

Case report

Supernumerary right kidney with its own urethra: a case report and literature review

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Abstract

There are only a few reports on supernumerary kidney. However, its discovery is difficult in places where diagnostic facilities are not easily accessible. We present a case of a 9-year-old girl with a congenital malformation and a supernumerary kidney at the right upper pole of the right kidney with a mega urethra in which there is pus. The main complaint was a mild, persistent lower abdominal pain associated with vaginal reflux. Urine analysis and culture as well as serum blood values were within normal limits. The diagnosis of visceral malformations, particularly a supernumerary kidney, is not easy, especially in an environment where diagnostic facilities are not easily accessible.

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Introduction

Supernumerary kidney is a rare congenital anomaly, with about 100 cases reported in the literature [1]. Bilateral supernumerary kidney is an even rarer anomaly, with only four cases having been reported thus far [2]. Herein, we report a case of unilateral supernumerary kidney, which is being reported for the first time at the center for traumatology and surgery of Lubumbashi in the Democratic Republic of the Congo. This case had never been reported in the city of Lubumbashi. In this report, an attempt is made to describe the highlights in the diagnosis and management of patients with supernumerary kidneys as well as a thorough review of the literature.

Patient and observation

A 9 year old girl with a congenital malformation and supernumerary kidney at right upper pole of the right kidney with a mega urethra in which there is pus. The main complaint was a mild, persistent lower abdominal pain associated with vaginal reflux. Urine analysis and culture as well as serum blood values were within normal limits. Rather, the presumptive diagnosis was: right vesico urethral reflux, mega urethra, urethral vaginal fistula. Cystoscopy and the exploration of the fistula were made. Contrast-enhanced computerized tomography (CT) scan revealed: Pancreas, liver and spleen were normal looking, viewing both urethras right and left and a duplication of pyelocaliciellious urethral right cavities; a lack of opacity and the upper right urethra which are significantly dilated. Para bladder cannulated structure corresponds to the urethra which measures 2.5 cm wide. The lower urethra is not dilated my side is ready inserted a bifid renal pelvis urethra without any obstruction. (Figure 1, Figure 2, Figure 3). No significant ganglions tiller.

Discussion

Embryologically, supernumerary kidneys are formed by aberrant division of the nephrogenic cord into two metanephric blastemas with bifurcation of one bud. The supernumerary kidney may be either totally separate from the normal kidney or connected to it by loose areolar tissue. Supernumerary kidneys have been reported to be associated with various congenital anomalies; ectopic ureteric opening, horse- shoe and pseudo-horseshoe kidney [3], coarctation of the aorta [4], ureteral and vaginal atresia, complete duplication of the urethra and megaureter [5]. Because of the wide range of combined congenital anomalies and the relative rarity of such cases, it is difficult to standardize a protocol for diagnosis and, thus, over-diagnosis with many unnecessary imaging tests is done. Therefore, diagnosis of patients with supernumerary kidneys represents a challenge. In the literature, majority of these cases were diagnosed using many kinds of radiological imaging techniques, including ultrasound, CT scan, IVP, magnetic resonance imaging (MRI), CT angiography and dimercapto succinic acid (DMSA) and diethylene triamine pentacetate (DTPA) scans [6].

While some authors have reported that IVP, CT and ultrasound are adequate for the diagnosis of supernumerary kidneys, other studies have included MRI, DTPA, DMSA and CT angiography in addition [6]. However, sometimes, it is so difficult to diagnose supernumerary kidney in the low and middle income country especially because of the lack of appropriate tools or the fact of lack of knowledge in terms of interpretation of results from the CT scan, Ultra sound, magnetic resonance imaging (MRI), CT angiography. In

our case, CT scan, cystoscopy and ultrasound have been made. Only the CT result shows both right and left urethras and the duplication of right urethra measuring 2.5 cm wide. The lower urethra is not dilated but is laterally inserted a bifid renal pelvis urethra without obstruction. (Figure 1, Figure 2, Figure 3). The diagnosis of supernumerary kidney at right upper pole of the right kidney with a mega urethra in which pus was found during the surgery with a birth defect (Figure 4).

Conclusion

The diagnosis of visceral malformations, particularly a supernumerary kidney is not easy, especially in an environment where diagnostic facilities are not easily accessible. The present reported case is not original but this attention to Lubumbashi where that case has been observed for the first time in Lubumbashi and especially the center of surgery and traumatology of Lubumbashi.

Competing interests

The authors declare no competing interest.

Authors' contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the case.

Figures

Figure 1: Abdomen uroscan portal phase

Figure 2: Abdomen uroscan late stage

Figure 3: Abdomen uroscan control

Figure 4: Location of the supernumerary kidney during the surgery

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Figure 1: Abdomen uroscan portal phase



Figure 2: Abdomen uroscan late stage

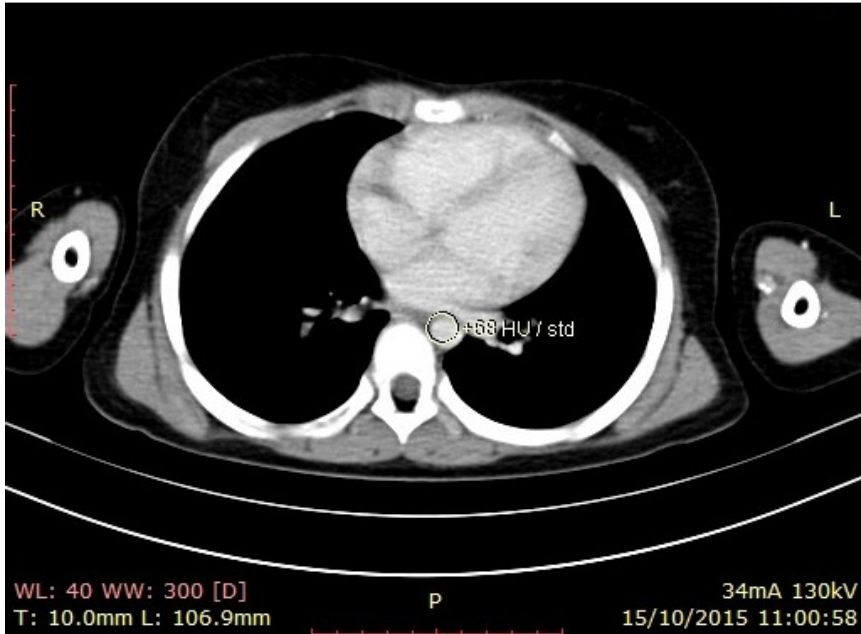


Figure 3: Abdomen uroscan control

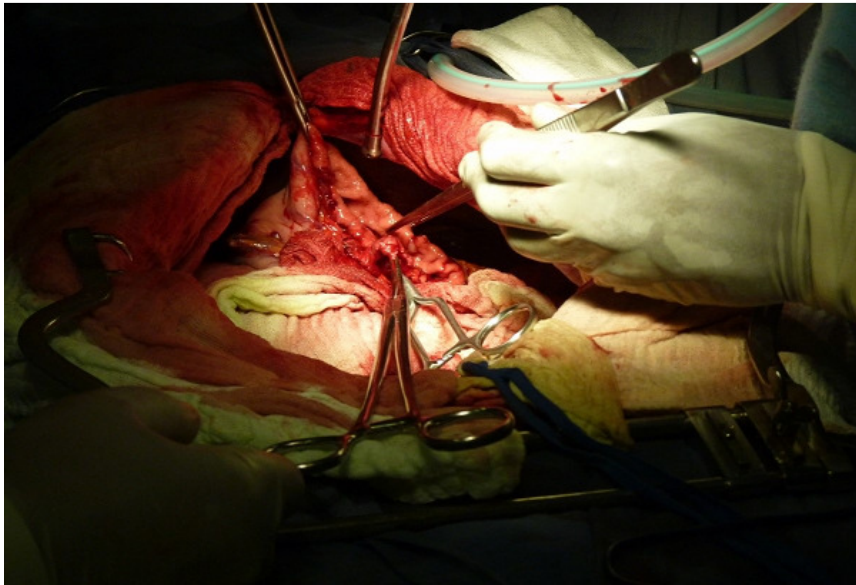


Figure 4: Location of the supernumerary kidney during the surgery