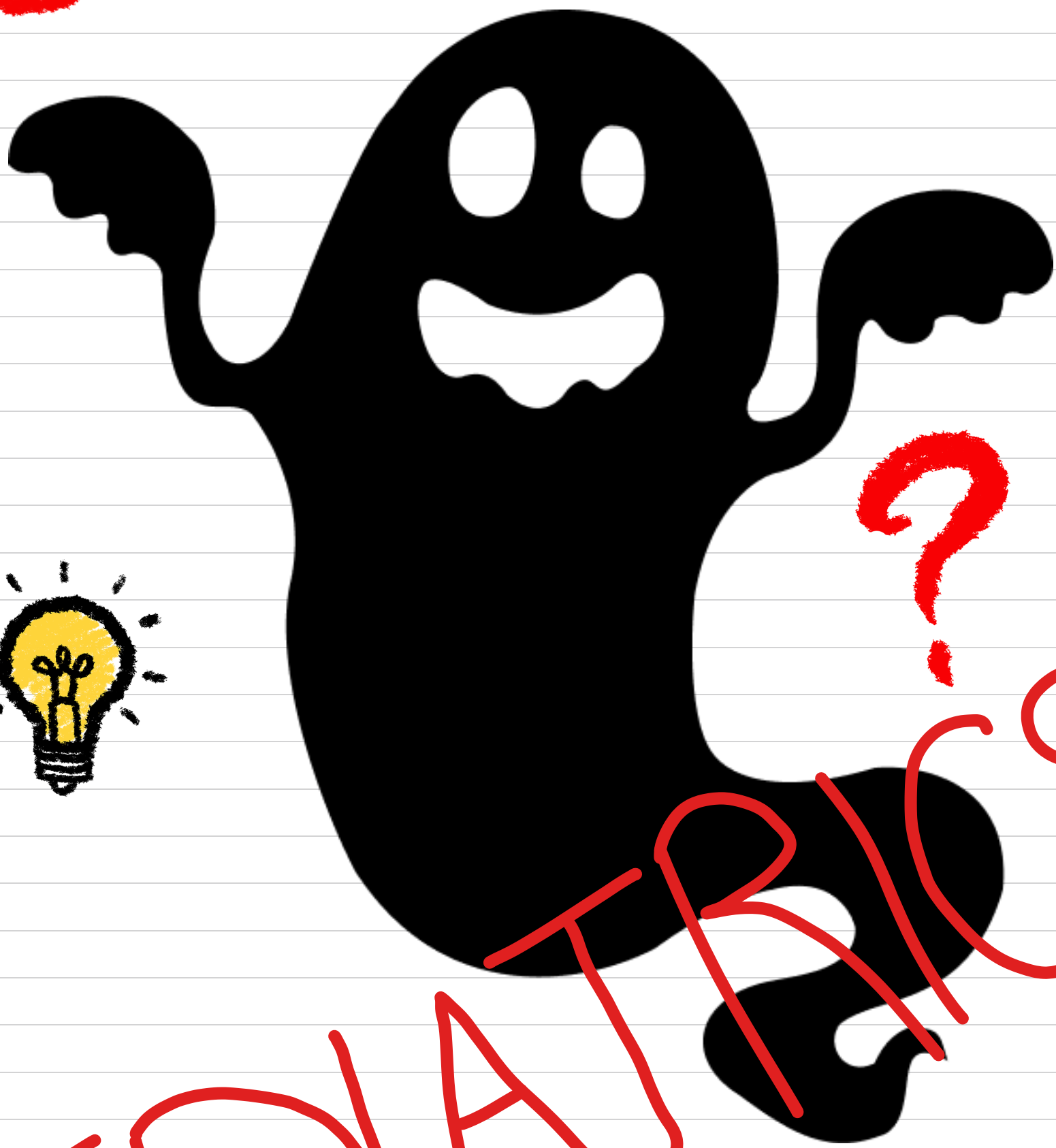
دعواتكم



PEDIATRICS

لا تنسونا من دعواتكم !!

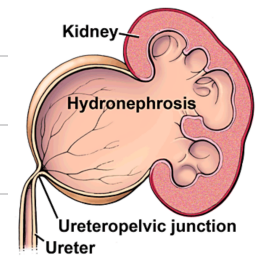
الكاتبة : سارة جمال

بالتوفيق جميعا

4 topics → ✡✡✡✡

"يارب"

principles of pediatric Urology



✡ UPJO : uretropelvic junction obstruction

* M:F → 2:1 / Lt:Rt → 3:2 / bilateral : 10-40%
* most present as Hydronephrosis detected by antenatal us
* etiology
  - Intrinsic bc → intrinsic narrowing
    - rarely : mucosal valves, polyps, ureteric strictures
  - extrinsic → aberrent renal vessels
    - Kinking as a result of severe vesicoureteral reflux (VUR)

* clinical features:
* most are asymptomatic (detected via prenatal screening us)
* when symptomatic
  - flank or abd pain
  - palpable flank mass
  - Hematuria
  - reccurent UTIs

Investigations:

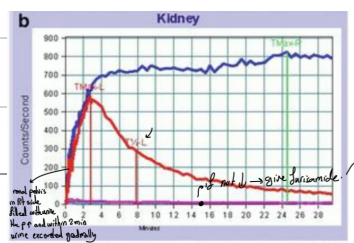
① postnatal us: * the primary investigation tool for HN
* assess kidney anatomy + Ap diameter of renal pelvis

② Renal radioisotope scan (function)

MAG3 is the scan of choice (percentage of perfusion to kidney)

- Differential renal function
  - normally 50% , 50%
  - acceptable down to 40%
  - needs intervention when <40%
- pelvic drainge curve
  - shows pelvic emptying t1/2 after administration of furosemide
  - normally t1/2 < 20 min
  - t1/2 >20 = sig obst. → needs intervention.

③ MCUG → to rule out whether HN is due to VUR (vesicourethral reflux)



Obstructed kidney

Normal kidney

Tx:

*antenatally detected HN

- Conservative management
- surgery → any or all → functional deterioration <40%
  → T1/2 >20 min
  → symp

  └ open or lap pyeloplasty 1) excision of the narrowed segment
  2) anastomosing ureter to the most dependent portion of renal pelvis
  3) excision of redundant renal pelvis.

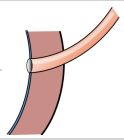
* Endourological pyeloplasty → use of balloon dilations, percutaneous antegrade endopyelotomy, retrograde uretroscpic endopylotomy

Vesico-Ureteric reflux:

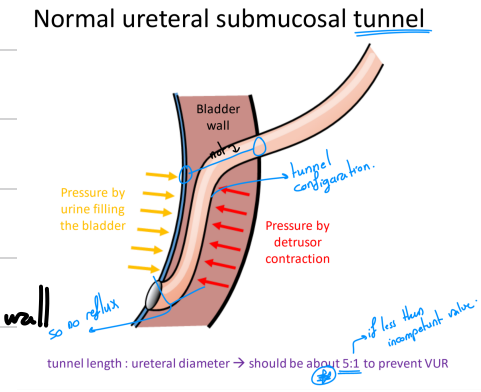
*F predominant

* peak → 3yrs

* familial incidence 2-4%



pathology: M.C.C primary VUR due to short ureteral submucosal tunnel in bladder wall



└ Secondary VUR: due to either → post urethral valve (PUV)
→ neurogenic bladder (NB)

clinical features:

* symp of UTI / recurrent UTIs

* Renal scarring (due to previous pyelonephritis - upper UTI)

* renal dysfunction

* HTN

* reduced somatic growth.

Investigations:

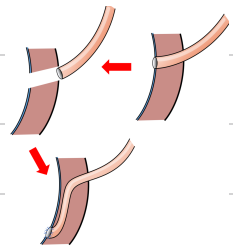
① Urine analysis → r/o infection

- US → HUN (hydro-uretero-nephrosis)
- DMSA nuclear scan → for renal scars and differential renal function
  ↳ attached to Technetium as MAG3.
- MCUG → for degree of VUR
  Micturating Cystogram

Tx: * Low-grade reflux (I, II, III):
- most likely → resolve spontaneously with age
- antibiotic prophylaxis
- ± subureteral submucosal injection of bulking agent
  - Results better for lower grades of reflux (>80% success)
  - Less successful in children with neurogenic bladder (NB)

Surgical Tx indications

- **Indications:**
  - Failure of chemoprophylaxis and/or submucosal injection therapy
  - Deterioration of renal function &/or appearance of new scars
  - Secondary VUR (due to ureterocele, duplex ureter, PUV, or neurogenic bladder)
  - Higher grades VUR (IV, V)
  - Hypertension
  - Single kidney with higher grade of VUR
  - Decrease in renal growth or somatic growth



= Reimplantation of Ureters

However → doesn't reverse scarring nor parenchymal damage.

circumcision:

* at birth: foreskin is adherant to the glans (non-retractable) (physiological phimosis)

* At 2-4 years: dissolution of adhesion → foreskin can retract

* at 5 years → most boys have normal foreskin retraction # if not → pathological phymosis.

→ indications: ① religious
② pathological phimosis
③ paraphimosis
④ reccurent UTI with no known cause.

phimosis: foreskin is unable to be retracted to expose the glans.

- physiological (in 1st y of life)
- pathological
  - primary: congenital with pin hole meatus
  - scondary to:
    - Bacterial infection:
      - **balanitis** (inflammation of the glans)
      - **posthitis** (inflammation of the foreskin)
    - Balanitis xerotica obliterans (BXO)

Mx: conservative → reassure, gentle-self retraction.
→ Topical steroids (eg. betamethasone)

Surgical → Circumcision
→ preputial stretch or plasty

paraphimosis: foreskin is able to be retracted but becomes stuck in that position resulting in distal congestion and edema of glans.

Mx: Surgical emergency

- **Manoeuvres can be done in ER:**
  - Compresses with ice or sugar (to reduce the swelling and allow protraction)
  - Multiple needle punctures (to allow fluid to be squeezed out) ↓ edema
- if failed → send to OR
→ dorsal slit of the tight band +/- circumcision (under GA) → general anesthesia.

circumcision → freehand
→ surgical clamps

contraindications:

- Absolute: * family history of bleeding disorders
  * newborn with bleeding tendency /disorder / pathological jaundice.
- Relative: Hypospadias

Circumcision | Complications

- **Bleeding**
- Infection
- Meatal stenosis
- Insufficient/excessive foreskin removed
- Adhesions, skin bridges, or inclusion cysts
- Entrapped penis or secondary phimosis
- Urethral injury (iatrogenic hypospadias)
- Necrosis of the penis (injudicious use of electrocautery to control bleeding)
- Amputation of the glans (partial or complete)
- **Death** (mainly due to unnoticed bleeding)

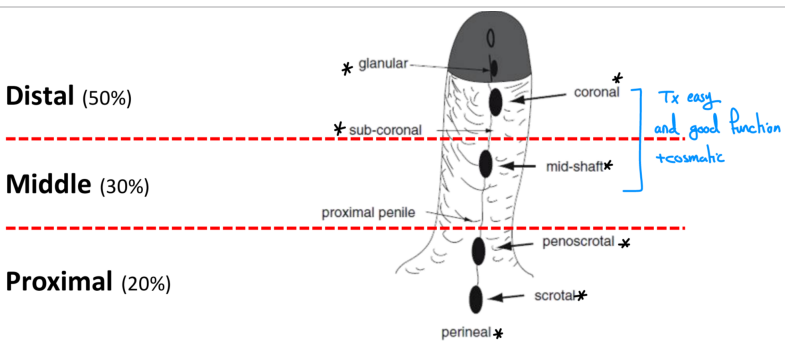
Hypospadias:

- Definition → * abn. ventral urethral meatus
  * dorsal hooded foreskin
  * glans defect
  * underdeveloped corpus spongiosum
  ± phalic torsion
  ± phallic ventral curvature (chordee)

* etiolog

Genetic Factors	• Exact mode of inheritance is unknown • Monozygotic twins (x8) • +ve family history (8% fathers | 14% brothers)
Endocrine Factors	• Deficient androgenic stimulation (production, conversion, or sensitivity) ↓ testo → dihydrotesto ↓ prod testo ↓ AR • Increased maternal progesterone exposure (x5) ↳ IVF (In vetro fertalization) → high progestone exposure
Environmental Factors	• Maternal exposure to estrogenic substances (in pesticides, milk, plastic linings of metal cans, and pharmaceuticals)

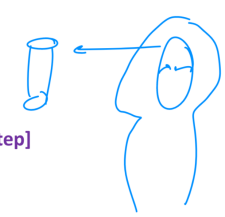
classification → all need surgery



- **Best timing recommendation:**
  - before 18 months of age (minimizes psychological impact of genital surgery) ① year – year+half. ② + tissue more developed
- **Hormone manipulation preoperative:**
  - penile size can be increased by.. bc size larger → better and easier.
    - weekly IM testosterone or hCG
    - or topical testosterone or DHT

Surgery

Tube urethroplasty (to tube, reshape.)
urethral plate is tubularized to neourethra [main step]

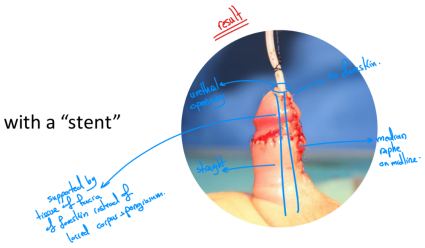


+

- **Corpus spongioplasty:** deficient corpus spongiosum is compensated by fascia (preputial or dartos fascia) to support the neourethra
- **Straightening phalloplasty:** chordee is released
- **Glansplasty:** glans defect is corrected
- **Circumcision:** dorsal foreskin is removed
- **Phalloplasty:** phallic torsion is corrected

Postoperative care

- Neourethra is protected for 1 week with a "stent"
- Simple analgesics
- Oral antibiotic



- **Early complications:**
  - Bleeding → بيض
  - Hematoma
  - Infection
  - Breakdown of repair
- **Late complications:**
  - Meatal stenosis
  - Urethrocutaneous fistula (UCF)
  - Persistent chordee
  - Urethral stricture
  - Urethral diverticulum