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BILATERAL DUPLICATION OF RENAL COLLECTING SYSTEM AND UPPER URETER IN A YOUNG FEMALE: A RARE ANOMALY OF UROGENITAL DEVELOPMENT

Urology

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ABSTRACT

Duplication of collecting system and ureter is a very rare condition and bilateral occurrence is rarest condition to be diagnosed in urology. The incidence of bilateral complete ureteral duplication is less than 1%. We are reporting a case of bilateral duplication of renal pelvis and upper ureter in a young girl who presented with symptoms of urinary tract infection and loin pain. Her diagnosis was made on excretory urogram and she was managed conservatively .

KEYWORDS

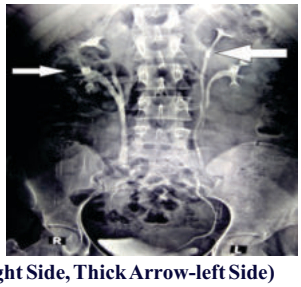
Duplication Ureteral Bilateral Excretory-urogram Rare

INTRODUCTION:

Bilateral complete duplication of the ureters is a rare condition.[1] The the incidence of ureteral duplication in routine autopsies is about 0.9% and out of which only one in 500 have bilateral complete ureteral duplication. If we talk about the findings on routine excretory urogram it is very less accounting just about 0.3 %.(3) Children undergoing antireflux surgery have an element of ureteral duplication in about 10% cases. Ureteral duplication is more common in females and when bilateral and complete, all four ureters may open orthotopically on the bladder trigone. The most common configuration is a complete duplication that results in two separate orifices. Often the lower opening of duplicated ureter have ureterocele which is difficult to diagnose. Most of the cases of ureteral duplication are symptomless however they may present with symptoms of urinary tract infection i.e. burning micturition, fever , frequency ,loin pain etc. They are usually an incidental findings on excretory urogram.

CASE REPORT

A young female of 17 years presented to the outdoor with chief complain of frequency of micturition for 6 months, burning micturition for fifteen days and pain in both flank for seven days. She had no history of haematuria, pelvic inflammatory disease and abdominal surgery in the past. Her routine examination of urine showed 6 pus cell /microscopic field and multiple epithelial cell, CBC had normal leucocytes count. Culture sensitivity of urine had no growth in 72 hours. Blood Urea was 36mg/dl and serum creatinine was 1.1mg/dl. The x-ray KUB showed normal study. The ultrasonography of whole abdomen and KUB region showed mildly dilated right upper ureter with mild hydronephrosis of right kidney without any obstructive cause and hence IVP was advised. Her IVP revealed duplication of pelvicalyceal system [FIGURE-1] and duplication of upper ureter [FIGURE-2]. The pelvicalyceal system was not dilated and the kidney was normally excreting and was non hydronephrotic. She was treated on the line of urinary tract infection with oral antibiotic, oral pain killer and urine alkaliser. Her symptoms got subsided within 10 days of treatment. She was advised to take plenty of fluid in her follow up period. Repeat ultrasound KUB done after one month. It was within normal limits and the urine examination had no pus cell.



(Thin Arrow-right Side, Thick Arrow-left Side)
Figure -1: Showing Bilateral Duplication Of Pelvicalyceal System

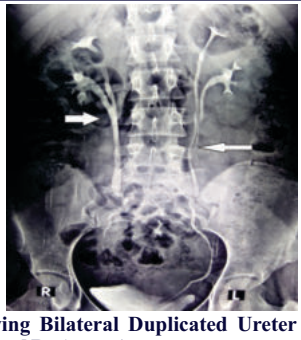


Figure-2: Showing Bilateral Duplicated Ureter (Junction Of Ureters Is Marked By Arrow)

DISCUSSION

As per Weigert-Meyer law, the duplicated ureter of the upper pole typically opens medially while the lower pole ureter opens laterally. Complete ureteral duplication may be associated with other congenital anomalies such as a short lower moiety intramural ureter causing vesicoureteral reflux or an upper moiety ureter with a ureterocele (orthotopic or ectopic) causing obstruction. Ureteroceles are congenital cystic dilations of the intravesical ureter found more frequently in female children. They are associated with either the upper segment of a duplex collecting system or with a single renal unit and ureter. The orifice of the ureterocele may be located in the normal position on the trigone (orthotopic ureteroceles), draining either a single ureter or the upper pole ureter of a completely duplicated system where it is frequently stenotic. More commonly, the orifice is ectopic, and it opens in the urethra or bladder neck (ectopic ureterocele). In some patients, the ureterocele may be bilateral. [4, 5, 6] Sometimes these developmental anomalies of ureter are symptomless and sometimes present with pain in flank , recurrent urinary tract infection, reflux of urine leading to hydronephrosis and renal parenchymal damage etc. the anomalous course and ectopic opening of common ureter causes stone formation and makes endourological procedure challenging. Most of the cases are managed conservatively. In our case patient was symptomatic but on investigating her she did not had any renal damage or any renal complications. Hence we managed our case conservatively .However if one is planning for surgery one should keep in mind that there is a common adventitial sheath which surrounds duplicated ureter within which outer musculature of both ureter intermingle. The level at which it begins is very important to plan a surgery. In males it usually begins at level of ductus deference and in female at level where it crosses uterine artery.[7] Separation of the duplicated ureters during intravesical dissection should be discouraged, because it can lead to sacrifice of the common blood supply running longitudinally between the two ureters. So if there is no any symptoms it is wise to not separate the ureter and manage the case conservatively.

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