

Urology Concerns in ARM

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Anorectal Anomalies

- Renal anomalies 80%
 - Chronic kidney disease
- Spinal anomalies 40%
- Genital anomalies 50%
- Urinary Tract Infections
- CKD
- Urinary incontinence
- Sexual dysfunction

Why worry about Urology

- Urinary tract infections
- Chronic Kidney Disease
- Incontinence
- Genital anomalies
- Sexual dysfunction

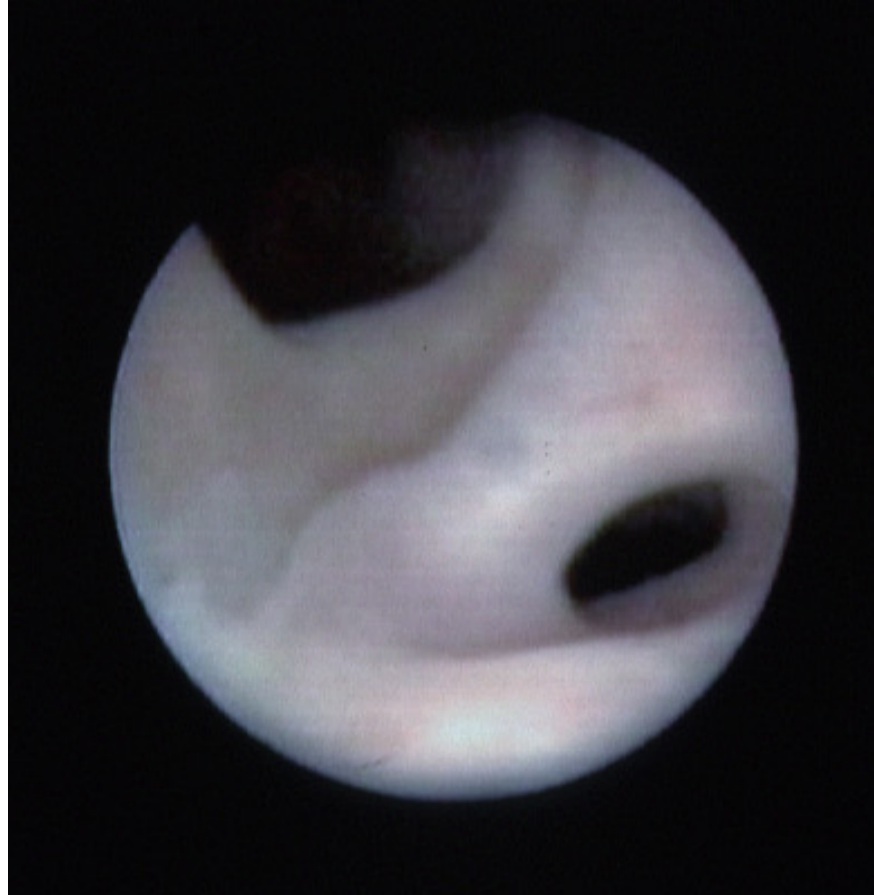
Role of Urology

- Pre reconstruction
 - Evaluation of whole genitourinary tract
 - Pre reconstruction UTI's
- During reconstruction
 - Understanding anatomy
 - Combining GU reconstruction
- Post reconstruction
 - Protecting renal function
 - Continence
 - Genital problems

Pre op Investigations

- Renal ultrasound scan
- Renal scan
- VCUG
- Spinal imaging

Cystoscopy



UTI's Pre reconstruction

- Consider
 - Feces in the distal colonic loop
 - Not emptying bladder
 - VUR
- Options
 - Ensure no overflow from the proximal stoma
 - Washout distal loop
 - Maximize bladder drainage

Combining GU reconstruction

- Undescended Testicle
- Hypospadias
- Vaginal Septum
- Cloacal anomalies



Post reconstruction

- Protection of renal function
- Managing continence
- Genital issues
 - Testicular pain
 - Menstrual problems
 - Sexual dysfunction

Protecting renal function

- Minimizing UTI's
 - Bladder emptying
 - Constipation
 - Antibiotics
 - Reflux
- Managing congenital renal problems
- Improving bladder mechanics

Urological Abnormalities

- 53 patients (83%) had an abnormality of the urinary tract
 - renal structural abnormalities
 - abnormal renal position
 - ectopic ureters
 - VUR
 - Bladder abnormality
 - Chronic Kidney Disease

Renal anomalies N= 50

- Renal dysplasia 8
- Solitary kidney 4
- MCDK 4
- Hydronephrosis 4
- Duplex 3
- Fused kidney 2

MCQ

- What % of ARM patients develop CKD
- A 50%
- B 10%
- C 6%
- D 1%

Chronic Kidney Disease

- All patients 6%
- Up to 50% in Cloacal patients
 - Many require renal replacement therapy

MCQ

- What are the risk factors for urinary incontinence
- A Spinal anomalies
- B Severity of anomaly
- C Surgery
- D Bladder neck function
- E All the above

Risk factors for incontinence

- Spinal anomalies
- Severity of anomaly
- Bladder Neck
- Surgery
- Constipation

Urinary incontinence

	Incidence
• Normal sacrum	11%
• Abnormal sacrum	56%
• Overall	24%

Functional anomalies

Effect of PSARP

- 32 patients
- Temporary anomaly 3
- Permanent anomaly 3

Continence rate -Intermediate term

Fistula site	Voiding Dry	Wet	CIC
Cloaca (14)	4 (29%)	1 (7%)	9 (64%)
Bladder neck (5)	0	1 (20%)	4 (80%)
No fistula (3)	1 (33%)	2 (67%)	0
Low (28)	25 (89%)	3 (11%)	0

Managing Voiding Dysfunction

- Understanding problem
 - Voiding pattern
 - How well do you empty
 - Is it coordinated
 - Urodynamics - Cystometrogram

Managing Voiding Dysfunction

- Emptying
 - Voiding
 - Catheterization
- Coordination of sphincter and bladder
 - Physical therapy
 - Medications/Botox
- Storage of urine
 - Medications – oxybutynin
 - Botox
 - Bladder Augmentation

Transitioning to adulthood

- Incontinence
- Erectile dysfunction
- Sexual dysfunction
- Infertility

Adult rate of Urinary Incontinence

	Total n = 74	Low ARM n = 23	High ARM n = 25	Cloaca n=15	Unclassifiable ARM n=11
None	44 (59%)	14 (61%)	18 (72%)	3 (20%)	9 (82%)
Monthly	1 (1%)	0	0	1 (7%)	0
Weekly	16 (22%)	8 (35%)	3 (12%)	4 (27%)	1 (9%)
Daily	9 (12%)	1 (4%)	3 (12%)	4 (27%)	1 (9%)
All of the time	4 (5%)	0	1 (4%)	3 (20%)	0

Long term outcome – bladder emptying

	Total n = 74	Low ARM n = 23	High ARM n = 25	Cloaca n=15	Unclassifiable ARM n=11
Normal	57 (77%)	23 (100%)	20 (80%)	5 (33%)	9 (82%)
Self-catheter	8 (11%)	0	3 (12%)	3 (20%)	2 (18%)
Mitroff	7 (9%)	0	0	7 (47%)	0
Ileal con	1 (1%)	0	1 (4%)	0	0
Express bladder	1 (1%)	0	1 (4%)	0	0

Male genital anomalies

- Up to 52% have an anomaly
- Undescended testicles 10 -40%
- Bifid scrotum
- Penile anomalies 14 -25%
 - Hypospadias
 - Chordee
 - Epispadias
 - Penile duplication

MCQ

- What is the most common cause of testicular pain
- A Epididymitis
- B Torsion
- C Torsion of the appendix testis
- D Trauma

Testicular pain

- Testicular torsion
- Epididymitis affects 20%



Long term outcome

- 30 males
- Erectile problems
- Ejaculation problems
- Fertility
 - 11 men had partners that conceived
 - 4 required IVF

Follow up

- At least until potty trained or socially continent
- Renal function
- Bladder function

Why worry about Urology

- Prevent renal damage 6%
- Reduce UTI's 22%
- Improve continence 10-35%
- Help with sexual dysfunction

Thank you



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