How to Manage Boys operated for Posterior Urethral Valve and Severe Hypospadias

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Transitional Care for Continence
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References Related to PUV

The Valve Bladder Syndrome: 20 Years Later. Glassberg KI., J Urology,166:1406-1414;2001

Impact of transurethral resection on urinary flow rate in children with posterior urethral valve in short term follow up. Ipekci T., et al., Saudi MedJ,35(5):460-465;2014

Long term Bladder Dysfunction and Renal Function in Boys with PUV Based on Urodynamic Findings. Ghanem MA., et al., J Urology ,171:2409-2412;2004

Normal empty bladder management: Effecrtive therapy for the Seevere Valve Bladder. Koff SA., Br J Urol, 85 (suppl) : 18: 2000

Pre-transplant management of valve bladder: A critical literature review. Jesus LE and Pippi Salle JL., J Ped Urol., 11: 5-11; 2015

PUV Associated Problems

BO Obstruction due to Valve
BO Obstruction due to Bladder Neck
Bladder Dysfunction
Incontinence and/or Poor Emptying
Upper System Obstruction due to BOO
Upper System Obstruction due to Bladder Wall/Dysfunction
Upper System Obstruction due to Severe Hydronephrosis
Polyuria
Primary UTI or Surgery Associated UTI
Renal Dysplasia

Is Aggressive Management Worthed ?

YES!!!

we can avoid/postpone renal transplantation
we can avoid/postpone augmentation surgery
we can avoid/postpone upper system diversion
we can avoid/postpone CIC
we can avoid treatment related complications or morbidities

<u>in selected cases….</u>

Poor Prognostic Factors

Prenatal Severe Findings (oligohydro, bil severe hydro)
Postnatal Cr > 1 mg/dl
Dysplastic Kidneys
Severe Hydroureteronephrosis
Incontinence

BOO due to Valve

Make sure that Valves are Ablated Efficiently

Residual valves (10-80%)

- VCUG
- Endoscopy
- Uroflowmetrics and PVR
- Urodynamics

BOO due to Valve

VCUG

Posterior urethra/penile urethra ratio

Endoscopy

12 o'clock rest valve, ant valve, strict

Uroflowmetrics and PVR

Qmax <15 ml/sec and no change in PVR

Urodynamics

High voiding pressures

BOO due to Valve

Who are in Greater Risk for Rest Valves ?

- Younger age at Ablation
- Poor emptying/Severe Hydronephrosis
- Sepsis/Severe UTI
- Diverted (Vesicostomy)
- Low volume centers

BOO due to Bladder Neck

Very Conflicting Findings

No rest Valve but Poor Emptying

Generally VCUG and UD findings
Alpha blockers seems to work
Botox
Bladder neck incision

Kajbafzadeh AM., et al., J Urol; 178: 2142-2149, 2007
Keihani S., et al., Urology; 99: 278-280, 2017

Bladder Dysfunction

75% -90% abnormality

Postvalve ablation UD is essential.

Basically Three Abnormal Types

Low Compliance/Detrusor Hyperactivity
(w high voiding pressure)
assoc . upper tract dilat ((Full) Valve Bladder)
by Mitchell, 1982
by Duckett, 1997

Normocompliance/Detrusor Hyperactivity

High Compliance and Acontractile Bladder
(Myogenic Failure)

Bladder Dysfunction

Valve Bladder is associated with ESRD

- Proactive anticholinergic and CIC

Myogenic failure is unknown

- Anticholinergics
- Age related disease nature

- Better outcome if recognized early
- Continous follow up

Incontinence and/or Poor Emptying

Incontinence is associated with Valve Bladder

- Careful work up VCUG and UDs
- Retention ?
- Small capacity ?

Poor emptying

- Rest valve
- Bladder Neck
- Psuedo-residual

by Glassberg, 1982

- Acontractile bladder

Upper System Obstruction due to BOO

A good valve ablation can drain the whole system

- Less need for diversions
- Bladder neck ???
- Alpha blockers ???

Upper System Obstruction due to Bladder Wall/Dysfunction

Thick bladder wall very rarely obstr ureters

Bladder cath in babies fail to drain but rather aggravates
- best option for vesicostomy
- early ablation no cath and give some time

A good bladder therapy can drain the whole system

- Less need for diversions

Upper System Obstruction due to Severe Hydronephrosis

Never Accept the residual dilatation is due to severe hydro

Good bladder therapy with good emptying will decrease the dilatation in most cases

Double or triple voiding may help continence but not the dilatation

CIC or vesicostomy can be tried

Polyuria

Patients with valve bladder not only have obstructed ureters but even nephrons
by Canning DA, 2001

Drained system will cause a severe diuresis (nephrogenic DI)

Drainage must be adapted to polyuria

Full valve bladder sydrome can be prevented with overnight catheterization

Koff SA, 2000

Primary UTI or Surgery Associated UTI

UTI

Primary

- Related to VUR
- Prepuce
- Poor emptying
- Severe Hydro

Surgery related

- Stricture
- Augmentation
- Mucus
- Stone

Renal Dysplasia

PUV is 1-15% of renal transplatation (RT) in children
Outcomes are similar with other causes if valve bladder management is satisfactory

Small bladder due to oliguria will grow with RT
Small bladder will grow with age
PVR will increase with age
No rush for Augmentation

Renal Dysplasia

Augmentation increases the UTI, graft loss and mortality risk if done prior or at RT

If bladder therapy fails for a compliance <20 cmH20 and >60% EBC, a prior Augmentation is justifiable

Always get ready for CIC before RT

CIC can be difficult sometimes in PUV, cath channel ????

RT is possible even in diverted cases (ileal conduits etc.,)

References Related to Hypospadias

The Prostatic Utricle: An under recognized condition resulting in significant morbidity. Hester AG and Kogan SJ., J Pediatr Urol, 2017

Urinary flow patterns in infants with distal hypospadias. Olsen LH., J Pediatr Urol, 7(4):428-432;2011

Normalized Urinary Flow at Puberty after TIP urethroplasty for hypospadias in Childhood. Andersson M., J Urol, 194(5): 1407-1413, 2015

Treatment of Adults with Complication from Previous Hypospadias Surgery. Myers JB., J Urol., 188(25): 459-463, 2012

Long term follow up of hypospadias: Functional and Cosmetic Results. Rynja SP., J Urol., 182 (4): 1736-1743, 2009

Long term functional outcomes of distal hypospadias reapir: a single center retrospective comparative study of TIP, MAGPI and mathieu. Hueber PA., J Pediatr Urol., 11(2): 68.e1-7, 2015

Hypospadias Associated Problems

Giant Utricle

Bladder Dysfunction

Voiding

Surgery related

Short Term Success
Long term Success
Complications

Is Long Term Follow up Worthed ?

ABSOLUTELY !!!

Complication rate increases in time
Time is the best tester
Fistula may appear late , very late…
Surgeons observes other colleauges results
Witnessed ESRD related to posthypos strictures

Cosmesis related Social/Psychol Problems
Marriage or Relationship Problems

Giant Utricle

Proximal hypospadias can be associated with

- Always cath before starting surgery
- Always keep the pediatric cystocope at the table
- Beware if there is UTI and full bladder during PE
- Having a prior USG is a smart move

Bladder Dysfunction

No satisfactory evidence to do UDs for all hypospadias or severe ones

If emptying problem, first rule out utricle

If postsurgery, first rule out urethral strict or path

Voiding

Hypospadias children generally weak voiders

BUT

- Curve is generally plateu
- Almost never with PVR
- If emptying problem, first rule out utricle
- If postsurgery, first rule out urethral strict or path

Post Surgery

Short term

- Retention
- Dysuria
- UTI
- Dribbling
- Slow Stream

Post Surgery

Long term
- Retention
- Dysuria
- UTI
- Dribbling
- Slow Stream

BIG PROBLEM !!!

Stream always gets better in time

DON’T BE DECEIVED BY APPEARANCE !!!

Post Surgery

Long term
- Stricture
- Stone

Good Urethroplasty

BUT

Ejaculation problems

Cosmesis

Self esteem

PENILE LENGTH

- Penis is short in prox cases
- Length is an issue in postpubertals
- Postsurgical shortening can be managed

COSMESIS