Seattle Children's Urology

Antenatal Hydronephrosis and Undescended Testes

Q&A With Dr. Paul Merguerian

Dr. Merguerian is Division Chief of Urology at Seattle Children's and the Dr. Michael Mitchell Endowed Chair in Pediatric Urology.

Antenatal Hydronephrosis

Q: How much of a problem is antenatal hydronephrosis?
Hydronephrosis is the most common condition found on antenatal ultrasound. It's estimated to affect 1 fetus in 100. That said, about 75% of cases are not clinically significant and can simply be observed — which is important for physicians to be aware of and also potentially reassuring to parents who've been told their child has this condition. More than half of cases are physiologic and resolve on their own by birth or soon after. Most mild and moderate hydronephrosis never harms the kidneys.

What's essential for both primary care providers (PCPs) and urologists is to identify infants who do need to be monitored or referred to a specialist and who might require intervention.

Q: Which patients can be managed in primary care?
For unilateral hydronephrosis, postnatal ultrasound should be performed three to seven days after birth to assess the degree of severity.

Mild unilateral cases (urinary tract dilation P1) can be managed by PCPs with follow-up ultrasound in three to six months. (Voiding cystourethrogram, antibiotics and functional scans are not recommended for mild cases.) If the child's condition is stable or has improved, no further follow-up is needed.

For more significant hydronephrosis or worsening cases, we recommend referring the child to a urologist.

Q: Which patients should PCPs refer to Seattle Children's Urology?
Bilateral hydronephrosis — whether mild, moderate or severe — should be assessed by ultrasound at birth, rather than waiting three to seven days. We'd like to see these infants quickly and ask that you make a referral right away.

If mild unilateral hydronephrosis worsens at or after six months, please refer the child to Urology within three months.

For moderate or severe unilateral hydronephrosis (urinary tract dilation P2 or P3), we ask PCPs to refer within two to three months after birth rather than wait for repeat ultrasounds. Children with hydronephrosis caused by significant obstructive disease or vesicoureteral reflux might need surgery. (About 20% of cases are caused by reflux, but most of these are nonsignificant.) Antibiotic prophylaxis to prevent urinary tract infections is recommended for severe cases.

Seattle Children's new algorithm for antenatal hydronephrosis (PDF) can support PCPs in classifying cases as mild, moderate or severe and making referral decisions.

Seattle Children's Resources (available on our website)

For Patients and Families

- Hydronephrosis (PDF) (Russian) (Spanish) (Vietnamese)
- Ureteropelvic Junction (UPJ) Obstruction (PDF)
- Urinary Reflux (PDF)

For PCPs

- Antenatal hydronephrosis algorithm (PDF)
- Urology's "Refer a Patient" page

Undescended Testes (UDT)

Q: What's the most effective way to palpate the testes?
It's important to palpate the testes at each well-child check-up to establish the position, as well as characteristics like size, symmetry and Tanner staging. The best way to examine the child is to put them in a frog-leg position, with their pants and underwear completely removed.

To help differentiate between retractile and undescended testis, sit the patient up, eliminating the cremasteric reflex. Retractile testes should be in the scrotum when the child is sitting. A retractile testis can be brought down manually to the dependent part of the scrotum; an undescended testis will not come down below the upper scrotum. (Boys found to have retractile testes should have an annual exam to assess for secondary ascent.)

Q: Is ultrasound useful in the workup for UDT?
Ultrasound rarely helps with decision-making in the management of UDT, and we do not recommend it. Evidence-based guidelines from the American Urological Association (AUA) advise against using ultrasound (and other imaging) when evaluating this condition.

The discussion section of the AUA's imaging guideline points out that more than 70% of cryptorchid testes are palpable by an expert urology provider — considered the gold standard for assessment — and don't need imaging. For the other 30%, the best way to confirm the absence or presence and location of nonpalpable

testes, according to the AUA, is with surgery.

Q: Which patients should PCPs refer to Seattle Children's Urology?
These guidelines can help PCPs who are deciding whom to refer and when to make the referral:

- Please refer by the age of 6 months any infant with UDT detected at birth. There's no need to wait until they are 6 months old — it's fine to refer as soon as the condition is detected. If the testes spontaneously descend, we can cancel the evaluation.
- Refer any male age 0 to 21 if previously palpable testes are no longer palpable or can no longer be brought down into the scrotum. (Seattle Children's Urology sees new patients through age 17. If your patient is 18 or older, you may contact us for a consult via the Provider-to-Provider Line at 206-987-7777 or refer them to a specialist for adults.)
- Urgent referral is indicated for any phenotypic newborn male with bilateral nonpalpable testes. We will evaluate the child for possible differences in sex development.

Please get a birth history, including gestational age, for any males with suspected UDT.

Seattle Children's Resources (available on our website)

For Patients and Families

- Undescended and Retractile Testicles (PDF) (Russian) (Spanish) (Vietnamese)

For PCPs

- Undescended testes information sheet (PDF)
- Urology's "Refer a Patient" page

External Resources

- Evaluation and Treatment of Cryptorchidism, American Urological Association, 2014