Looking after Boys with Posterior Urethral Valves

Jyoti Sharma

Pediatric Nephrologist

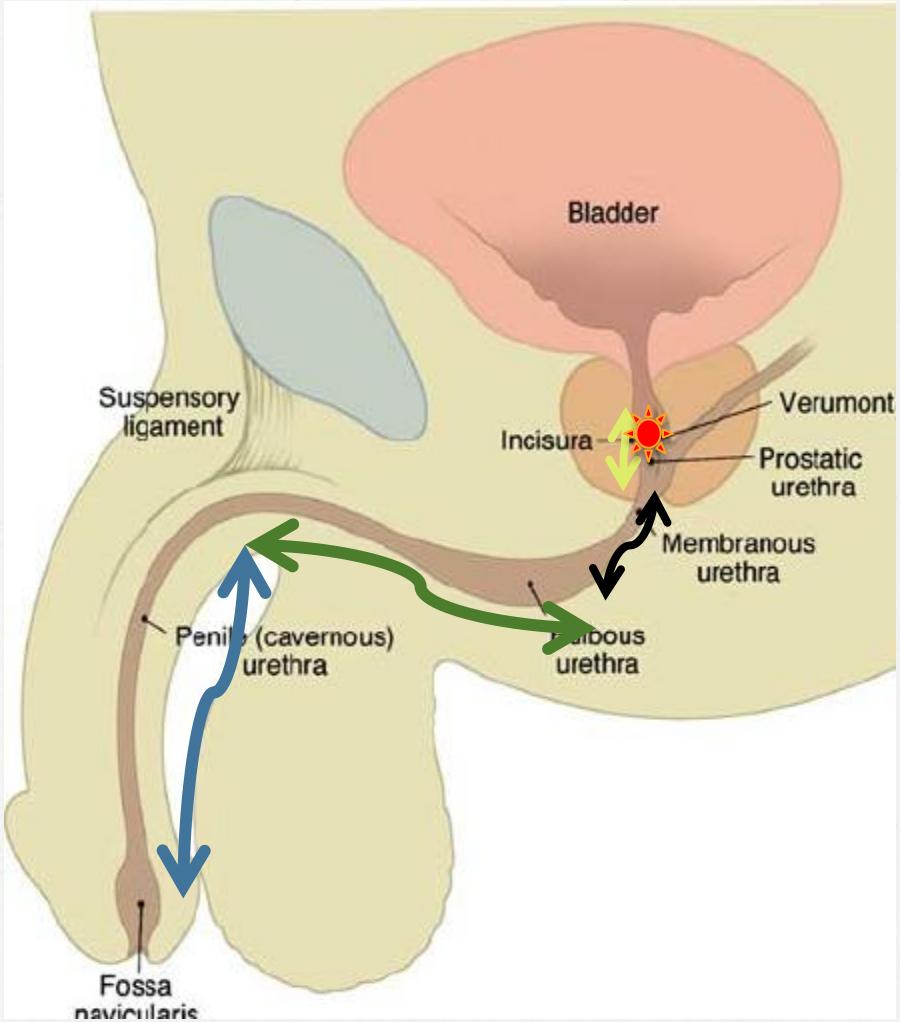
King Edward Memorial Hospital, Pune

ECHO India

Project ECHO®

KIDNEY FOUNDATION FOR CHILDREN

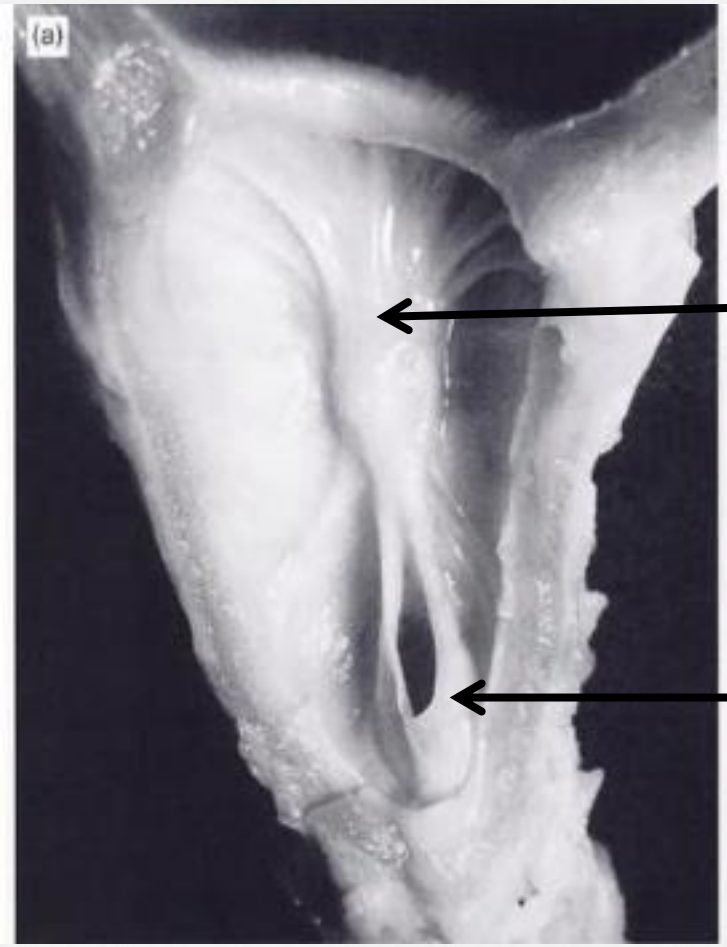
The ABC



Male urethra: 4 segments

- **Posterior** (a) Prostatic
  (b) Membranous
- **Anterior** (a) Bulbar
  (b) Penile urethra

Autopsy Specimen



Glassberg & Horowitz
Clinical Pediatric Urology Belman BA, King LR, Kramer SA

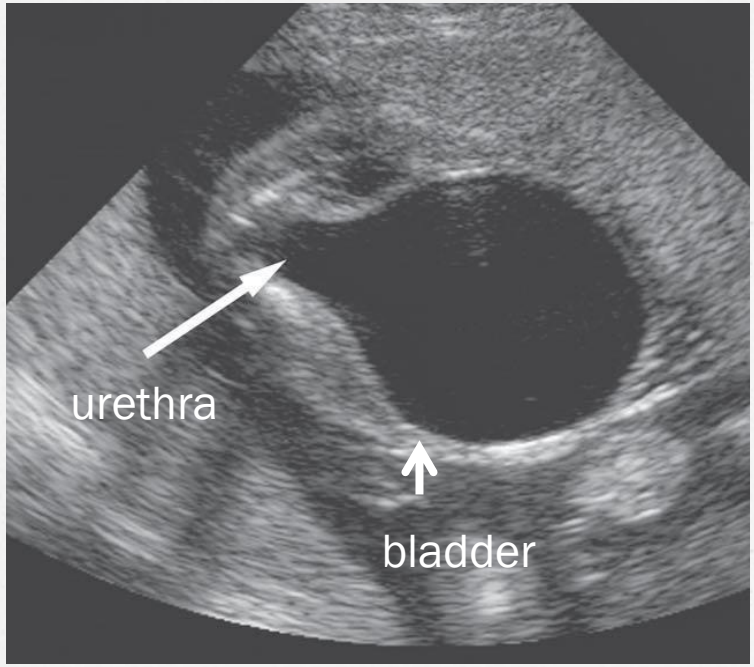
Why discuss boys with posterior urethral valves?

- ~ 30% of patients experience end stage renal disease

- Chronic renal insufficiency:
  - Growth retardation
  - Hypertension
  - High BU, S Creatinine
  - Metabolic acidosis

Clinical Presentation-1

- AN USG: fetus with bilateral hydroureteronephrosis, thickened bladder wall, dilated posterior urethra, bladder does not empty during USG,
- May be associated renal dysplasia, oligohydramnios and pulmonary hypoplasia



AN USG: Key-hole sign

In a boy who had hydronephrosis on AN USG

- The degree of obstruction is very variable
- There may be **unilateral hydronephrosis** and hydroureter or no antenatal dilatation and later presentation with UTI or failure to thrive
- There may associated variable renal dysplasia: small kidneys on ultrasound ± cysts

In a boy who had hydronephrosis on AN USG

- The neonate has voided so he is normal

- The urinary stream appears normal so the urinary tract is normal

What Next?

Drain bladder pending transfer to another facility/ arrival of pediatric surgeon/ MCU

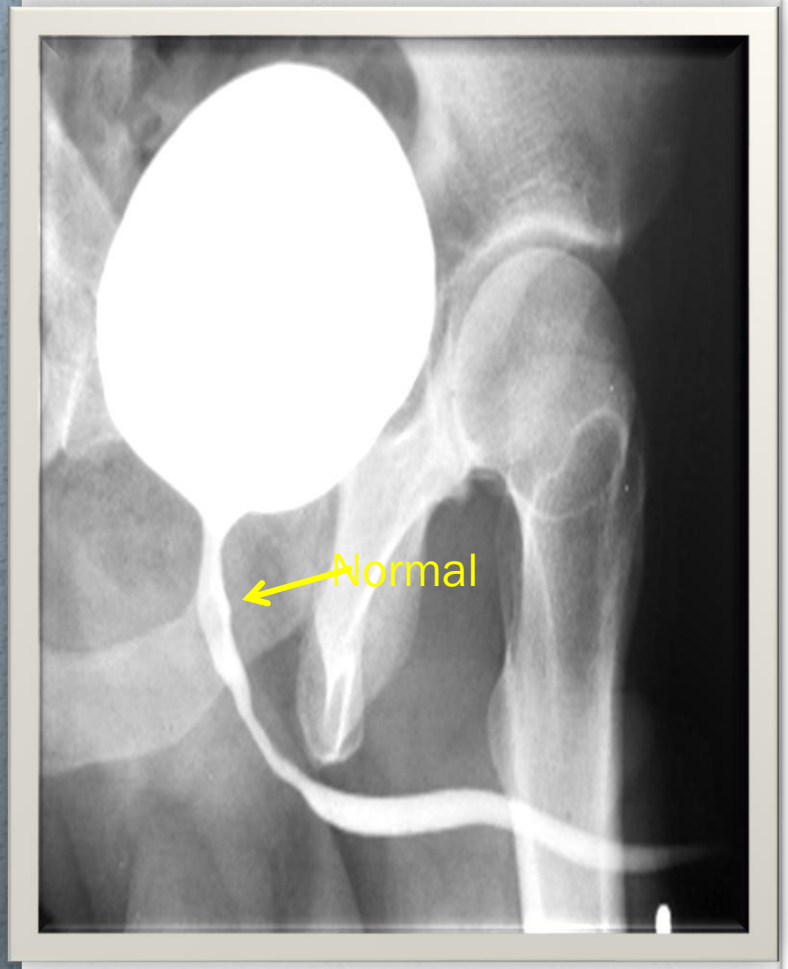
- Infant feeding tube: #6F or #7F
- Avoid Foley's catheter
  - Catheter balloon is likely to induce bladder spasms in the small, hypertrophied bladder
  - Potential to occlude ureteric orifices and cause secondary ureteric obstruction
- If catheterization is difficult-abandon procedure and phone a friend (surgeon/ ped surgeon)

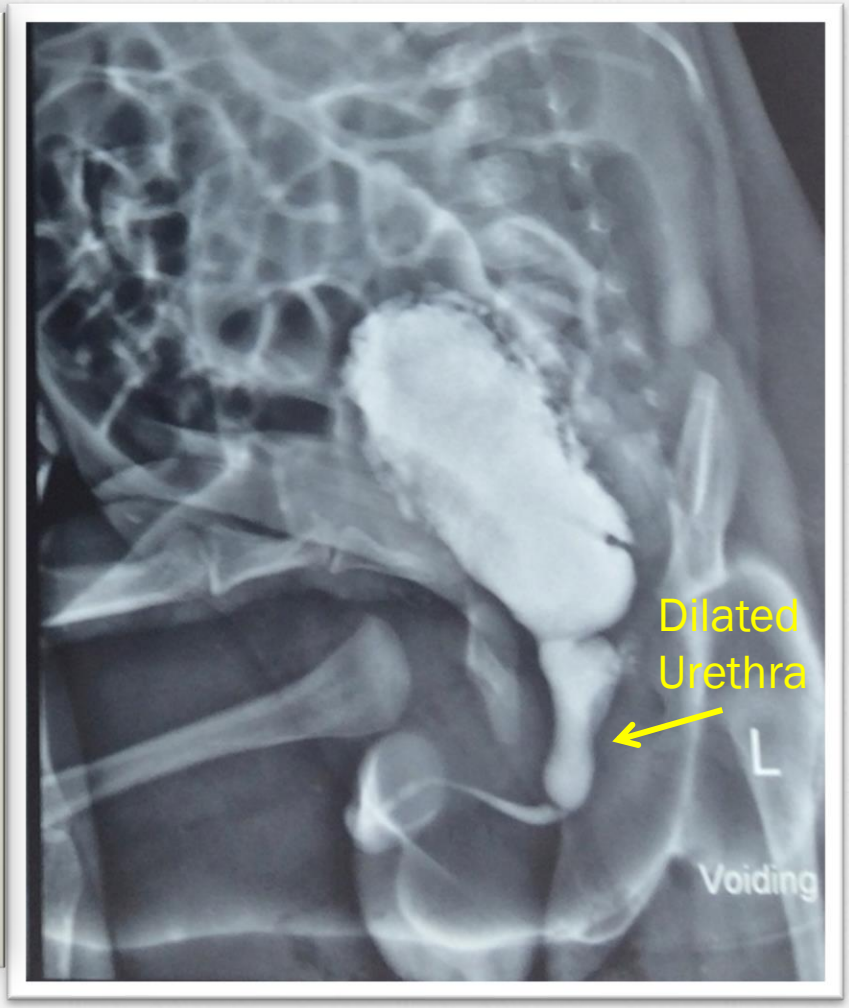
Management: Post obstructive polyuria

- Post-obstructive diuresis and polyuria may occur
- Close monitoring: Intake-output, weight

  S electrolytes: hypokalemia
- Fluid replacement: by replacing 50% of the urine losses with 0.45 NS with potassium

Other Features





Post valve fulguration -1

- Evaluate episodes of fever for a UTI, including a urine culture, prior to administration of anitibiotics
- Antibiotic prophylaxis for those with dilated tracts and history of UTI
- Reiterate safe voiding practices at every visit: timed voiding,

(double voiding/ clean intermittent cathterization if have been advised for a particular child)

- immunization

Post valve fulguration-II

- Ask for and manage constipation if present
- Growth, BP, renal function (eGFR), metabolic acidosis,
- Red flags
  - Daytime incontinence
  - Number of voids <3 or>7
  - Recuurent UTI

Counseling

Parent cooperation important

- Life-long follow up, Life-long follow up
- Life-long follow up, Life-long follow up
- Wide spectrum of severity & variable progression
- Inability to alter established renal damage
- Lag in toilet training is anticipated
- Encourage follow-up with ped neph: bladder function: voiding diary, uroflowmetry and urodynamics as needed

Take Home Messages

- Any neonate with antenatal hydronephrosis must have two normal ultrasound scans before being declared normal
- When suspecting PUV catheterize the bladder with 6 F infant feeding tube
- Unilateral dilatation and or normal stream do not exclude presence PUV
- Children with PUV need life long follow up

Thank you