A Child with Right Complete Ureteral Duplication Revealed by Sepsis in Northern Benin: A Case Report

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Abstract

Upper urinary tract abnormalities are relatively common and may be diagnosed before or at birth. Some cases will be seen during complications that most often are obstructive. We herein report one case of complete right ureteral duplication revealed by sepsis. The case involved one little girl aged 3 years, referred from a peripheral health center for prolonged fever. Physical examination found out a right flank mass connecting with the lumbar spine, renal ballottement, and pain due to a blow to the right flank. Further explorations helped establish the diagnosis of complete duplication of the right ureter with the destruction of the upper renal pelvis. Little girl benefitted from a dual antibiotic therapy combined with partial nephrectomy of the right kidney upper pole. Infectious are serious complications in upper urinary tract obstructions resulting in kidney destruction; therefore, early diagnosis is required.

Keywords
Ureteral Duplication; Sepsis; Nephrectomy; Child

Introduction

Ureteral duplication is one of the most common defects of a child’s urinary tract [1]. It is reflected by the existence of two pelves drained by two ureters at the level of one or of both kidneys. Its clinical expression is variable. More often asymptomatic it can be discovered incidentally during a medical examination performed for other diseases. Sometimes, it may be revealed during serious complications, such as repeated urinary tract infections and even septicemia with the destruction of the renal parenchyma. We herein report the case of complete ureteral duplication revealed by severe sepsis in a 3-year little girl in the pediatric unit of Borgou/Alibori Regional teaching Hospital in Northern Benin.

Observation

The subject was a 3-year little girl, with no particular medical history, referred from a peripheral health center for prolonged fever. That fever which oscillated between 39 and 40°C has been progressing for two weeks, associated with food vomiting, hypogastric pain and release of dark urines. The physical examination had identified an altered general state, a temperature of 38ºC, a heart rate (HR)
estimated at 180 beats per minute (bpm), a respiratory rate of 50 counts per min, a blood pressure of 100/60mmHg, cold hands, an extended time of recoloring; and a weight of 17Kg. Abdominal palpation made it possible to find out a smooth, renitent and painful right flank mass in contact with the lumbar spine. Genital organs were normal. The urine test strip had revealed the presence of white blood cells and nitrites.

An abdominal ultrasound had shown a fluid mass with heterogeneous content pushing the right kidney downwards. The contralateral kidney was normal. Uropelvic computed tomography had highlighted a heterogeneous fluid mass located in the medial cranial part of the right kidney with spur sign. The right ureter was visible in the back of the mass (Fig-1). The cyto-bacteriological examination of urine with culture and antibiogram had highlighted leukocyturia of 12000/ml, bacteriuria estimated at \(10^6/ml\) with isolation and identification of *Klebsiella Oxytoca* which was sensitive, among others, to gentamycin. Complete blood count had revealed hyperleukocytosis at 23G/L with the predominance of polymorphonuclear leukocytes (75%). C-reactive protein was positive at 48mg/L. The blood concentration of creatinine was normal at 8mg/L. As regards therapy, the little girl received a vascular filling with a salted serum of 9/1000 concentration. This was followed by antibiotic therapy consisting of ceftriaxone with a dosage of 100mg/kg /j during 10 days combined with gentamycin for 5 days. Partial nephrectomy of the upper pole had been performed a second time. In the preoperative phase, two collecting systems had been identified on the right side: ureter of the upper renal pelvis was dilated with 750cc of dark urine and parenchyma was completely wiped out; the parenchyma and ureter of the lower renal pelvis were normal (Fig-2). Postoperative side-effects have been simple. The cyto-bacteriological examination of urine cultures was normal after treatment. The little girl after doing well has been seen regularly.

Discussion

Ureteral duplication is a common malformation of the urinary tract. One child out of 125 is carrying this anomaly. Female subjects are the most affected [2]. The right and left kidneys are equally affected; which may be bilateral in 20 to 40% [1].

Anatomically, two variants are described: partial duplication or ureteral bifidity, and complete duplication or ureteral duplicity. In the partial form, the two ureters originate from the kidney and join together at a variable level before liaising with the bladder. In the complete form, both ureters are independent throughout their route till ureteropelvic junction [1]. There are uncommon forms: inverted duplication [2,3]. Sometimes, they may be associated with other malformations: vesicoureteric reflux,
As a malformation, ureteral duplication is common among children. It consists of two anatomic forms: ureteral duplicity and ureteral bifidity. In the context of ureteral duplicity, signs are noisy when other malformations are associated with it, especially vesicoureteric reflux and ectopic anastomosis cases. Urinary infection is the main way of the revelation of that malformation. Therefore, early diagnosis is urgently necessary.

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Declaration of Interest
The authors declare that there is no conflict of interest.

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