Case Report

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Bilateral Ectopic Ureter : A Case Report with Literature Review

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Abstract

An ectopic ureter is a rare congenital renal anomaly that occurs as a result of abnormal caudal migration of the ureteral bud during its insertion to the urinary bladder [1]. Ectopic ureter is referred as the ureter is not having direct connection with the bladder and also it drains urine outside of the bladder [2,12,13]. In 80% of the ectopic uretercases, associated with a duplex collecting system [3,11]. A 3-year-5month-old girl presented with urinary incontinence from her birth regardless of achieving successful voiding pattern. Cystoscopy and genitoscopy was performed for the child and revealed small capacity of urinary bladder and also ureter opening was not able to identify. Contrast-enhanced computed tomography was done for the child and revealed a very small bladder and is not seen to jointed bytheir dilated ureters inserted in to bladder neck. The present case underwent surgical treatment likeuretericreimplantation of the ectopic ureters back into the bladder, with the partial resolution of the symptoms. The reported case does not represent any other symptoms except leakage or dribbling of urine from the birth. The presented case reminds us that congenital renal anomalyshould be considered even if any child had complaints of urinary incontinence from the birth. The child should be treated immediately.

Keywords: Ectopic ureter; Incontinence; Computed tomography; Child

Introduction

The exact cause of ectopic ureter is not knownbecause it is one of the rare congenital renal anomaly. Ectopic ureters are more frequently associated with duplex kidney system where there is single kidney will have two separate ureters, one will drains normally into the bladder while the other one is ectopic nature [2,14]. The male child with ectopic ureter, the ureter may get inserted into the lower urinary bladder, posterior urethra, seminal vesicle, ductus deferens, ejaculatory duct, and very rarely with the rectum. In female child, the most common site of ureter insertion would be bladder neck and upper urethra (33%), vaginal vestibule (33%), vagina (25%), and cervix and uterus (<5%) [1]. The incidence of ectopic ureters are 1 case in 1900 live births, but may go higher if the case not diagnosed when asymptomatic, especially in male child. It is most commonly affecting female kids, the ratio of F: M = 10:1 [1]. It can be difficult to diagnose when the child is asymptomatic but by doing CECT scans will help us todiagnose and confirm the case. Since the constant urinary leakage is normal during childhood period, but generally there will not be anyassociated abnormalities found from the urinary tract. Urinary incontinence is the one of the important symptom of an ectopic ureter, especially in female kids should be considered [4].

Case Report

A 3-year-5 month old girl was referred for the investigation of urinary incontinence. As parents said their child had continuous low volume urine leakage from the birth. She was constantly having dribbling of urine from birth but had normal voiding pattern. The parents are unable to specify whether there was any connection with standing, coughing, or effort. There was no any significant past medical illness except leakage of urine from birth. On regular physical examination the external

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genitalia appeared normal with no vaginal pooling of urine or ectopic ureteral orifice. External genitalia examination revealed normal urethral and vaginal openings, with an intermittent urine leakage. All the routine investigations were normal like complete blood count, serum electrolyte tests. A cystoscopy was performed under general anesthesia, it revealed ureter opening not able to identify, very small capacity bladder, dilated right ureter. As urologist had high suspicion of an ectopic ureter. The patient taken for contrast-enhanced computed tomography (CT) of the whole abdomen to visualize the entire urinary tract in better. The CECT was performed and revealed that both kidneys show normal size, shape, position, Left pelviccalyceal system is dilated. Also report shown that bladder is very small and is not seen to be jointed by their dilated ureters, the dilated ureters are seen to course towards bladder neck which could be probable site of opening of ureter. Definitive diagnosis of bilateral ectopic ureter was made. The reported case underwent uretericre implantation of ureters into bladder. In the postoperative period, the patient had complaints pain associated with surgery and child did not passed stool for 2 days as parents said. Post operatively hourly vitals monitored, 2 hourly urine output also monitored, maintained fluid and electrolytes.

Discussion

There are no known causes for this birth defect. According to the Committee on Terminology, Nomenclature, and Classification of the Section on Urology of the American Academy of Pediatrics, ureteral ectopia is defined as a ureter that terminates into an abnormal location. They also stated it may happen in boys or girls, but is more common in girls and also said there is no proof that the pregnancy may cause it [5]. The presentation of symptoms depends on the insertion site of the ectopic ureter, and this differs between girls and boys. The general signs of ectopic ureter are: urinary incontinence, Swelling in the abdomen, Urinary tract infections (UTI), Vesicoureteral Reflux (VUR). Boys with ectopic ureters do not often have incontinence, since the ureter drains inside the body. But they may still have signs of swelling or a UTI. Girl child with ectopic ureters may have complaints of leakage of urine because the ureter is draining directly into the vagina. This problem is clear after toilet training [6] [13]. The reported case also had leakage of urine from the birth as a only symptoms.

There are some basic tests to see the ureters, kidneys and bladder are ultrasound, Bladder X-ray (Voiding Cystourethrogram, or VCUG), Renal Flow Scan (MAG-3 or DMSA) or Magnetic Reasonance Urogram, Cystoscopy, MRI and CT scan are better at finding slight swelling of the ureter and the part of the kidney it drains [6,13]. The presented girl cystoscopy was performed under general anesthesia, report shown ureter opening not able to identify, very small capacity bladder. Then she underwent CECT as a definitive diagnosis of ectopic ureter.

Gregory R. Hanson *et al.* [7], studied 24 female patients with incontinence after toilet training or other symptoms caused by ureteral ectopia for Diagnosis of ectopic ureter as a cause of urinary incontinence. Revealed 19 initially had negative diagnostic tests. These combined tests consisted of 15 intravenous pyelograms (IVPs), 18 VCUGs, 14 ultrasound, five cystoscopies, one nuclear VCUG and one MRI, for 2 cases computed tomography (CT) was performed as the primary test revealing an ectopic system. Study results showed that 26 cases of ectopic ureters, the diagnosis was made by CT scan in 13, IVP in 5, and cystoscopy in 6, and ultrasound in one. One ectopic ureter was identified by exploration. They also said no cases were found a CT scan fails to identify an ectopic system [7].

The treatment of choice for ectopic ureter is surgical management.To prevent infection, the patient may be put on a low dose of antibiotics before surgery. The 3 types of surgery to fix this problem arenephrectomy, ureteroureterostomy, ureteral reimplantation [6]. The reported child undergone ureteric reimplantation, the ureter is reimplanted into the correct position where it joins the bladder. The recovery depends on which operation was done. Usually the infants and children need to stay at the hospital for 1 to 5 days. If a catheter (tube) was used, it will be taken out easily before the child goes home. The area where the catheter is placed will get healed by its own. Stitches will not be needed. If an internal drain was used, it needs to be removed 3 to 4 weeks after surgery [6].

Chadwick Plaire *et al.* [8] studied 32 patients with 33 ectopic ureters treated at the kidney level during the last 10 years. Revealed that ectopic ureters were associated with duplicated collecting systems in 31 cases and with single systems in 2, in 23 units upper pole heminephrectomy and partial ureterectomy were performed and upper tract reconstruction was done in 8 cases. Both patients with single systems underwent nephrectomy. Four patients (12%) required repeat surgery at the bladder level, including 1 who underwent ureteral

reimplantation for persistent ipsilateral lower pole reflux and simultaneous upper pole stump removal. The findings showed that 2 cases required a repeat operation to remove the stump due to recurrent urinary tract infections [8].

Viyay D upadaya *et al.* [9] studied 13 female patients and the findings of the study are eight cases of ectopic ureter with dysplastic kidney was seen on left side and in five it was on right side. Nephroureterectomy was performed for all the patients of the affected side because of poor functioning [9]. The exceptionality of this case is rare one, there were not much literature support found.

Baojun Gu *et al.* [10] shared 35 years' experience of managing duplex kidneys with ectopic ureter by simple anti reflux uretero cystic reimplantation, he presented 36 female children, aged 10 months to 13 years, were treated. Revealed 31 patients had follow-up data (range 11 months to 25 years). Postoperatively, there were no reports of dribbling incontinence, urinary frequency, lumbago or recurrent fever with the exception of urinary incontinence in 2 patients.Also stated Cystography and intravenous pyelography was performed for 27 cases and showed no bladder-ureter reflux and for 12 cases Superior kidney hydronephrosis improved [10].

Conclusion

Girls with continuous dribbling of urine should be considered immediately to have an ectopic ureteral orifice until proved otherwise. Patients with an ectopic ureter often will have no abnormality on initial assessment but imaging studies like CT scan may be helpful for deciding the treatment and managing the child is depends on the extent of renal function involved.

Conflict of interest: Nil

Support: None

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