

Pediatric urology

1) Vesicoureteral reflux disease :

- efficient ureterovesical junction → obliquely inserted ureter with 1.5-2cm length, ureteric musculature into the base of bladder to form the superficial trigone
- Causes → Primary: Short intramural ureter (fails to close completely during bladder contraction)
→ Secondary : BOO (Cystitis, urethral meatal stenosis) or Congenital anomalies of ureter (Ectopic ureter, Ureterocele)
- Female , < 2 yrs , white
- Prenatal presentation → **hydronephrosis**
- Postnatal presentation → **recurrent febrile UTI, Reflux nephropathy, Flank or abdominal pain**
- Investigations : RFT, UA, UC


→ U/S : in children with febrile UTI and for follow-ups & Detection of hydronephrosis and dilated ureter

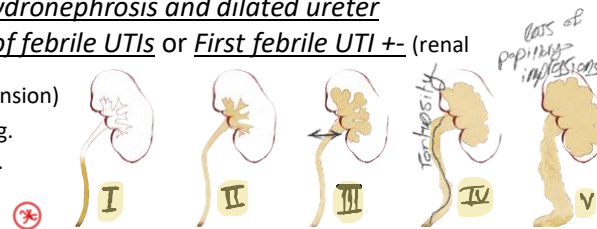
→ **VCUG** : micturating cystourethrogram ... Children with ≥ 2 episodes of febrile UTIs or First febrile UTI +- (renal

anomaly or Fever ≥ 39°C and detecting a pathogen other than E. coli or Hypertension)

- Contrast is instilled into the bladder → obtained via fluoroscopy while voiding.

- Findings: **Retrograde reflux of the contrast** into the ureters during micturition.

- Grading : 5 grades 



→ DMSA renal scan : Assessment of cortical tissue, renal function, and scarring → for follow-ups & Tx monitoring

→ MAG3 scan (radionuclear cystourethrogram) : Detects VUR / caused by obstructions & measures renal function

→ Tx : conservative → **Long-term prophylactic antibiotics, Correction of voiding dysfunction, Close surveillance**

Surgical → Subureteric transurethral injection (STING procedure) or ureteral reimplantation

RF, IV, V
Bilateral III
> 6yrs
1-III
< 5yrs

2) Penile and urethral anomalies

i. Epispadias

- o The urethra opens on the dorsum of the glans or penile shaft, or at the penopubic junction... partial or complete
- o Symptoms & signs: incontinence, urinary reflux, and UTIs
- o Clinical dx
- o Tx : → Partial : surgical reconstruction / no incontinence , Complete : surgical reconstruction of the penis & bladder outlet

ii. Hypospadias

- o Due to failure of tubularization and fusion of the urethral groove
- o foreskin fails to become circumferential, frequently associated with chordee.
- o Tx : → if glandular or coronal : surgical repair / cosmetic , proximal openings : surgical plastic repair
- o Complications of surgery : meatal stenosis & fistula formation.

iii. Posterior Urethral Valve

- o The most common obstructive urethral lesions in newborn and infant males, MCC of end-stage renal disease
- o obstructive mucosal folds at the veru montanum at the prostatic urethra
- o presentation .. Prenatal → oligohydramnios , pulmonary hypoplasia and respiratory distress.
Postnatal → Difficult voiding , Weak stream, Palpable kidneys with signs of acidosis and uremia,
Urinary incontinence , UTI, Up to 70% have VUR.
- o Dx : prenatal ultrasonography, postnatally (history of an abnormal urine stream & confirmed by VCUG)
- o Tx : at time of diagnosis → Surgery / endoscopy , if not feasible: temporary vesicostomy

3) Testicular and scrotal pathologies

I. Retractable Testis

- o Temporary displacement of the testicle in the inguinal canal by the cremasteric reflex.
- o Tx → no need ... If causes pain or affect the testicular development → orchidopexy

II. Cryptorchidism ~ MC

- Failure of one or both testicles to descend to their natural position in the scrotum ... unknown/ multi factorial
- Palpable 80% or Non-palpable (intra-abdominal or absent)
 - Abdominal testis : proximal to the internal inguinal ring
 - Inguinal testis : preventing adequate mobilization ~ 90%
 - Suprascrotal testis: testes immediately retract into the groin after manipulation
- Dx : clinically +—> labs : testosterone, ↓ Inhibin B, ↑ FSH, ↑ LH
- Tx : **via spontaneous descent** ... if > 6 months of age : **surgery as soon as possible**
Orchidopexy : Open/laparoscopic ... when testes are not palpable in the scrotum.
Orchiectomy: nonviable testicular remnants or late discovery > 2 years
- Complications :
 - Testicular cancer (germ cell tumors):its not eliminated by surgery.
 - Infertility: higher temperature of the abdomen
 - Testicular torsion, Inguinal hernia

III. Ectopic Testis

- If it is located outside the normal path of descent (superficial inguinal pouch, suprapubic, perineum, femoral canal)
- Close urological monitoring is necessary —> the risk of testicular ca & infertility