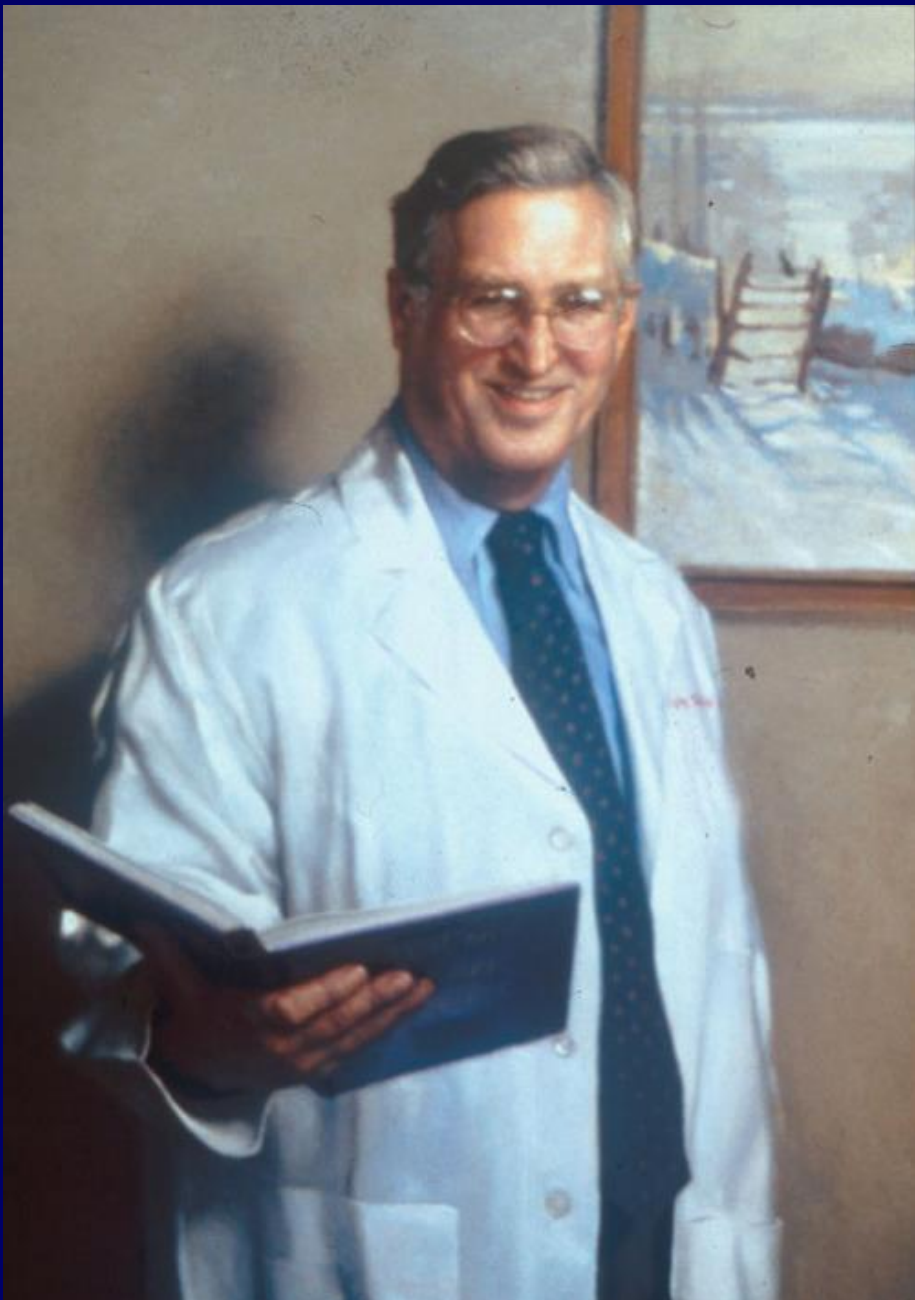


# Management of Distal Hypospadias at CHOP



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Hypospadias World Congress  
Moscow, Russia  
August 30, 2017



John Warner Duckett Jr. 1936 -1996

## Hypospadiology:

*Noun.* hy-po-spayd'-ee-ah-low-gee

1. The study of boys with hypospadias and the outcomes we witness.
2. A difficult science<sup>1</sup> that is humbling and energy consuming

Duckett, JW: The current hype in hypospadiology. *Br J Urol*, 1995  
76:1

# CHOP hypospadias results to 2005

- 1111 MAGPI – follow up 2.3 months – reoperation rate 1.2% 1992<sup>1</sup>
- 50 Onlays follow up not given, reoperation rate 6% 1987<sup>2</sup>
- 100 Island Flap repairs – follow up not given, reoperation rate 10% 1981<sup>3</sup>
- 125 combined series Onlay and Tube “at least 10 year follow up”. 73/125 (58%) available. 14% fistula for tube repairs 0% for onlay 2004<sup>4</sup>
- 12 Modified Island Tube follow up not given, 17% reoperation rate 2005<sup>5</sup>

<sup>1</sup>Duckett *J Urol* 1992

<sup>2</sup>Elder *J Urol* 1987

<sup>3</sup>Duckett *Urol Clin* 1981

<sup>4</sup>Patel *J Urol* 2004

<sup>5</sup>Patel *BJUI* 2005

# Hypospadias Advances

- Single Stage Repairs
  - Distal hypospadias, absence of severe penile curvature
- Optical Magnification
  - 4X Loupes, microscope (up to 10X)
- Reliable correction of chordee
  - skin vs corporal disproportion
- Reliable regional blockade
- Better Dressing
  - Keep it simple!

# Distal Hypospadias: CHOP results to 2012-2014

- Total number of patients: 403 boys
- Median age at surgery: 7 months
- Urethral stent: 306/403 (76%)
- Anesthesia: GA for all patients
  - Caudal block: 307/403 (76%)
  - Penile block: 96/403 (24%)

# Distal Hypospadias: CHOP results to 2012-2014

Type of repair	Number of patients (n=403)
TIP	114
MAGPI	111
Thiersch-Duplay	75
Island onlay flap	51
Urethral mobilization/advancement	24
Pyramid	19
Mathieu	9

# Distal Hypospadias: CHOP results to 2012-2014

- Complications: 39/403 (9.7%)
- F/U:
  - Mean: 13 months
  - Median: 4 months

Complication	Number (%)
Urethrocutaneous fistula	21 (54)
Urethral meatus stricture	11 (28)
Glans dehiscence	5 (13)
Redundant penile shaft skin	2 (5)
<b>TOTAL</b>	<b>39 (9.7)</b>

# Distal Hypospadias: CHOP results to 2012-2014

- Complications: 39/403 (9.7%)
- F/U:
  - Mean: 13 months
  - Median: 4 months
- MAGPI procedure: often little to no follow up
- Follow up: 35 vs 3 months in patients WITH a complication vs no complication
  - Duration to complication discovery: 53 (1-120) months

Complication	Number (%)
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Urethral meatus stricture	11 (28)
Glans dehiscence	5 (13)
Redundant penile shaft skin	2 (5)
	39 (9.7)


Complication	Duration of Follow up (median, mean)
No (364 boys)	3, 10.9 months
Yes (39 boys)	35, 34 months



# Distal Hypospadias, CHOP 2016-current

- Shift away from TIP procedure
  - Concerns for meatal stenosis, long term complication (penile curvature)
  - Dorsal inlay graft technique (inner preputial skin, penile shaft skin) in lieu of the TIP procedure
- Selective utilization of pre-operative testosterone for glans width <15mm
  - 2 doses given 5 and 2 weeks prior to repair
- Standardized anatomic assessment for each patient to determine risk factors for complication development
- Standardization of follow up algorithm until beyond toilet-training → puberty

# Common Hypospadias Techniques

- Urethromeatoplasty
- Modified MAGPI
- Glans Approximation Procedure
- MIV (Modified Inverted V)
- Thiersch – Duplay
- Island Flap Onlay
  
- Snodgrass modification of Thiersch – Duplay 

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- ✓ Location of meatus
- ✓ Degree of penile curvature
- ✓ Glanular configuration
- ✓ Quality of urethral plate, shaft skin

# Case Selection: Determining factors

- Location of meatus
- Degree of penile curvature
- Glanular configuration
- Quality of urethral plate, shaft skin

# Conclusions

- Variety of techniques used based on patient's specific anatomy
- Complication rate of 9.7%
- Objective measurements to improve surgical technique
- Extended follow up to capture all complications

# THANK YOU

