



# A New Level of Care

Latest Guidelines Help Physicians Treat Patients With VUR

Pediatric patients with urinary tract infections (UTI) may have a condition known as vesicoureteral reflux (VUR). Severity of the condition, which is characterized by the backward flow of urine toward the kidneys, can range from mild to extreme. The American Urological Association (AUA) recently released updated management and screening guidelines for patients with primary VUR, aimed at helping physicians improve care.

Primary VUR is believed to be congenital, causing the ureteral tunnel within the bladder to be too short. As a result, the flap valve mechanism (compression of the ureter as it fills or empties) is not effective. In many cases, advance diagnosis can be made before symptoms are present. For example, many patients are diagnosed *in utero* via prenatal ultrasounds. AUA also currently recommends that siblings be screened if they have a history of bladder infections, or if an ultrasound reveals possible renal size asymmetry or renal cortical abnormalities. Many physicians recommend screenings for children of VUR patients as well.

VUR diagnosis is sometimes explored when patients are treated for a UTI or kidney infection. Children with primary VUR often feature symptoms, such as high fevers (often exceeding 103° F), lethargy, anorexia, dysuria, hematuria or incontinence. According to the AUA guidelines, if primary VUR is suspected, the physician should conduct a full

medical evaluation of weight, height and blood pressure. Serum creatinine should also be measured if it seems that bilateral renal abnormalities are possible. It is also important to determine whether any indicators of bladder or bowel dysfunction are present, such as frequent urination, constipation or penile/perineal pain.

In terms of imaging standards, renal ultrasound is often necessary in cases where a UTI may have impacted renal function and structure, according to the AUA guidelines. In most cases, VUR is diagnosed using either a voiding cystourethrogram, or a nuclear cystogram. A voiding cystourethrogram allows the clinician to best grade the severity level of the patient's VUR (Grade I to II, mild; Grade III, moderate; Grade IV to V, severe). The test also uses fluoroscopic images to evaluate the anatomy of the bladder and urethra. One perk to nuclear cystography is that it exposes the patient to less radiation, although it falls short in terms of grading and anatomy.

Once diagnosed, grading the severity of primary VUR helps to determine the likelihood of spontaneous resolution over time. Other considerations also help guide the physician to the best care plan, including:

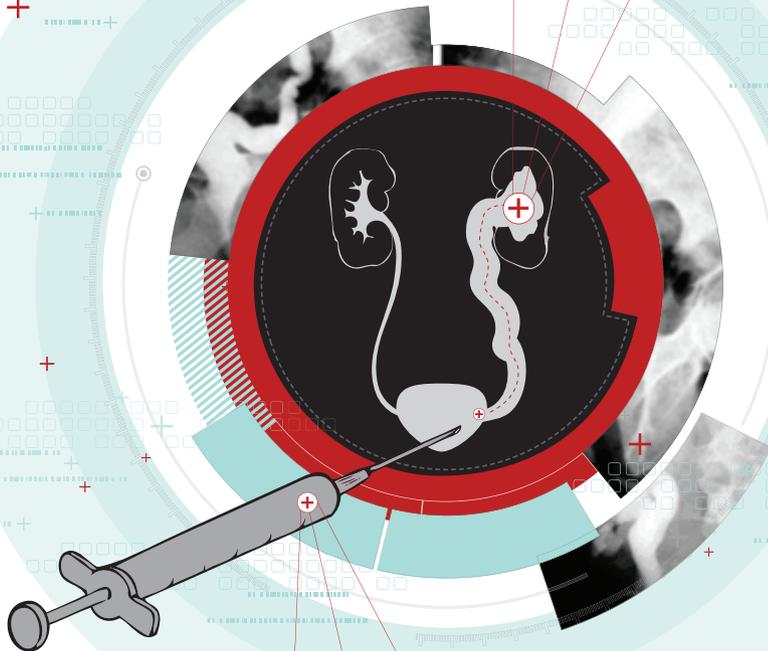
- **Gender:** Girls typically are at higher risk for UTI than boys.
- **Age:** Younger children are at increased risk of renal injury with infection.
- **Bladder and bowel dysfunction:** These increase bacterial load. Stasis of urine allows bacterial colonization to occur.
- **Underlying renal scarring or dysplasia:** The presence of either decreases the possibility of spontaneous resolution.

VUR patients must be treated carefully because they are at elevated risk for UTIs with fever. Repeated infections can affect the kidneys and cause renal scarring, hypertension and possible future pregnancy complications. AUA recommends that physicians fully educate patients and their caregivers about proposed care treatment plan and how it was developed, as well as the long-term risks of untreated VUR.

Long-term care varies greatly based on the level of severity. Moderately serious cases can often be controlled with observation and a low-dose daily antibiotic treatment. AUA's current guidelines advise physicians to prescribe continuous antibiotic treatment in patients younger than age 1 with a proven track record of febrile UTIs. Antibiotic treatment may also be considered in older children if they suffer from bladder or bowel dysfunction, or are at increased risk of UTI. One significant change from the previous AUA guidelines is the recommendation that antibiotic treatment be withheld unless necessitated by a UTI or other infection. This wait-and-see approach, however, is still being investigated, although preliminary findings are promising. In the meantime, it



VESICoureTERAL REFLUX



HYDRODISTENTION IMPLANTATION TECHNIQUE

COMING SOON TO AN OPERATING ROOM NEAR YOU  
Physicians interested in learning the double HIT method can now attend endoscopic injection training sessions taught by Andrew Kirsch, M.D., and Hal Scherz, M.D. Data have shown that the Injekt needle, which was developed by Dr. Kirsch, has significantly impacted the learning curve associated with perfecting the technique. In fact, research indicates that inexperienced urologists can achieve the same level of success with simple instruction on the usage of the needle. Training is regularly held in Atlanta, as well as in venues around the world.

remains an option, as opposed to a strict standard of care.

Serious cases of VUR often necessitate curative surgery. Parents should be clearly educated on the pros and cons of open surgery versus endoscopic alternatives. Open surgery boasts a 99 percent success rate, but it is typically accompanied by hospitalization, significant pain and a longer recovery period, as well as a permanent lower abdominal scar.<sup>1</sup> The endoscopic approach is virtually pain-free, done on an outpatient basis and allows children to return to school or day care the following day. This approach could require an additional endoscopic correction in 5 percent to 10 percent of cases, however. Whichever option is selected, AUA recommends that surgery be followed up with a renal ultrasound to pinpoint any possible obstructions.

Recent advances in endoscopic surgery continue to improve outcomes for many VUR patients. At Children’s Healthcare of Atlanta, physicians on staff recently developed the double hydrodistention implantation technique (HIT) method. Training seminars are available for physicians interested in learning this technique, which has yielded successful outcomes (see sidebar). Current data shows that the new method is successful in 90 percent of VUR cases Grades I to IV and 60 percent of Grade V patients (a one to five scale is employed to determine the level of VUR, with five being the most severe case).<sup>2</sup>

Even if observational or curative treatment has been deemed successful, it is still vital that physicians communicate the importance of steady follow-up care to patients and caregivers. Many parents and children are tempted to abandon follow-up once surgery and constant monitoring become distant memories. Unfortunately, avoiding regular checkups can result in long-term health issues, including decline in renal function and even hypertension during pregnancy.

At Children’s, urologists on staff are currently hoping to further improve VUR care by modifying the existing grading system and incorporating risk assessment methods. These ever-evolving diagnosis and treatment tools, coupled with individualized patient care, will help physicians lead patients and their families toward improved quality of life and outcomes that everyone involved will certainly appreciate. 🌐

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<sup>1</sup> A.A. Thakre and C.K. Yeung. "Technique of Intravesical Laparoscopy for Ureteric Reimplantation to Treat VUR." *Advances in Urology*. 2008.

<sup>2</sup> Hitt, Emma, Ph.D. "Endoscopic Tx of VUR Shows Cure Rates Above 90%." *Urology Times*. June 1, 2005.