



Pediatric Clips

NURSING

Urology- VCUG/Distractio
Abigail Riedel RN, BSN

January 2006 • Volume 1

Pediatric Nursing Clips from Pediatric Advanced Practice Nurses at Dayton Children's are quick reviews of common pediatric conditions.

The Children's Medical Center is the region's pediatric referral center for a 20-county area. As the only facility in the region with a full-time commitment to pediatrics, Children's offers a wide range of services in general pediatrics as well as in 35 subspecialty areas for infants, children and teens. We welcome your inquiries about services available – call 937-641-3666 or e-mail marketing@childrensdayton.org.

Experts you trust, caring for the children you love.

CASE STUDY

A three-year-old female presents in your office with symptoms of pain with urination, low-grade fever, and lower abdominal pain. You complete a urine analysis and culture via catheterization. The practitioner is careful and explains to the three-year-old

and the mother that the reason for the catheterization procedure is to obtain urine using a sterile process. The nurse brings in a distraction kit and demonstrates to the child using pictures what is going to happen during the urinary catheterization. The nurse discusses with

the mother the importance of her supporting and aiding in the distraction process. The urine analysis reveals high nitrates. The patient history indicates that she was diagnosed three months ago with a urinary tract infection and treated with Bactrim.

CASE DISCUSSION

WHAT IS VUR?

Urine is made by one or two kidneys and is carried away by thin tubes (ureters) and stored in the bladder. In healthy children, the ureters allow urine to drain into the bladder through a one-way valve located at the end of each ureter. This valve prevents urine from going back towards the kidney. In children with vesicoureteral reflux (VUR) the valves at the ends of their ureters do not work properly and the urine that should exit the bladder when the child urinates refluxes up the ureters to the kidneys.

Vesicoureteral reflux is caused by backflow of urine from the urinary bladder; it may become infected with bacteria, which can backflow or reflux toward the kidneys. This condition contributes to kidney infections and, when left untreated, can cause kidney scarring and damage. This can reduce kidney function, be associated with scarring, high blood pressure and the need for dialysis later in life. For the child, it is important to diagnose and treat VUR as soon as possible.

HOW IS VUR DIAGNOSED?

The gold standard test for detecting VUR is the voiding cystourethrogram (VCUG).

A renal ultrasound (RUS) is a poor alternative. The VCUg has good sensitivity and specificity according to the Subcommittee of the Urinary Tract by the American Academy of Pediatrics. Every child presents unique symptoms, so the practitioner will decide which test the child needs. The practitioner will use a VCUg or RUS to determine the degree or grade of the child's reflux. There are five standard grades: I, II, III, IV and V. Grade I is the least severe and Grade V is the most severe. The grade of reflux is one of the factors that influence the type of treatment the practitioner recommends.

Diagnosis and management of UTI in children ages 2 months to 2 years is especially challenging for three reasons: 1) the manifestation of UTI tends to be nonspecific, and cases may be easily missed; 2) clean voided midstream urine specimens rarely can be obtained, leaving only urine collection methods that are invasive (transurethral catheterization or bladder tap) or result in nonspecific test results (bag urine); and 3) a substantial number of infants with UTI also may have structural or functional abnormalities of the urinary tract that put them at risk for ongoing renal damage, hypertension, and end-stage renal disease (ESRD).

Thus, radiological investigation is indicated after the first documented febrile UTI in a female younger than five years of age or in any preadolescent male.

WHY DISTRACTION TECHNIQUE?

Remember when ordering a catheterization or VCUg that it is a psychologically and physically invasive and uncomfortable procedure. Children's memories of painful experiences can have long-term consequences for their reaction to later painful events and their acceptance of later health care interventions. Distraction techniques and preparation such as those utilized by child life specialists have been shown to decrease anxiety and distress and improve coping. When and how the child is prepared for a VCUg depends on the child's age. Children react to stressful situations in different ways and it is important to have trained staff available to assist in making the experience as comfortable as possible for both the parent and the patient.

Children differ from adults in their coping and distress responses during stressful and

Continued

Continued from the front.

invasive medical procedures. Factors relating to the child (temperament) and parent (coping and distress-reducing behaviors) contribute to a child's response to an aversive medical procedure. Interventions that utilize strategies such as distraction technique facilitate parent coping and promoting behavior, reduce distress and balance the child's ineffective use of coping strategies.

Child life specialists use preparation, teaching, coaching and distraction techniques during VCUG procedures as a standard of care in the medical imaging department at Dayton Children's. Medical imaging technicians also use forms of dis-

traction during VCUGs. Before a child begins the procedure a picture book is used to help decrease anxiety about the procedure. Pictures help the child understand the VCUG procedure by illustrating other children going through the procedure. The child life specialist helps the parent cope and teaches the parent to coach the child during the procedure. Distraction objects are used during the VCUG to help ease distress and reduce anxiety. This process also aids in improving cooperation from the child, which allows the procedure to be completed in a timelier, less traumatic manner.

REFERENCES

- American Academy of Pediatrics. (1999) Practice Parameter: The Diagnosis, Treatment, and Evaluation of the Initial Urinary Tract Infection in Febrile Infants and Young Children. Committee on Quality Improvement, Subcommittee on Urinary Tract Infection. 103: 4 p. 843-852.
- Downs, S. (1999). Technical report: Urinary tract infections in febrile infants and young children. Pediatrics, 103: 54.
- Hoberman A, Chao HP, Keller DM, Hickey R, Davis HW, Ellis D Prevalence of urinary tract infection in febrile infants. J Pediatric. 1993; 123:17-23.

FEATURED NURSE SPECIALIST



ABIGAIL RIEDEL, RN, BSN, is a candidate for master in nursing — pediatric nurse practitioner.

She has been with Dayton Children's for seven years and is currently a mobile intensive care nurse and intermediate care resource coordinator. She believes that nursing is a career where you can make it what you want it to be. "If you go the extra mile you truly do touch lives. Life is

short and with nursing you are able to touch so many lives especially, young lives here at The Children's Medical Center." Her career goals are to optimize her education and resources so that she is able to share these qualities with patients and fellow staff.

PEDIATRIC NURSING CLIPS

The Advanced Practice Nurses' (APN) council at Dayton Children's introduces Pediatric Nursing Clips, a bimonthly newsletter designed to share research and project news, clinical ideas, information and resources with other nurses throughout the region.

As a pediatric hospital, nurses at Dayton Children's care for patients from birth through age twenty-one who have a variety of acute and chronic medical conditions. Additionally our patients have a wide range of developmental stages, so there are always new procedures, processes, and treatments for review.

We want to make sure that we publish articles that will assist you in your practice. If you have suggestions, topics or information needs that you would like to see reviewed and published, please contact Cindy Asher, RN, CNS, Dayton Children's at asher@childrensdayton.org.



For further information about The Children's Medical Center of Dayton or its nursing program contact the nursing recruiter at 937-641-3666 or marketing@childrensdayton.org.



One Children's Plaza
Dayton, Ohio 45404-1815

Nonprofit Organization
U.S. Postage Paid
Permit Number 323
Dayton, Ohio