The evaluation of occult ectopic ureters in girls with incontinence

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Purpose: To document the available diagnostic modalities in girls with continuous urinary incontinence (CUI) due to occult ectopic ureters.

Patients and Methods: Six toilet-trained girls were referred to us from 1995 to 2009 for evaluation of CUI. Diagnostic evaluations, clinical courses, and surgical management were reviewed.

Results: The age at definitive diagnosis was 3-13 years and the mean delay until diagnosis after initial presentation was 2.9 years. Close inspection visualized urinary dribbling from the vaginal orifice and/or vestibule in 4 cases. Ultrasonography was first imaging performed in all cases, and showed a normal solitary kidney in 3, normal kidneys in 3, and dilatation of distal ureter in 2. Intravenous urography in 3 girls failed to demonstrate ipsilateral duplication in 2, and led to bilateral duplication in 1. Magnetic resonance imaging (MRI) and 99mTc-Technetium (Tc) dimercapto-succinic acid (DMSA) renal scintigraphy was diagnostic in all 6 cases, revealed hypoplastic kidney in 3 and a poorly functioning dysplastic upper pole moiety in 3. Urethrocystoscopy, vaginoscopy and retrograde ureterography was performed in all cases, and showed an ectopic ureteral orifice in the urethra in 1, in the vagina in 3. Intravenous dye injection (IDI) identified a vestibular ectopic ureteral orifice just beneath and ipsilateral to the urethral meatus in 2 cases. Nephroureterectomy or upper pole heminephrectomy was curative. All patients became dry immediately after the operation.

Conclusion: MRI, 99mTc-DMSA renal scintigraphy, endoscopy and IDI reliably detect and localize hypoplastic kidneys and poorly functioning upper pole moieties associated with occult ectopic ureters in girls with CUI.