

MEditorial December 2012

“Kids’ Urology”

Most childhood illnesses are in the realm of infections, usually viral, which although sometimes frightening to parents, go away on their own without any major intervention. Fortunately, most pediatricians have an increasingly high threshold for prescribing antibiotics, e.g., for upper respiratory infections, even ear aches, since the developing immune system can usually handle these--and repeated exposure to antibiotics can set the stage for more resilient and dangerous bacterial infections.

“Surgical” type problems occur in a lower ratio to medical diseases in children versus adults. Interestingly, the **genitourinary tract, of all bodily systems, may have the highest incidence of congenital disorders**, not all of which manifest themselves at birth. Someone may be born with an abnormal kidney with its outflow tube partially blocked (ureteropelvic junction or UPJ obstruction) which never causes symptoms--or perhaps presents itself as a bad kidney infection at age 60.

What determines whether a pediatric urologic problem is noted “early on” depends upon whether it is external, and the degree of functional derangement caused by the “birth defect”.

For example, an *undescended testicle* (cryptorchidism) is often noted in the newborn nursery. Some of these are only “delayed” in their descent into the scrotal sac, so waiting a year or so for this to happen before surgically intervening is reasonable and may avoid surgery on a young infant. Since the testis develops embryologically in the abdomen near the primordial kidney, it can remain high up behind the intestines or low down in the inguinal area (where it is sometimes associated with a hernia). Surgical approach to relocating the testis in the scrotum depends on location and length of its blood supply--and may lend itself to open as well as laparoscopic repair. Unrecognized undescended testes, especially those

that have shrunken, may be better removed. Cryptorchid testes, as well as their descended mates, are at increased risk for later development of testis tumors. *Hypospadias*, an abnormally located opening of the male urethra (meatus) is less common, but careful inspection of the baby usually demonstrates this. This congenitally “short” urethra can open as far back as the perineum (space behind the scrotal sac) or anywhere between this and the tip of the penis. Clues to hypospadias include a “blind-ending” dimple at the end of the penis, curvature downward (chordee) of the shaft, and excess foreskin on the top versus the bottom—when the latter is observed, neonatal circumcision should **not** be done, since urethral “extension tubes” made of skin [including foreskin] are not infrequently used to correct this abnormality. “*Intersex*” is an even rarer condition, whereby the sex (gender) of the infant is not obvious at birth—the appearance may be that of a small phallic organ, hypospadias, and testicular maldescent. Lab analysis for “X” and “Y” chromosomes, as well as a check for certain adrenal gland hormones (sometimes genetically abnormal) can help clarify the male versus female conundrum, but the “phenotype”, or appearance of these children is so much closer to girls that traditionally, it is far more common to raise these children as girls and reconstruct, at a later age, in the direction of female genitals. Genetic “boys” raised as “phenotypical” girls would not likely have become fertile men, anyways.

Internal urological abnormalities can show themselves in children with recurrent proven urinary infections (often associated with fevers) and sometimes kidney pain. Obstruction, as alluded to above, of the kidney’s drainage tube (ureter) can occur at the top (*UPJ*) and bottom (*UVJ*) of the tube. Areas of the ureter that do not propel (“peristalsis”) the urine downwards toward the bladder are commonly found near the bladder and may cause what is known as “*obstructive megaureter*” in which the tube is very widened and tortuous, or snake-like, in its course. *Vesico-ureteral reflux*, another cause of megaureter, is where the functional “valve” that prevents backflow of urine during voiding is defective. Bi-directional flow of urine widens the diameter of the ureter, and inhibits its ability to drain

urine at the same rate it is produced by the kidney. Some cases are mild and straighten themselves out by puberty, perhaps necessitating the use of low dose preventative antibiotics. Others of a major degree need either injection therapy with “Deflux” to strengthen the valve mechanism or open “reimplantation” surgery—otherwise serious infections and loss of the involved kidney may occur.

In an urban environment like LA and OC with children’s hospitals and pediatric urology subspecialists, we who practice general urology **still** see most of the garden variety of kids’ urological problems. Acute scrotal pain and swelling is always of concern, especially in boys around the time of puberty, and is most often referred to us by the emergency room. The major diagnoses include *torsion of the testicle* (spermatic cord torsion) in which the cord twists and the blood supply to the testicle is interrupted. This lack of blood flow (ischemia), if it persists more than 6 hours, permanently damages the testicle and may lead to its removal. If left in, the testicle will shrink, may be the source of chronic pain, and some feel leads to impairment of fertility—even if the other testis seems normal. Exam by an experienced ER doctor, pediatrician, family doctor or urologist may be all that is needed; but the diagnosis can be confirmed by a doppler-ultrasound which will show the problem with the blood supply. We urologists can sometimes de-torse, or untwist, the cord in the ER (it may require sedating the boy or giving some local anesthetic into the groin area); but most of these children go to the operating room immediately for assessment, de-torsing, and suturing (“pexy”) of the problematic testis as well as its mate (@ increased risk for same) to the inner membranes of the scrotum to prevent future occurrence. Of the five torsions I have been asked to see over 2-3 years, the 1st two unfortunately resulted in loss of the testicle, since both either presented to the ER late or were overlooked, since the main symptom was abdominal pain--and the testes were apparently not carefully examined. I got to the latter three cases with enough time to restore the blood flow and salvage the testes. Suffice it is to say, prompt diagnosis of this condition is needed and the testicles should

be examined in every boy of the appropriate age with non-descript abdominal pain. Other causes of acute scrotal pain include blunt trauma with development of bleeding around the testis or rupture of the testicle; twisting or *torsion* of tiny *embryological remnants of the testis or its sperm duct (epididymis)*—these cause less severe pain, no cord twisting/blood flow interruption and will often resolve without surgery; and, rarely, infection with bacteria spread from the bladder or prostate to the epididymis (*epididymitis*) and viral *orchitis* (sometimes seen with mumps and adenoviruses involved in respiratory infections).

Less acute, often **painless** scrotal “fluid” swellings can represent *hydroceles*. When seen in boys or teenagers, there is a high incidence of what is known as a congenital (groin) hernia, which is a patent (remaining open after birth) body tube, known as the “processus vaginalis”, which joins the peritoneal (abdominal) cavity with the scrotal area. In order to eliminate the patent tube, many of these hydroceles, if they are in need of surgical repair, are approached via the groin and not the scrotum.

Well I’ve covered a lot--and left out some other conditions, notably the issues of circumcision and bedwetting. I’ll try to get to these in a later MEditorial.

I began writing this December edition at the time of the horrendous slaughter of the innocent in Newtown, Ct. The event made me, as most others, contemplate all kinds of issues from mental illness; to social isolation; to gun control and what was meant by the 2nd amenders by “the right to bear arms”; to “good versus evil”; to heroism; and to the special nature and innocence of children themselves.

In dedication of this month’s MEditorial to those of Newtown whose innocence was shattered, I leave you, my readers, with one verse of the haunting but beautiful song by Whitney Houston (another soul lost in 2012), “The Greatest Love”:

"I believe the children are our future Teach them well and let them lead the way Show them all the beauty they possess inside Give them a sense of pride to make it easier Let the children's laughter remind us how we used to be."

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