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Pediatric Urological Issues in Daily Pediatric Practice

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KIMSHEALTH Trivandrum **Tuesdays & Thursdays**
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A Practical Look at

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- Postnatal Followup of Antenatally Detected Hydronephrosis
- Evaluation of Childhood Urinary Tract Infections
- Daytime Frequency
- Nocturnal Enuresis
- Soiling – a postCovid epidemic

- The cost of investigations
- When to investigate?
- When to refer?
- How to refer

Urological investigations - THREE

- Ultrasound KUB Rs 800 – Rs 1300
- MCU / VCUG Rs 2500
- Nuclear Isotope Scan Rs 4000-4500

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Postnatal follow-up of Antenatal Hydronephrosis

Hydronephrosis

- Hydronephrosis is not a disease entity – it is a description

- What is abnormal ? Not sure. Prenatal sonologists have to report,
  - APD > 4mm in second trimester
  - APD > 7mm in third trimester
- Postnatally in a 2 to 6 week Ultrasound
  - APD > 10mm

Q1. Is the Ureter Seen?
The big baddies

1. Posterior Urethral Valve – Boys, Bilateral, Bladder wall thick

2. Vesicoureteric Junction Obstruction

3. Small baddy: Grade 4 and 5 Vesicoureteric Reflux

Q2. Is there enough renal reserve?

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- Is there a normal kidney on the opposite side

- Is the affected side renal parenchyma normal
  - Parenchymal thinning, cysts, echogenicity

Q3. How significant is the hydropelvicalycosis

- Calyceal dilatation = Parenchymal thinning
- Renal Pelvis APD > 10mm? 15mm?

Investigation / Referral based on last USG

- If an immediate postnatal ultrasound is done
  - – Abnormal is abnormal,
  - - But Normal cannot be accepted as Normal, repeat at 2 to 6 weeks

Decision is always based on the Answers on the latest Ultrasound

- A1 Ureter is dilated – Prophylaxis, Urgent referral
- A2 Abnormal parenchyma – Bad
- A3 Unilateral isolated PCS dilatation. Do 2 to 6 week US and then refer

Newborn Urgent referral / transfer needed if UTD-3

- Ascites with abnormal kidneys or bladder
- Opposite kidney also has an abnormality or is absent
- Bladder wall is abnormal (3mm is normal, 4mm and more is abnormal)
- Ureter is seen dilated (bladder cross sectional view)

- Baseline Creatinine is good
- Antibiotic prophylaxis is good
- Transfer within 2 days is good
- Phone consultation is good

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So maybe the ANH is due to VUR? When do you want referral?

Vesicoureteric reflux in infancy is no longer considered abnormal

What does this mean?

- Isolated renal pelvis APD < 10mm former “Mild hydronephrosis” – test only if UTI is documented. Of course, warn about UTI symptoms. But routine timed screening is no longer advised.
- Isolated renal pelvis APD 10 -14mm - followup ultrasounds 3 to 6 month US till one and a half years of age to know whether stable or worsening. Prophylaxis still not needed.

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Investigation for Urinary Tract Infections in Children

- Why do we want to investigate?
- What are the probable causes according to age
- If a cause is found, what will be done

Why do we want to investigate

- There is some more glomerular maturation after birth that reaches the 95% mark by one and a half years of age. We want to guard the glomeruli from damage
- We don’t know yet whether baby is prone to UTI’s

What are the probable contributors Before 1 year of age

- With normal USG

  Vesicoureteric Reflux:40% at birth, 18% by 1 year of age,

  (8% by 4 years and 6% by 6 years of age)

  Vesicourethral inco-ordination & colonization of foreskin in boys

- With abnormal USG

  Structural abnormalities and obstructions

1 ½ to 3 years

- Boys
  - Posterior Urethral Valve that was less severe that it got missed
  - Tight phimosis – doubtful UTI's skin contamination
- Girls
  - Labial synechiae
- In both
  - Persistent VUR – does not matter what grade
  - Neurogenic bladder initial manifestations

Age 4 years and more

- Neurogenic bladder
- Sensory Inattention

The Urology Perspective

0 – 1 ½ yrs

- Ultrasound KUB should be done even with the first episode.

Even if it is normal, Refer if…

one cannot accept another episode

1. A febrile UTI upto 3 months age
2. A febrile UTI that did not respond immediately
3. A UTI that persisted or recurred immediately

Between 1 ½ - 3 years

- Proved Upper UTI
- Difficult to treat, persistent or recurrent
- UTI in a boy

The paediatric urologist's role - Clinical

Look for Associated symptoms or findings

- Urinary incontinence, Soiling
- Neurocutaneous markers back and elsewhere
- Labial synechiae & Prepucial stenosis (Phimosis)
- Dilated urinary tract on US or previous surgery

The urologist's role - Investigation

See the Ultrasound KUB as it is being done

- renal pelvicalyceal dilatation,
- ureteric dilatation if any,
- bladder wall thickness and
- postvoid residue (if checked)

- Decide whether MCU is necessary, nuclear isotope scan is necessary
- And if so, carry it out
- For MCU, I get parents to be the play therapists and if needed premedicate with rectal Midazolam

MCU – the urologist attends

- To premedicate, catheterize sterile and to reduce the morbidity by having parents divert the child
- To ask the correct question
- Once answer is evident, stop the test, reducing radiation dose
- If PUJ is suspected, and VUR is present, then DTPA with bladder catheter draining is required to negate the effects of reflux.

VUR in boys, What do I do ?

- In boys I teach prepucial hygiene,
- Trial of Betnovate and review in those without scarred prepuce
- In tight phimosis and nonresponders I do Plastibell circumcision under local in OP to avoid false positives in the future

Primary (Idiopathic) VUR standard choices

- Minor grade or “late” VUR –
  - 1 year antibiotic prophylaxis, then observe for additional year
  - If breakthrough infection occurs, STING (Cystoscopy and subureteric injection of inert substance)
- Intermediate grade VUR –
  - prophylaxis till 3 years of age, then observe for additional year
  - If breakthrough infection occurs, do DMSA, then
  - STING if no scar, reimplant if scar
- Major grade VUR or Paraureteric Diverticulum
  - Ureteric Reimplantation

Daytime Frequency & Anxiety as an isolated symptom

Pollakiuria

- A new onset anxiety that makes child want to void every few minutes while awake unless distracted
- Absence of nocturnal frequency / nocturnal enuresis
- Not incontinent
- No microscopic features of viral or bacterial infection
- No ultrasound or clinical findings that can contribute to polyuria and urinary frequency

Why is it important to recognize

- An anxiety disorder
- No effect with antibiotics, bladder relaxants or anti-anxiety drugs
- Presumed aetiology is PANDAS – no consistent proof

- Minimum history : of soiling, night time frequency, documented urine infections or renal or pelvic or back surgery
- Minimum examination: Back and External Genitalia
- Minimum investigations: Urine microscopy, Ultrasound KUB with Postvoid

Why is it important to recognize?

- Can avoid
  - investigations such as MCU, Cystoscopy, Urodynamics
  - & treatments such as Oxybutinin

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Nocturnal Enuresis

When is it to be assessed

- New onset (ie. secondary)

- When child or parents are upset or face ostracism

What is to be checked

- Any secondary causes for enuresis
  - UTI-Daytime enuresis and new onset enuresis are clues
  - Polyuria-urine specific gravity on first morning specimen of urine to look for concentrating ability
  - Loss of bladder function and capacity – back lesions, bladder or pelvic surgery

Theory talks of

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Small Bladders

- Training to hold more
- Timed alarms
- Wetness alarms

- Does not actually solve the problem but creates a lot of extra activity

Theory talks of

Small Bladders

Failure of ADH peak at night

- Have dinner early (>2hrs)
- Drink water during day to avoid binging in the evening
- Salt laced drinks (kanji water) at dinner
- Sublingual Minirin “Melt” 60 microgram or 120 microgram

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Soiling & Wetting – a postcovid epidemic

New onset soiling and wetting

- Needs rectal examination to assess
  - Sphincteric tone (neurogenic / tumours)
  - Rectal loading and spill (sensory inattention)
  - Extrarectal masses (tumours)

Treatment

- Enemas for 5 to 7 days to empty out the rectum
- Start osmotic laxatives from day 1 to prevent further buildup and continue till found clean on re-examination

- Change to emollient laxative (Liquid paraffin or Cremaffin)
- Institute dietary changes to have leafy vegetables daily
- Make a regular time for sitting for stooling, timed voiding

- Build up bowel and bladder habit before withdrawing laxative – takes minimum 3 months to 8 months

How to refer? The Uber model

- WhatsApp to 9345 4585 38
  - Clinical problem
  - Images and reports
  - Child’s name & parent’s Contact number

- If it is an urgent transfer, ring up Paediatrics Resident - always available with Consultant at KIMS Trivandrum Emergency, also send me the message

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THANK YOU

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