congenital malformation of the upper excretory tract.

OBSERVATION

A 30 year old patient, without any notable pathological history, presented to the emergency room with a left renal colic, of progressive onset; resistant to analgesic treatment and evolving in a context of apyrexia. The physical examination was unremarkable with an apyrexic patient, but who presented a typical left renal colic pain not relieved by analgesic treatment in morphine titration. An abdominal ultrasound revealed a pyelocalic dilatation of the left kidney with a pyelone measured at 21 mm, without any individualizable obstacle. A complementary scan was requested and came back in favor of a left ureterocele, with a left uretero-pyelocal dilatation upstream of an iliac ureteral calculus of 11mm of great axis. The patient received a double J catheter rise in the emergency room, for a first urinary drainage and to prepare a subsequent rigid ureteroscopy with endoscopic cure of the ureterocele.

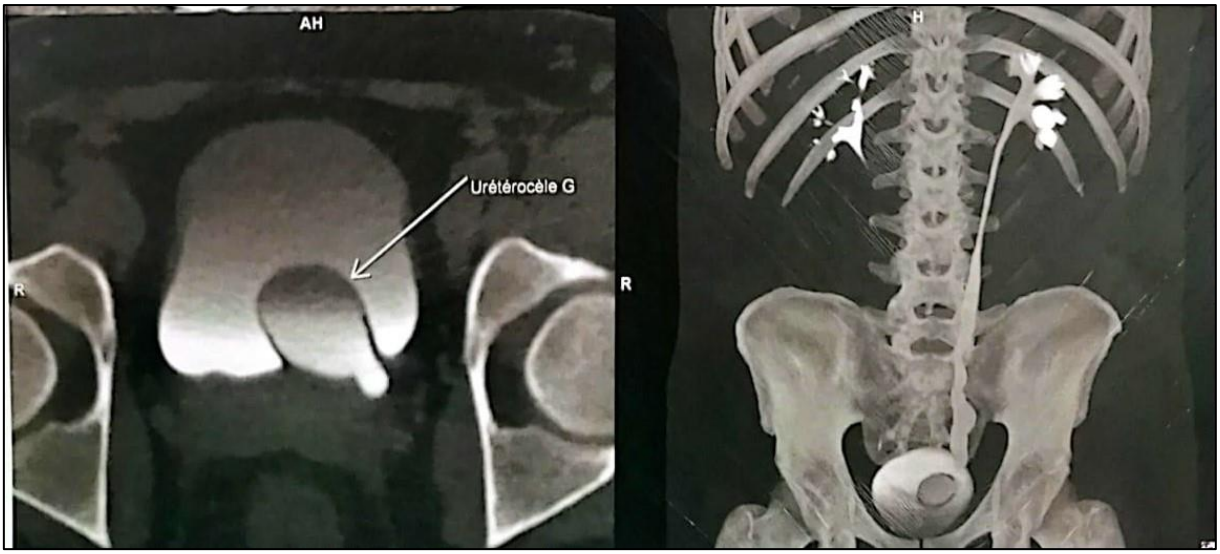

Figure 1: Abdominal-pelvic CT scan showing a left ureterocele complicated by an 11 mm long iliac ureter stone with left pyeocalic dilatation

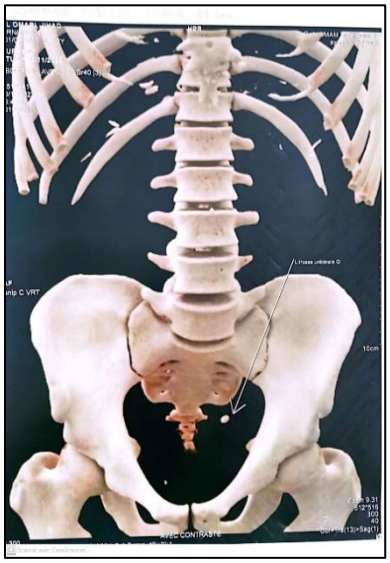

Figure 2: 3D reconstruction of abdominal-pelvic CT scan objectifying the left iliac ureteral stone

DISCUSSION

The term ureterocele, coined by LESHNEW in 1912, refers to a pseudo-cystic dilatation of the submucosal segment of the intravesical ureter, between the detrusor hiatus and the ureteral meatus [2]. This congenital pathology is rare, its incidence is variously appreciated, varying from 1/500 [3] to 1/4 000 newborns [4]. It has extremely variable aspects depending on its size, its development towards the cervical-urethral tract, the single or double nature of the upstream excretory tract and its impact on the upper urinary tract. The severe forms of ureterocele are all currently detected in children by pre- or neonatal ultrasound. Ureterocele in adults is a rare entity, well tolerated, considered benign and often revealed by a complication, notably lithiasis [5].

Since the first classification proposed by ERICSSON in 1954, several classifications of ureteroceles have been reported, based on anatomopathological criteria. The classification of BRUEZIÈRE and BONDONNY remains the most used because it is simple, adapted to the clinical context and to therapeutic proposals. It comprises 4 types [4]:

- Type A: Intravesical ureterocele on simple ureter.
- Type B: Ectopic ureterocele on simple ureter.
- Type C: Intravesical ureterocele on pyelo-ureteral duplicity.
- Type D: Ectopic ureterocele on pyeloureteral duplicity.

The ultrasound diagnosis of ureterocele is easy and is based on the discovery of an image of an intravesical cyst. This is the classic "cyst within a cyst" image reported by GOLDBERG in 1977, cited by

GRIFFEN [3], and it also allows the anterior wall of the ureterocele to be studied, which is a prognostic element for certain authors [6]. Doppler ultrasonography is useful in small ureteroceles and in case of differential diagnosis with a bladder tumor or a lithiasis enclosed in the ureteral meatus by showing the typical image of intermittent urinary jet coming from the meatus of the ureterocele. Ultrasound and magnetic resonance imaging can be helpful in the diagnosis especially in pregnant women and patients with iodine allergy. A stone is an exceptional complication in children [7] whereas it occurs in 30% to 60% of cases in adults [5].

These stones, which are usually autochthonous, form in the cystic end of the ureter upstream of a stenotic meatus. A long period of ureteral dilatation and atony leads to stasis, an ideal environment for lithogenesis. This stone may remain asymptomatic for a long period of time.

In our patient, the diagnosis of ureterocele was easy and was discovered following the reported renal colic which objectified the realization of an abdomino-pelvic CT. It is a type A according to the classification of BRUEZIÈRE and BONDONNY.

CONCLUSION

Adult ureterocele is a rare entity, benign, well tolerated, developing on a single or double ureter but with a moderate impact and often revealing itself by a complication notably lithiasis.

With the advent of more precise and better adapted endo-urological instruments, and the codification of the different endoscopic procedures, endoscopic treatment is becoming more and more interesting compared to classical surgical treatment.

Declarations

Ethics approval and Consent to participate: Not applicable

Consent for publication: The patient gave his informed and written consent for the publication of this work.

Availability of data and material: Not applicable

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Authors' contributions:

AL, OJ and YB analyzed and interpreted the patient data regarding the subject. AE, MA, and AA were a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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