Spina Bifida: Complex Decision Points Through the Lifespan

SPU – Fall Meeting
Scottsdale, 2019
NEUROGENIC BLADDER
Milestone in Urology

CLEAN, INTERMITTENT SELF-CATHETERIZATION IN THE TREATMENT OF URINARY TRACT DISEASE

JACK LAPIDES, ANANIAS C. DIOKNO, SHERMAN M. SILBER AND BETTE S. LOWE

From the Section of Urology, Department of Surgery, University of Michigan Medical Center, Ann Arbor, Michigan
(Reprinted from J Urol, 107: 458–461, 1972)
• Provided concept of leak point pressure
• Predict patients at risk for upper tract damage
• Evaluated 42 pts w/ myelodysplasia
  – 20 pts with DLPP ≤ 40 cm H20
  – 22 pts with DLPP > 40 cm H20

McGuire et al., 1981

**PROGNOSTIC VALUE OF URODYNAMIC TESTING IN MYELODYSPLASTIC PATIENTS**

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Bauer et al, 1984
MM Newborn urodynamics

• BLADDER:
  – 57% with some bladder contractions
  – 43% areflexic
  2/3 with good compliance
  1/3 with poor compliance

• SPHINCTER:
  – 47% no evidence of denervation
  – 53% partial to complete denervation

• DIRECT CORRELATION BETWEEN DYSSYNERGY AND UPPER TRACT DETERIORATION

Bauer et al. J Urol, 1984
Prenatal Closure
UMPIRE
Urologic Management to Preserve Initial Renal Function Protocol for Young Children with Spina Bifida
PANEL

• Bladder Function Following Prenatal Closure
  Elizabeth B. Yerkes, MD

• Role of Urodynamics and CIC in Infants
  Stacy T. Tanaka, MD

• Surgery for Continence: Lessons Learned
  Richard C. Rink, MD
CASE PRESENTATIONS
3 Month old with MM

- Closed post natally
- Not on CIC
- Voiding spontaneously with minimal PVR
- Ultrasound normal
Bladder capacity: 50 cc
LPP: 50 cm H₂O
6 months of age

- On CIC with some leakage in between caths
- Not complaint with oxybutinin
- No infections
- Ultrasound: Normal aside from Grade 1 hydronephrosis of left kidney
Bladder capacity: 55 cc
LPP: 75 cm H₂O
9 months of age

• CIC with minimal leakage
• Compliant with oxybutynin
• No infections
• Ultrasound: normal
Bladder capacity: 90 cc
LPP: 70 cm H2O
3 years of age

• CIC with no leakage
• Use of indwelling catheter at nite
• No infections
• Ultrasound normal
Bladder capacity : 110 cc
LPP:  40 cm H₂O
4 Years of age

• No clinical change aside from interval febrile UTI (while out of state)
• Subsequent Ultrasound with poor growth of left kidney
Left: 8%
Right: 92%
Bladder capacity: 160
LPP: 39 cm H₂O
6 years of age

• No change from a urologic standpoint other than periodic botox injections
• Bladder moderately trabeculated on endoscopy
• Tethered cord release
• Shunt revision
Bladder capacity: 120 cc
LPP: 35 cm H₂O
NEW CASE
6 year old

- Lumbosacral SB closed post natally
- Shunted
- Wet on CIC q 3 hours on maximum oxybutinin
- Dry of stool with retrograde enemas
- No infections
- Normal ultrasound
Bladder capacity: 250cc
LPP: 24
Surgery

• Bladder neck reconstruction with modified Mitchell BNR with sling
• Family offered concomitant augmentation but declined
• Mitrofanoff
4 months post -op

• New onset leakage per Mitrafanoff – minimal
• Ultrasound normal
9 months post-op

- Worsening leakage through Mitrofanoff and minimal leakage per urethra
- No infections