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Report of a clinic case of a double system ectopic ureterocele in an African infant☆

Mbaye Fall*, Aloise Sagna, Faty Balla Lo, Gana Khoulé, Marie Diop, Ibrahima Fall

Service de Chirurgie Pédiatrique, Centre Hospitalier National d'Enfants Albert Royer, Dakar, Senegal

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ABSTRACT

We report on the observation of a 30-month-old female newborn that was treated for a urinary infection. The medical imaging revealed the existence of a right double system ureterocele with vesicorenal reflux on the ureter of the upper pyelon and a bifid left ureter. The treatment consisted in an ureterocelectomy, a reimplantation of the two right ureters and a repair of the vesical floor. The external drainage of the upper pyelon allowed us to make sure of its functionality that was about 15% of the full renal function. The post-op follow-ups have been simple and thirteen months later, the newborn is doing well and does not present any sign of urinary infection.

An ureterocele is a pseudokystic dilatation of the under mucous membrane portion of the vesical ureter. It is a consequence of a lack of absorption of the Chwalla membrane during the embryonic life cycle [1]. The ureterocele appears most of the time on a double system, revealed by a simple urinary infection that can also be complicated by a pyelonephritis in other cases [2,3]. The diagnostic is made once medical imaging is under way but a scintigraphy allows a better appreciation of the functionality of the pyelon and research of eventual renal scars that are residuals of pyelonephritis [4]. These elements are to take into consideration in the choice of treatment. In Sub-Saharan Africa, ureteroceles are seldom diagnosed, contrary to the West. Is the lack of African series due to scantiness of diagnostic resources or to racial distinctive feature?

1. Observation

The patient is a 30-old-month female newborn, first of two siblings and the second child, a 6 month old baby, is in good health. There was a good follow-up of the pregnancy with three prenatal ultrasounds that did not reveal any morphological abnormalities of the extra abdominal and abdominal organs. She was born at 39 weeks at the hospital by a normal delivery. There is no history of urinary pathology in the family. The newborn presented two urinary infections after an interval of 3 months at the age of one year and a half. These infections led to an abdominal ultrasound that revealed a right ureterohydronephrosis and an ipsilateral ureterocele (Fig. 1A1, A2). After treatment of the urinary infection and negative bacteriological control, urethrocystography shows a vesicorenal reflux in the ureter of the upper pyelon and an intravesical filling defect looking like an ureterocele (Fig. 1B). CT urography shows a complete double system on the right side with a low secreting upper pyelon and a left bifid ureter (Fig. 1C1, C2 and C3).

A Pfannenstiel incision and a longitudinal vesicotomy allowed the identification of a prolabsed ectopic ureterocele at the level of the vesical neck and three ureteral orifices, two of them on the right side (Fig. 1D). The treatment consisted in an ureterocelectomy, a reimplantation of the two right ureters and a repair of the vesical floor. The catheter separation of the three ureteral orifices shows a secretion rate of the upper pyelon above 15%. The drains have been removed five days after surgery and the patient was released on the seventh day postoperative with a checkup scheduled one month later.

Thirteen months later, there was no sign of a new urinary infection. The checkup ultrasounds showed a soft thickening of the vesical floor.

2. Discussion

An ureterocele is a relatively rare condition and its ectopic form on a duplicated pyeloureteral system is the most frequent form in children contrary to adults [5–8]. This observation underlines the

* Corresponding author. Service de Chirurgie Pédiatrique, Centre Hospitalier National d'Enfants Albert Royer, BP 25755 Dakar, Senegal. Tel./fax: +221 33 825 03 08.
E-mail address: mbayefall0803@gmail.com (M. Fall).

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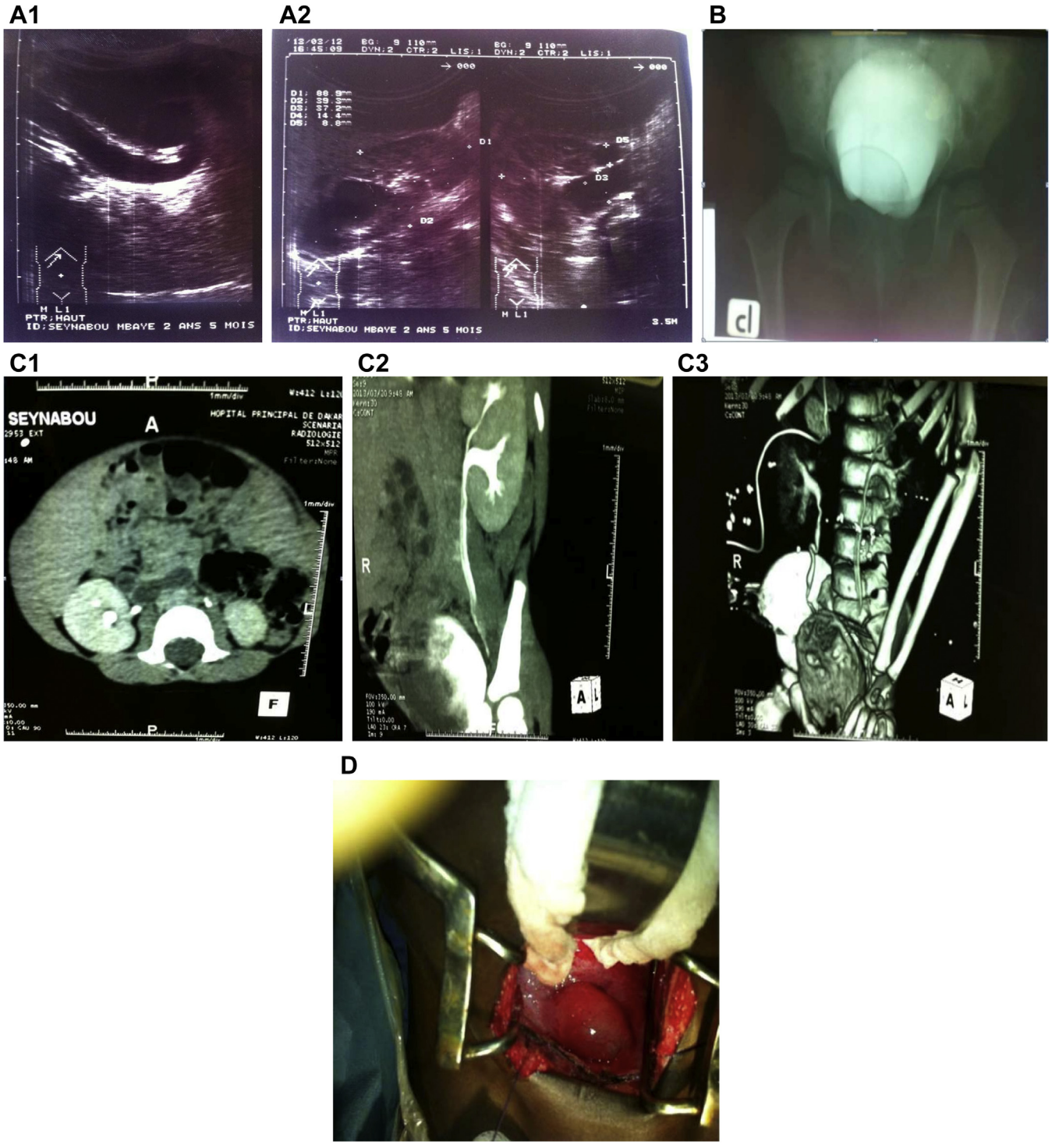

Fig. 1. A1: Dilatation of the ectopic ureter behind the bladder neck and intravesical cystic dilatation. A2: Right ureterohydronephrosis of the upper pyelon. B: A cystography showing an intravesical filling defect corresponding to the ureterocele and reflux into the uretere of the upper pyelon. C1: CT urography in axial section. C2: CT urography in sagittal section showing the right pyeloureteral duplication. C3: Reconstruction with a CT urography that shows right pyeloureteral duplication and a left ureteral bifidity. We note a defect of secretion in the right upper pyelon. D: Prolabsed ureterocele at the level of the vesical neck.

existence of ureterocele in a subject of African descent living in Sub-Saharan Africa. The lack of published series regarding this condition in children of African descent is rather due to a lack of pediatric urology specialists and diagnostic resources than a racial distinctive feature. Urinary infection is the mode of revelation in children, often accompanied with general signs in the foreground [2,3,8,9]. The diagnosis is made once ultrasound and cystography are under way and should be run by an expert. Ultrasound makes the diagnosis of ureteral duplication in 80%–90% of cases and can follow the path of the ectopic ureter dilated up behind the bladder neck. Typically the ureterocele occurs by intravesical cystic dilatation, limited by a thin rim. Sometimes it is difficult to distinguish the difference between a large ectopic ureterocele and ectopic ureter dilated displacing the bladder floor [10]. Cystography provides

complementary information by searching a retrograde opacification of ectopic ureter, reflux into the lower pyelon or in the contralateral kidney, and a filling defect of ureterocele. The intravenous urography, the CT urography or the magnetic resonance (MR) urography allow to look for pyeloureteral duplication and to assess the secretion rate of the kidneys.

Treatment may be radical, sacrificing the obstructed upper pyelon, or it may be conservative, in order to restore the function of the upper pyelon using an uretero-pelvic anastomosis by endoscopic incision of the ureterocele or an uretero-vesical reimplantation. The current trend is the conservation of parenchymal renal if the territory has retained function. Studies have shown that lesions of dysplasia are present in 20%–30% of parts for polar nephrectomy in ectopic ureter [11–13].

Ectopic ureters into the bladder neck have a better prognosis and are preserved in 80% of cases, against 30% for ectopic urethral, 30% for vaginal ectopic and 60% for vulvar ectopic [14]. Surgical treatment seems to give the best long-term results for the treatment of ectopic ureterocele. After ureterovesical reimplantation or resection of the upper pole, no reoperation was observed, unlike after endoscopic incision in the bladder level, operations were remaked in 100% of ectopic ureteroceles, 20%–57% of patients with preoperative reflux in the lower pole [15]. In a series of 165 patients, Husman and al show that in ectopic ureteroceles, reoperation rate for treating postoperative reflux in a group of patients with no preoperative reflux, was 15% after nephrectomy and upper pole, against 64% after endoscopic incision. In a second group of patients with preoperative reflux, the rate of reoperation in the bladder level is 84% after pole nephrectomy or after endoscopic incision [12].

This shows that the choice of treatment depends not only the seat of the ectopic orifice but also of all the clinical and radiological data.

Scintigraphy remains the best examination to assess the state of the pyelons. However, it is recent practice in our regions. Through this observation, we want to show the interest of using CT urography and ureter separate drainage to assess the upper pyelon functionality in the absence of scintigraphy.

3. Conclusion

Urinary tract defects are underdiagnosed in Africa and often at a late stage. The low number of specialists, the lack of diagnostic resources and the low socioeconomic status of populations are the main factors for such a phenomenon.

Conflict of interest

The authors have no conflict of interest to disclose.

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