

Who and when to receive preoperative testosterone?



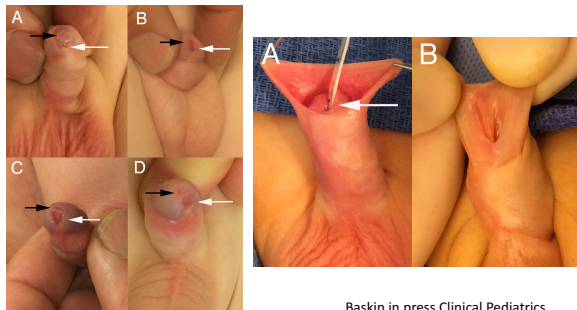
Fourth Quinquennial John W. Duckett Festschrift

Hypospadias comes in many varieties

Defining Hypospadias

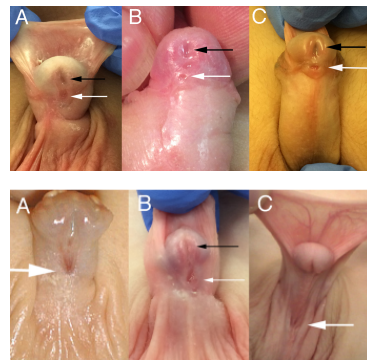
- Ectopic Urethral Meatus
- Abnormal Spongiosum
- Asymmetric Foreskin
- Penile Curvature
- Penoscrotal Transposition

Forme Fruste Hypospadias



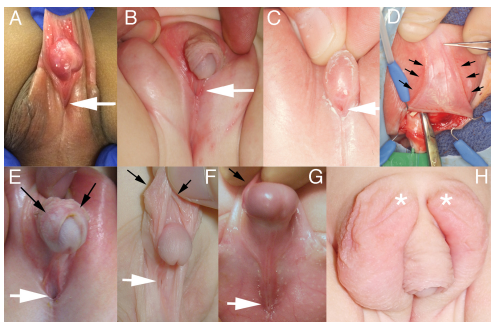
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Standard Hypospadias



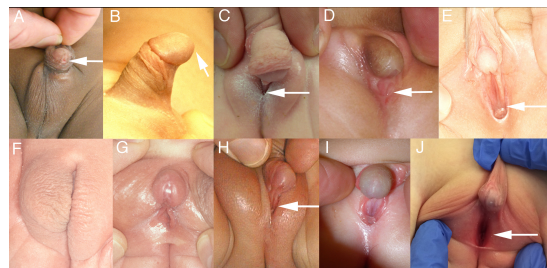
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Severe Hypospadias "Varsity"

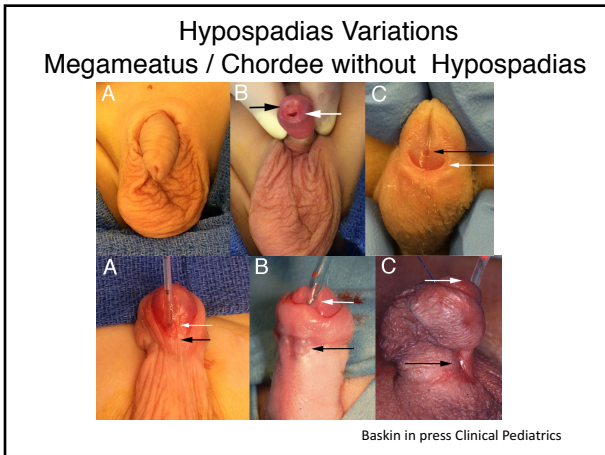


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Hypospadias / Disorders of Sex Development



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### Types of Hypospadias

Types of Hypospadias	Meatus	Penile Curvature	Foreskin	Examples
<b>Forme Fruste</b>	Normal or Distal Glans with Urethral pit	None	Normal to mild ventral deficiency	Distal Glandular meatus with urethral pit Asymmetric Foreskin Glandular Separation
<b>Standard Hypospadias</b>	Glans, Coronal margin, Penile shaft, Scrotum	Mild to moderate	Ventral deficiency	Normal Glans width > 13 mm (first year of life *)
<b>Severe Hypospadias</b>	Scrotum, Perineum	Severe	Ventral deficiency foreskin fusion with scrotum	Small glans < 14 mm * Severe curvature Foreskin fusion to Scrotum Disorders of sex Development
<b>Hypospadias Variations</b>	Normal or Wide	None to moderate	Normal	Megameatus Chordee without hypospadias Circumcision injuries

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### Who needs a pre-operative hypospadias work-up?

- No testes
- One testis
- Severe
- Does not look right!  
(Standard versus Varsity, Hypospadias) (DSD)

### What is the work-up for “Varsity”/DSD Hypospadias?

- Karyotype
- Sonogram
- Testosterone, DHT, LH, FSH, MIS
- HGG/ACTH stimulation
- **Exogenous Testosterone**

### Does preop Testosterone work?

Yes, When you don’t need it.  
Sometimes ?  
Not at all time!

What does the data say ?

#### Netto et al systematic review Hormone therapy in hypospadias 2013 Sao Paulo, Brazil

**Table 1** Study design, sample, age, classification of hypospadias and associations.

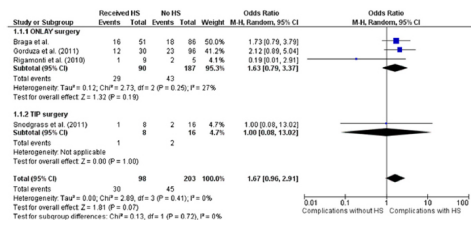
Author and year of publication	Study design	Sample	Age (months)			Classification of hypospadias			
			Mean	Minimum	Maximum	Coronal	Penile	Penoscrotal	Perineal
Gorduza et al., 2011	RETR	30	—	—	—	N/S	N/S	N/S	N/S
Bastos et al., 2011	RCT	26	41.3	12	120	5	3	0	0
Ishii et al., 2010	NRCT	17	16.8	2.4	60	0	1	13	3
Nerli et al., 2009	RCT	21	19	16	27	0	10	8	3
Kaya et al., 2008	RCT	75	33.4	10.6	159.1	58	15	2	0
Luo et al., 2003	NRCT	25	N/S	6	18	0	8	14	2
Chalapatthi et al., 2003	NRCT	26	46.56	12	120	4	12	9	0
Koff and Jayanthi, 1999	NRCT	12	N/S	6	12	Proximal (12)			
Davits et al., 1993	NRCT	40	27.3	13	74	N/S	N/S	N/S	N/S
Sakakibara et al., 1991	NRCT	15	49.2	34.8	114	0	4	10	1
Gearhart and Jeffs, 1987	NRCT	36	27.6	N/S	N/S	4	16	3	7
Shima et al., 1986	NRCT	98	54	24	96	15	29	23	31
Tsur et al., 1983	NRCT	7	40.8	24	72	1	4	1	1
Monfort and Lucas, 1982	NRCT	45	74.4	0	192	27	13	5	5

RCT – randomized clinical trial; NRCT – non-randomized clinical trial; N/S – non-specified; and RETR – retrospective.

N=10 Non randomized clinical trail IM, T administration preferred  
 N=3 Randomized clinical trail Little of any side effects  
 N=1 Retrospective Follow-up relatively short

Shima et al report - only one with large number of severe hypospadias  
 Surgical Outcome no difference with or without treatment (LHRH/HCG)

Wright et al systematic review Effect of Preop Hormonal Stimulation 2013  
Sick Kids Toronto



“the result of our pooled analysis suggests a possible relationship between preoperative hormonal stimulation and increased complication rates in patients with severe hypospadias defects”

## Conclusion

Proper studies have not yet been done to determine whether Preoperative androgen stimulation is effective in improving hypospadias surgical outcomes

Its use however appears safe !

Professional opinion is to use testosterone / HCG in the diagnostic workup of severe/varsity hypospadias