01. The Ureter's Unexpected Journey to the Uterine Cornu - A Rare Case Report

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BACKGROUND: The ureter develops from the ureteric bud of the mesonephric (Wolffian) duct, which normally migrates and absorbs into the trigone of the bladder. Ureteric ectopia occurs due to an abnormal origin of the ureteric bud or failure of migration to the trigone, leading to aberrant insertion into Müllerian structures. Frequency is higher in females, with 80% of ectopic ureters associated with complete duplex systems. Insertion sites include the urethra, bladder neck, or rectum. In males, insertion can be into the seminal vesicles, vas deferens, or ejaculatory ducts; in females, into the uterus, vagina, or cervix. In females, insertion distal to the external urethral sphincter classically presents as continuous urinary dribbling despite normal voiding. In duplex systems, the Weigert-Meyer rule governs the drainage pattern such that the upper moiety ureter inserts medially and inferiorly, while the lower moiety ureter inserts at a near-normal lateral and superior position, posing more risk for vesicoureteral reflux. Although ectopic insertion into Müllerian structures has been recognised previously, involvement of the uterine cornu is exceptionally rare without a duplex communicating system. We report a case of a 19-year-old female with ectopic ureteral insertion into the uterine cornu associated with ipsilateral renal atrophy and absence of a duplex system.

THE CASE

A 19-year-old unmarried female presented for evaluation of continuous urinary dribbling since birth. She had no history of dysuria, urgency, recurrent urinary tract infections, or prior surgery, with regular menstrual cycles and vitals within normal limits. Physical examination revealed a normal urethral meatus with collection of urine at the introitus. Laboratory investigations were unremarkable.

Ultrasound was suggestive of an atrophied left kidney. Contrast-enhanced Computed Tomography revealed an atrophied left kidney (1.6 x 4.2 cm) with a small left renal artery and a dilated tortuous left ureter opening into the left cornu, with contrast spillage within the uterine and vaginal cavity, suggesting ectopic ureteric insertion. Magnetic Resonance Imaging collaborated with these findings. A diethylenetriamine pentaacetic acid scan (DTPA Scan) showed a left kidney Glomerular Filtration Rate (GFR) of 1.1 mL/min and right kidney GFR of 75.4 mL/min. With urinary output of 50–100 mL/day and GFR well below the preservation threshold of 10–15 mL/min, nephrectomy was indicated. The patient was continent from the first postoperative day, recovered uneventfully, was discharged in stable condition, and remained symptom-free on follow-up.

CONCLUSION : In duplex system anomalies, management depends on how well each kidney unit functions: if both work, uretero-ureterostomy is preferred, but a poorly functioning upper unit calls for heminephrectomy. Our case was anatomically unique — the entire kidney drained through a single ectopic ureter that bypassed the pelvicalyceal communication with bladder completely, causing constant urine leakage through the vagina. With no duplex system present, a globally shrunken kidney, and a GFR of just 1.1 mL/min, nephrectomy was the only appropriate treatment. This case highlights the importance of recognising non-duplex ectopic ureters as a separate clinical entity, where standard guidelines based on duplex anomalies simply do not apply.

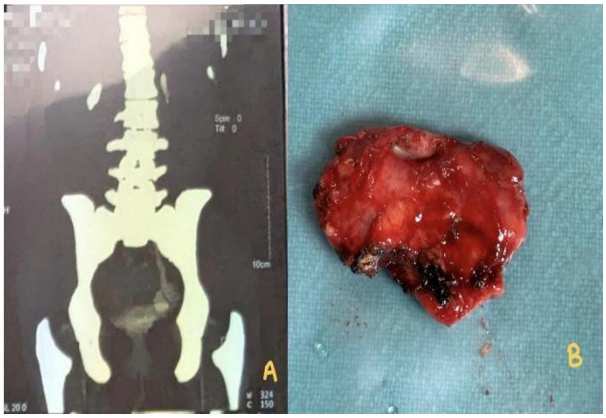

Fig. 1(A) CT image 1(B) Resected specimen of atrophied kidney

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