

Triplicate Ureter with Contralateral Duplicate Ureter

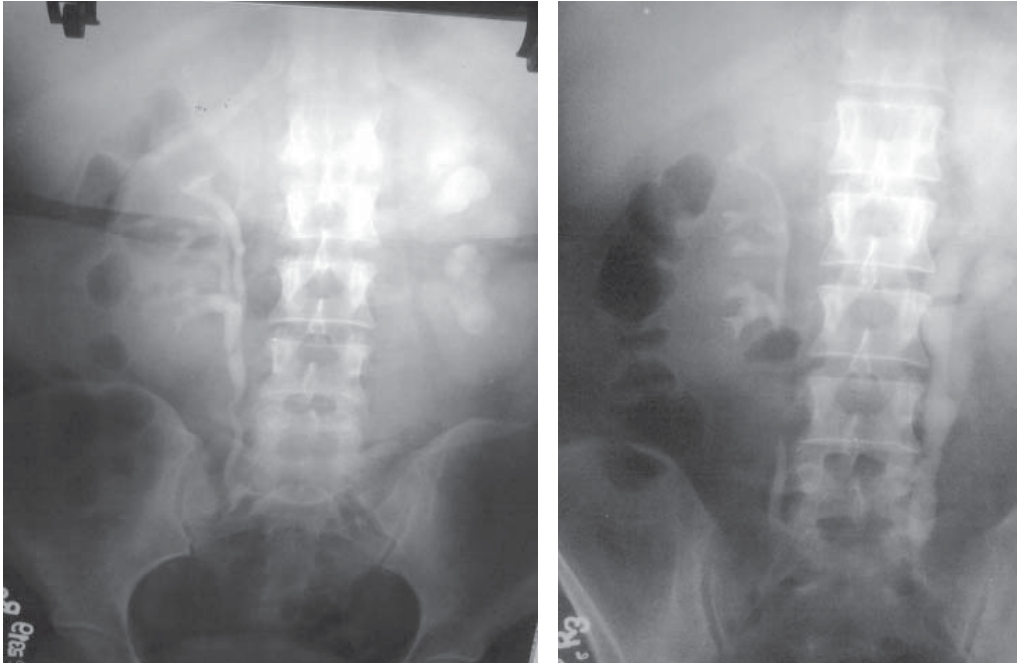


Fig. 1. Two X-ray films taken during intravenous urography.

Quiz

What do you see in this intravenous urogram?

1. Left lower ureteric calculus with proximal hydronephrosis
2. Left duplicated ureter with lower ureteric calculus
3. Right triplicate ureter with left duplicated ureter
4. Right triplicate ureter with left duplicate ureter with left lower ureteric calculus with proximal hydronephrosis

Answer

A 42-year-old female presented with left ureteric colic. Her physical examination was unremarkable. Urine analysis showed 2 to 4 pus cells with 8 to 10 red blood cells (RBC)/high power field. Her urine culture was sterile. A kidney, ureter and bladder (KUB) X-ray showed a radio-opaque shadow opposite the left sacroiliac joint (Fig. 1). An intravenous urogram was done which showed triplication of the right ureter with left duplicated ureter and left lower ureteric calculus with proximal hydronephrosis. There was no associated anomaly including ectopic insertion

of ureter and ureterocoele. She underwent an ureteroscopic removal of the left ureteric calculus.

Triplication of ureter is an uncommon congenital anomaly. Triplication of ureter with contralateral duplication of ureter is even rarer. Smith¹ classified ureteral triplication in 4 varieties. Type 1 is a complete triplication where 3 ureters from the kidney drain separately in the bladder with 3 orifices. Type 2 is an incomplete triplication which has a single ureter and the other 2 as bifid ureter. Thus there are 3 ureters from the kidney but 2 draining orifices. Type 3 is a trifid ureter with 3 ureters coming from the kidney with 1 draining orifice. Type 4 has 2 ureters from the kidney, 1 becoming an inverse Y bifurcation, resulting in 3 draining orifices below. Embryologically, this anomaly can be explained either by multiple ureteric buds or early division of one of the ureteric bud. The most frequently encountered urological anomalies associated with ureteral triplication are contralateral duplications (37%), ureteral ectopia (28%) renal dysplasia (8%) and reflux.² Multiplication of ureter present clinically as recurrent urinary tract infections, stone formation, vesicoureteral reflux or urinary incontinence.

REFERENCES

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