Office Urology For The Pediatrician

At the end of this presentation, the participant should be able to:

- Evaluate newborns with hydronephrosis, cryptorchidism and an acute scrotum
- Describe the management of common penile problems in children
- Diagnose and treat children with bladder instability and primary nocturnal enuresis

Hydronephrosis in the Newborn

Increased Detection of Anomalies
Which of the following is true regarding prenatally detected hydronephrosis?

1. If an ultrasound and VCUG on the first day of life are normal, no further work-up is necessary
2. A VCUG should usually be performed
3. Vesicoureteral reflux is the most common cause
4. It is an uncommon presentation for UPJ obstruction

Postnatal Evaluation

- Before leaving the nursery
  - Consider Amoxicillin 10 mg/kg daily
  - Renal and bladder ultrasound if urgent concern

Postnatal Evaluation

- For bilateral hydronephrosis or findings suggesting bladder outlet obstruction
  - VCUG
  - Prompt urologic consultation
Posterior Urethral Valves

- Usually suspected prenatally
- Consider in newborn with distended bladder and failure to void
- VCUG and leave catheter
- Valve ablation or vesicostomy

Postnatal Evaluation

- UPJ Obstruction
- Megaureter
- Duplication
- Reflux
- Other

- Ultrasound
- VCUG

Brown, 1987
Mandell, 1991

Postnatal Evaluation (within first month)
Algorithm for Neonatal UPJO

- Diuretic renal flow scan (MAG-3 or DTPA)
  - Decreased function/Obstructed – Repair
  - Normal function/Obstructed – Controversial
  - Normal function/Unobstructed – Follow with periodic US and RFS

Multicystic Kidney

- Cystic dysplastic tissue
- Most common newborn abdominal mass
- Small risk of tumor or hypertension
- Management is controversial

Undescended Testicles
Incidence of UDT

- Premature infants – 30%
- Term infants – 3%
- One year of age – 0.8%

Location of UDT

- Undescended testis
  - Abdomen
  - Inguinal canal
  - Pubic tubercle
  - High scrotum
- Ectopic testis
  - Femoral canal
  - Perineum
  - Prepubic
  - Contralateral

Significance of UDT

- Increased risk of post-pubertal cancer – Approximately 5-fold increase
- Infertility
  - 10% of formerly unilateral
  - 40% of formerly bilateral
- Consider DSD if any degree of hypospadias
  - Bilateral – 46XX CAH most likely
  - Unilateral – MGD most likely
Undescended Testis - Evaluation

- History
  - Ever palpable?
  - Prior inguinal surgery?
  - Hernia?

- Physical
  - Inspection
  - Frog-leg
  - Easily brought to scrotum?

Which of the following is least helpful in distinguishing a retractile from an undescended testis?

1. HCG stimulation
2. Hyperthermic ultrasound
3. History of scrotal testes at birth
4. Physical exam
5. Parental exam when child is warm and relaxed

Retractile Testis

- Easily brought to scrotum without tension
- Re-examination at later date
- HCG 500 to 2000 IU QOD x 5
- May ascend
Treatment of UDT

- Treat at 6-12 months of age
- Orchidopexy
  - Inguinal – 90% success
  - Abdominal – 75% success
- HCG
  - 20% success

Impalpable Testis

- Rule out DSD
- If bilateral – rule out anorchia
  - Elevated baseline gonadotropins
  - Failure to stimulate testosterone with HCG

Which of the following radiographic studies is usually indicated in the evaluation of an impalpable testis?

1. Ultrasound
2. MRI
3. CT
4. Venography
5. None of the above
Impalpable Testis

- Ultrasound, CT, MRI, Venography all have high false-negative rate
- Ultrasound useful in obese boys
- Laparoscopy
  - Locate testis if present
  - Laparoscopic orchidopexy

Acute Scrotum

- Testicular torsion
- Torsion of appendix testis
- Epididymo-orchitis
- Hernia
- Hydrocele
- Testis tumor

Testicular torsion

- Extremely tender high-riding testis
- Absent cremaster reflex
- No relief with elevation (vis-à-vis epididymitis)
An 8 year-old boy presents at 3 AM with 2 days of scrotal pain and swelling. On exam he has erythema of the right hemiscrotum and a hard tender nodule at the upper pole of the testis. You tell the parents:

1. Don’t worry – it will get better on its own
2. We better get a urologist in here right away
3. He needs a Doppler ultrasound of the scrotum
4. He needs a nuclear scan of the scrotum

**Torsion of Appendix Testis**

- Prepubertal
- Increasing pain over 1 to 3 days
- "Blue dot“ – hard tender nodule
- Resolves over 7 to 10 days - NSAIDs

**Evaluation of Acute Scrotum**

- History and Physical
- Urinalysis
- Doppler ultrasound
  (skip if high suspicion of torsion or clearly not a torsion)
- Surgical exploration
  - Ipsilateral orchiectomy or orchidopexy
  - Contralateral orchidopexy
Penis Problems

Phimosis
- Scarring of prepuce – inability to retract
- Steroid cream
- Surgery
  - Prepuciotomy
  - Circumcision

Retractable Foreskin
- Newborn – 10%
- 1 year – 50%
- 5 years – 90%

Gardner, 1949
Ostey, 1968
Herzog and Alvarez, 1986
**Balanoposthitis**
- Inflammation of prepuce and glans
- Topical steroids or topical or enteral antibiotics

**Paraphimosis**
- Foreskin trapped in retracted position
- Often iatrogenic
- Suspect in “worst case of balanitis”

**Normal Care of Uncircumcised Penis**
- Wash like any other body part
- Retract foreskin only as far as can easily be done
- Keratin pearls are harmless
**Meatal Stenosis**
- Only in circumcised boys
- Subsequent to meatitis
- Obviously scarred or upward deflection of stream
- Office meatotomy with topical anesthetic

**Hypospadias**
- Ventral meatus
- Penile curvature (chordee)
- Incomplete foreskin (95%)
- Contraindication to neonatal circumcision
- Repair at 6-12 months of age

**Urinary Incontinence in Children**
- Nocturnal Enuresis
  - Primary
  - Secondary
- Diurnal Enuresis
  - Overactive bladder
  - Neurogenic bladder
  - Obstructive Uropathy
  - Ectopic ureter
Overactive Bladder

- Onset after toilet training
- Urgency
- Spontaneous improvement

Indications to Treat

- UTI
- Reflux
- Psychosocial

Which of the following is most helpful when treating a child with overactive bladder?

1. Obtaining an ultrasound
2. Treating any associated constipation
3. Obtaining a VCUG
4. Urethral dilation
5. Obtaining urodynamics
### Treatment

- Tincture of time
- Timed voiding/Biofeedback
- Treat constipation
- Anticholinergics

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### Constipation, Incontinence and UTIs

(n=234 constipated children)

Diagram showing:
- Constipation
- Bladder instability
- UTI
- Reflux

Luening Baucke, 1997
Oxybutinin

- 0.5 mg/kg/day divided TID
- 0.5 mg/kg single dose of oxybutinin XL

Anticholinergic Side Effects

- Constipation
- Flushing
- Heat intolerance
- Dry mouth
- Fever
- Behavior changes

When To Consider Additional Tests

- Older child
- Severe symptoms
- Failure to resolve
- UTI
- Abnormal exam/UA
Primary Nocturnal Enuresis

- Life-long problem
- No daytime symptoms or UTI
- Normal exam and urinalysis
- Positive family history

Primary Nocturnal Enuresis - Treatment

- Enuresis alarm
  - Safest, most effective, least expensive treatment
- Desmopressin
  - Up to 3 tablets QHS
  - Very expensive - may be used PRN
  - Adding oxybutinin may rescue failures
- Imipramine
  - 25 – 75mg QHS
  - Continuous use
  - More side effects

Adolescent Varicocele

- Varicose dilatation of spermatic veins
- Occurs in 15% of men
- Associated with infertility in 20%
- Consider intervention if persistent ipsilateral testicular hypotrophy
Which of the following is not generally repaired at roughly 1 year of age?

1. Communicating hydrocele
2. Hypospadias
3. Undescended testicle
4. Male pattern baldness