



1^o European Conference on Failed Hypospadias Repair

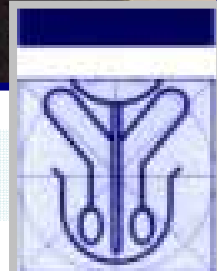
September 18th, 2010 - Arezzo, Italy



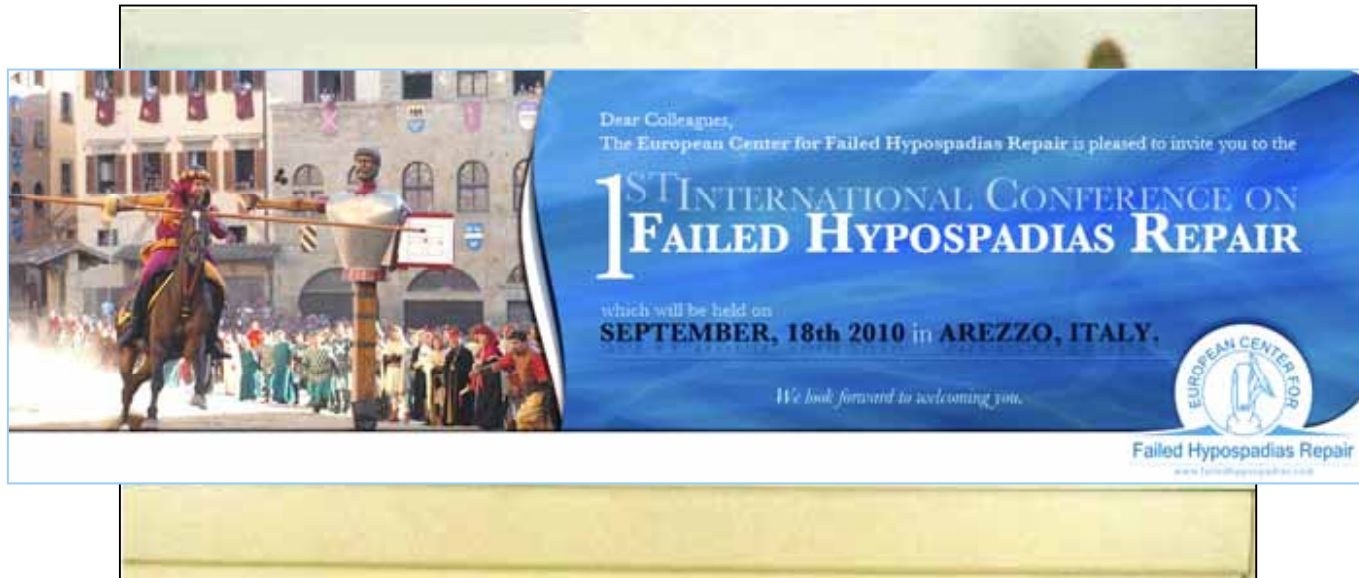
*To remember
a great friend ...*



CENTER for URETHRAL RECONSTRUCTIVE SURGERY



Pediatric urological long-term follow-up: Personal experience and future perspectives

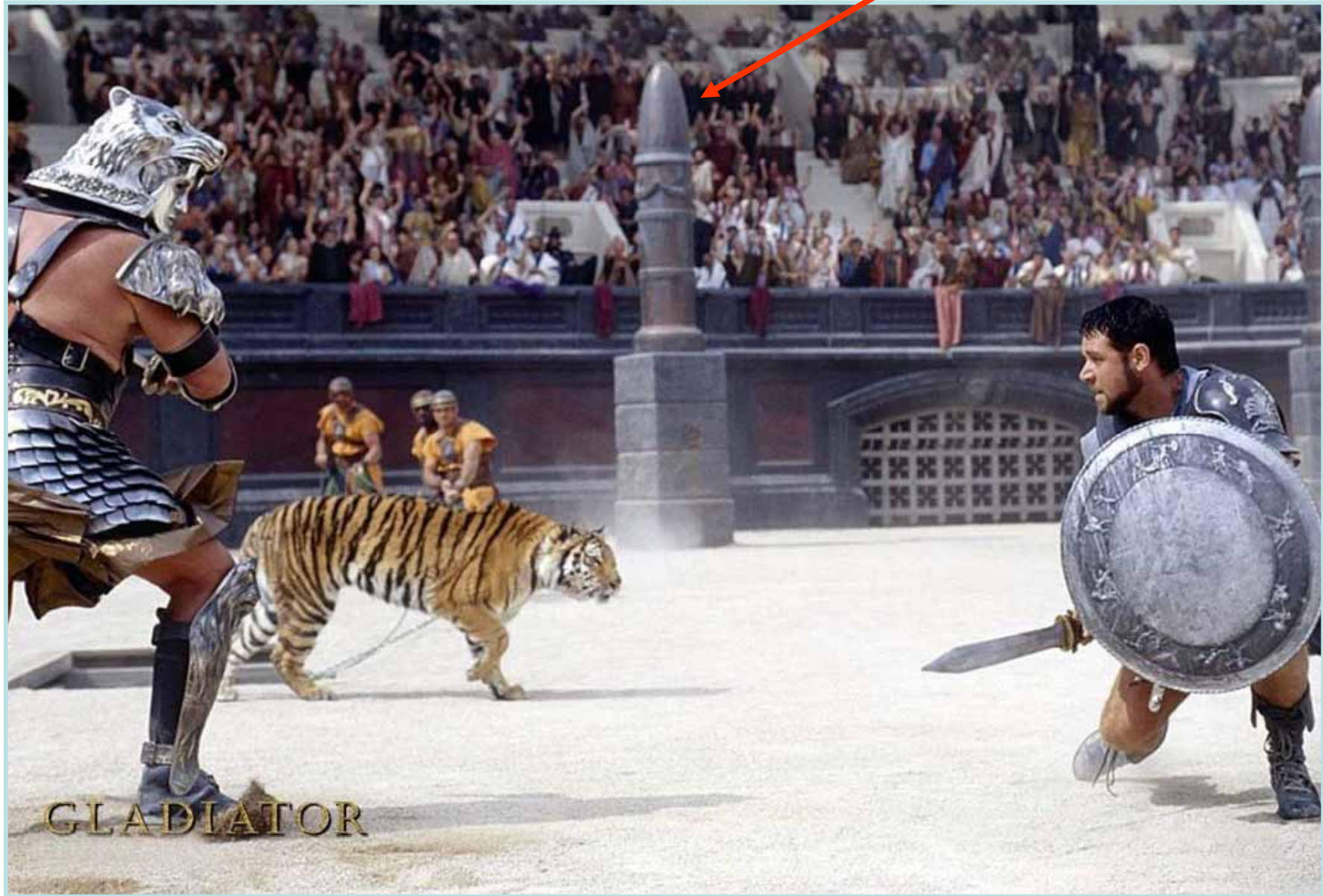


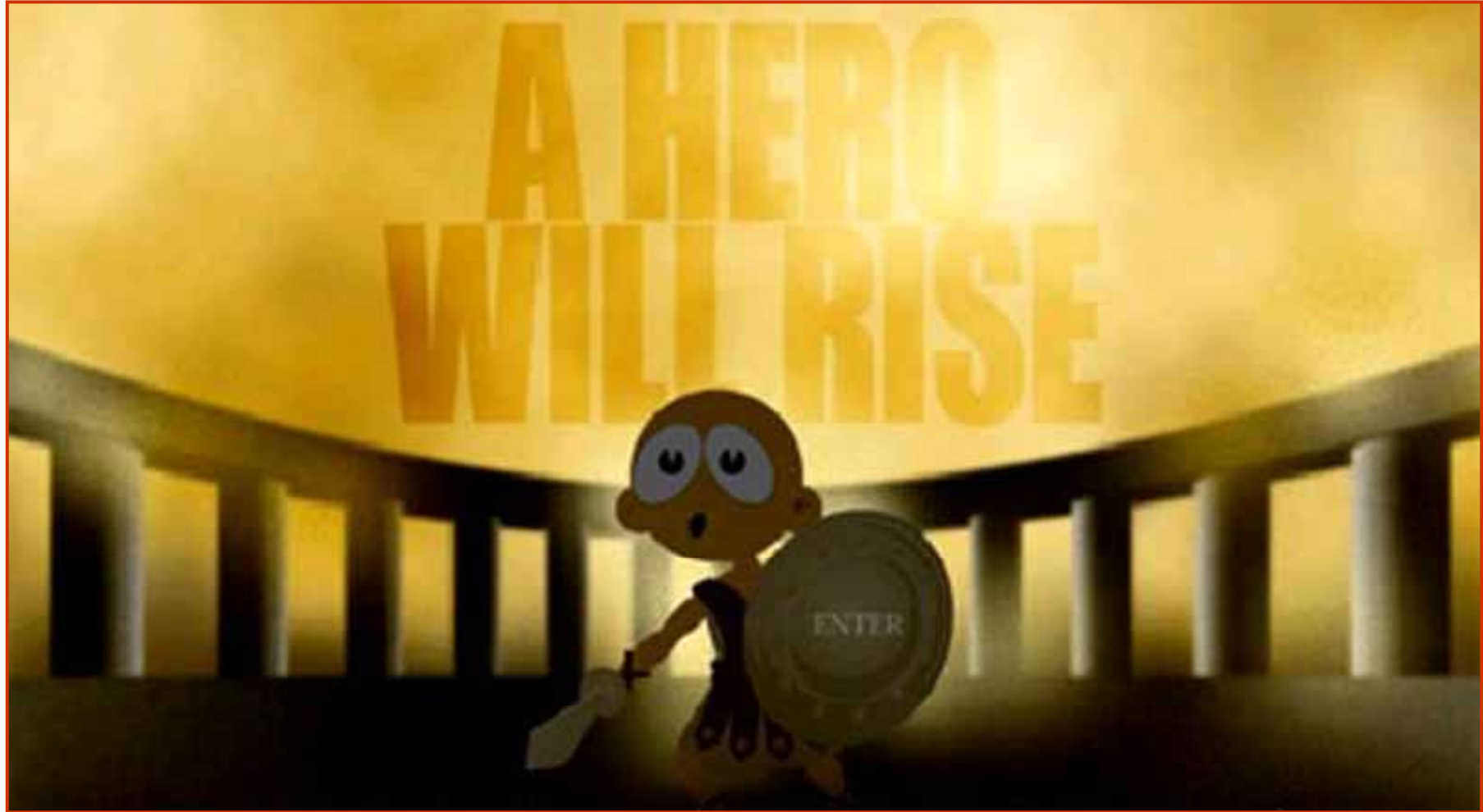
Giacinto Marrocco – Gianantonio Manzoni

**UOC Chirurgia Pediatrica
Ospedale S.Camillo Forlanini – Roma**

**UOSD Urologia Pediatrica
Fondazione IRCCS Ca'Granda
Ospedale Maggiore Policlinico - Milano**

The quest for the ideal phallus had already begun!!





Pediatric hypospadias 2010

“state of the art ”

- Who should operate ?
- When and how ?
- Short-term results ?
- Long-term results ?
- Future perspectives

Pediatric urologist
Pediatric surgeon
Plastic surgeon
Urologist

?

Journal of Plastic, Reconstructive & Aesthetic Surgery (2009) 62, 365–368

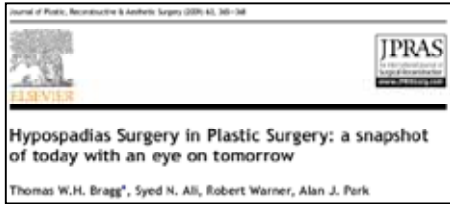


ELSEVIER

JPRAS
An International Journal of
Surgical Reconstruction
www.JPRASurg.com

Hypospadias Surgery in Plastic Surgery: a snapshot of today with an eye on tomorrow

Thomas W.H. Bragg*, Syed N. Ali, Robert Warner, Alan J. Park



UK NHS surgical teams share in hypospadias surgery

42 plastic surgeons carry out hypospadias surgery

Number of patients per year

Two-thirds < 25

One-third 26-50

One third > 50

Techniques employed

- Bracka 88%
- Snodgrass 45%
- MAGPI 43%

Age at operation: 3 y. or more

84 consultants spread across the specialties of:

Pediatric surgery (57%)

Plastic surgery (43%)

Pediatric urologist
Pediatric surgeon
Plastic surgeon
Urologist

?

BJUInternational 2004

Hypospadias surgery: when, what and by whom?

GIANANTONIO MANZONI, AIVAR BRACKA*, ENZO PALMINTERI† and GIACINTO MARROCCO‡

*Department of Urology and Section of Paediatric Urology, Ospedale di Circolo, Varese, Italy, *Department of Plastic Surgery, Wordsley Hospital, Stourbridge, West Midlands, UK, †Centre for Urethral and Genitalia Reconstructive Surgery, Arezzo, and ‡Department of Paediatric Surgery, Ospedale S. Camillo, Rome, Italy*



The best

I do an hypospadias repair with great interest & c



repair once a month!
hypospadiologist!

Pediatric hypospadias 2010

“state of the art ”

- How ?

- 1- stage repair

advancement / meatal-glanduloplasty

urethral plate tubularisation (Duplay, Snodgrass)

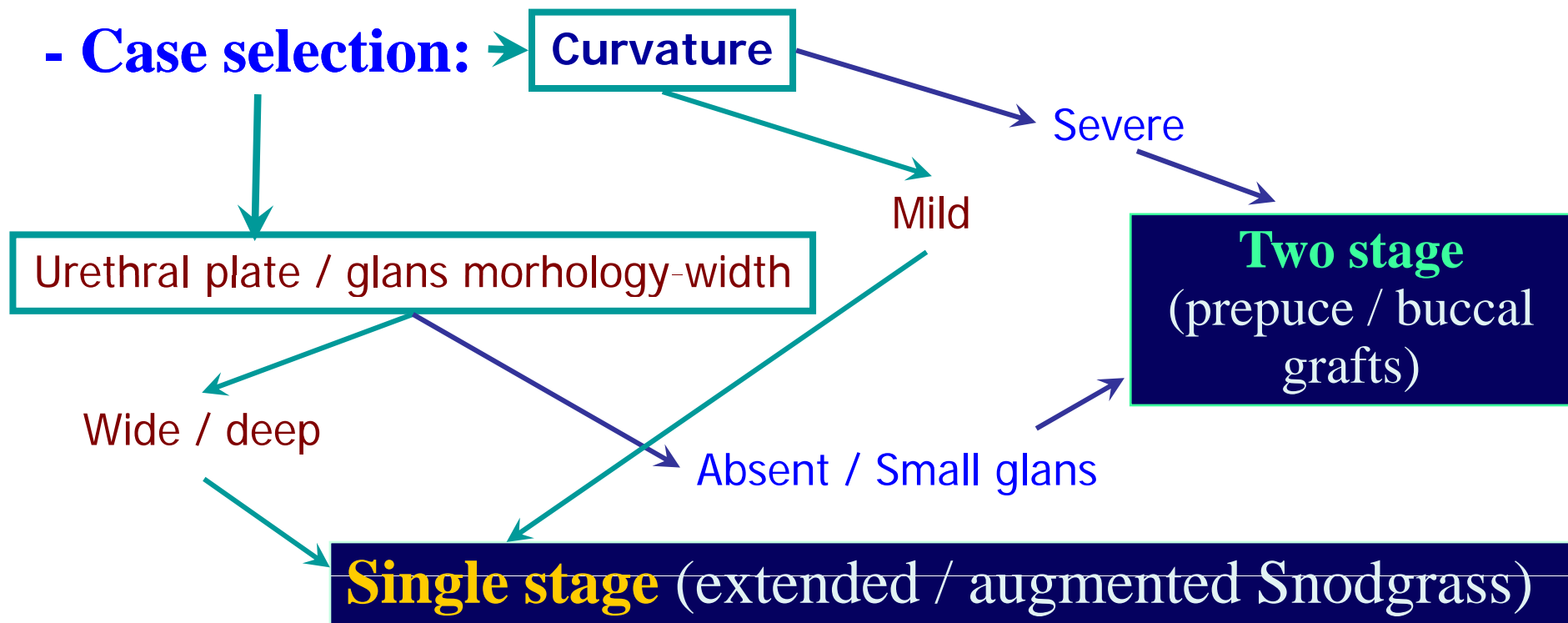
urethral plate augmentation (Onlay, Inlay)

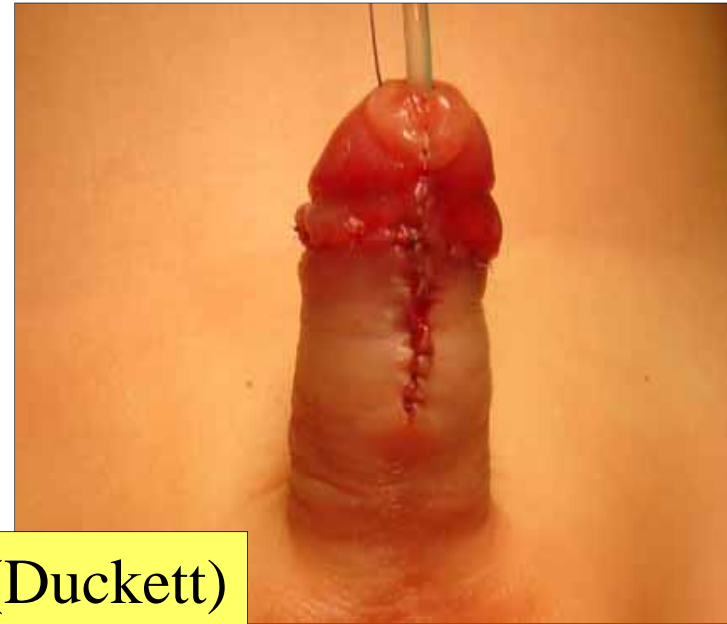
urethral plate re-arranged (TPIF, Koyanagi)

- 2- stage repair

urethral plate substitution (Bracka)

How to decide





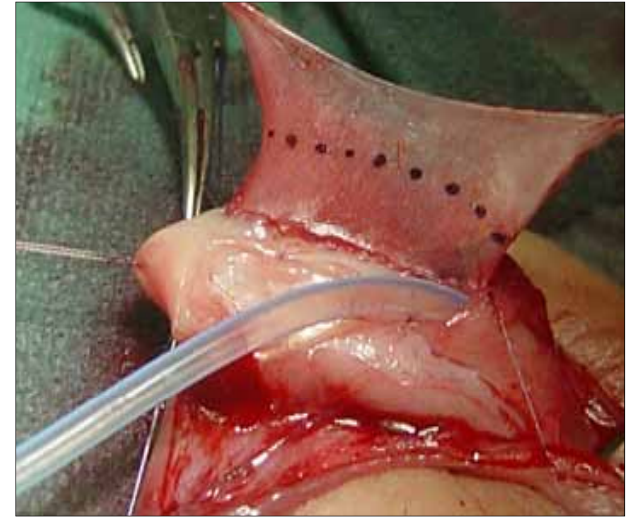
MAGPI (Duckett)



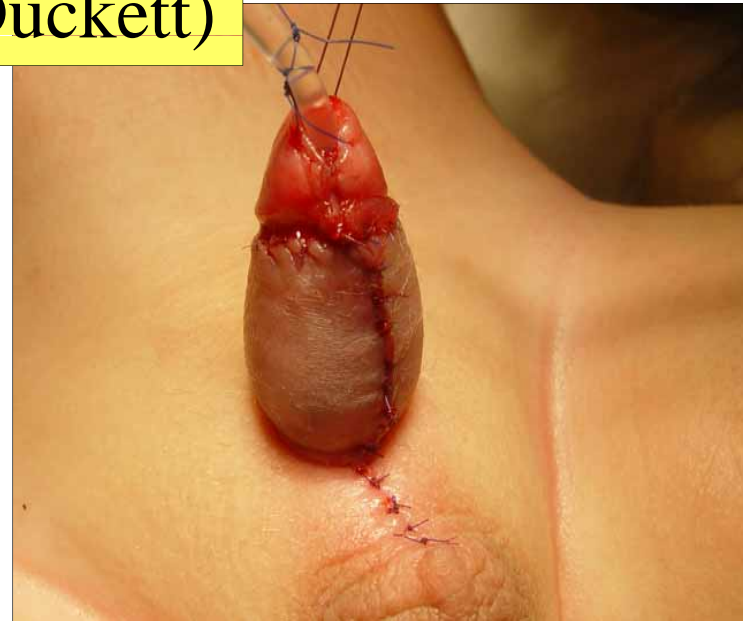
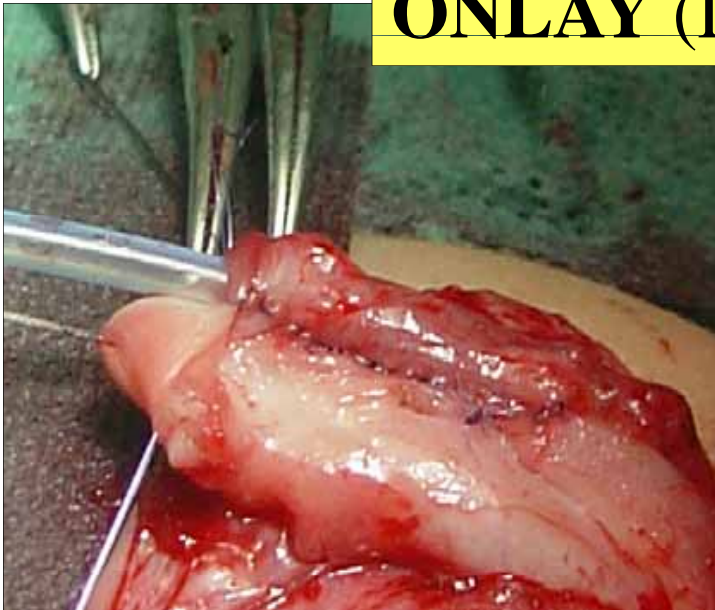
Glans Approximation Procedure (Zaonz)

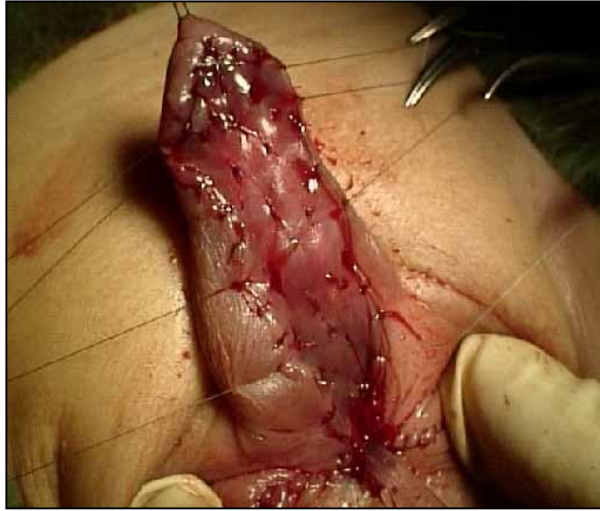


TIP (Snodgrass)



ONLAY (Duckett)





2 stage (Bracka)



VERY DISTAL HYPOSPADIAS

Cosmesis is often the only real indication for treatment
is surgical correction always necessary ?



Reconstructive Urology

Adaptation of Adults to Uncorrected Hypospadias

Peter R. Dodds, Stephen J. Batter, Dennis E. Shield, Scott R. Serels, Francis A. Garafalo, and Paul K. Maloney

- This paper coming from a group of general urologist from Connecticut regarding a 2 year prospective study about 56 adult with uncorrected distal hypospadias without marked chordee.
- The results of the study show that many adults with hypospadias appear to adapt to their congenital anomaly without surgical correction.
- Most of them expressed satisfaction with the appearance of their genitalia, and many stated that they were unaware they had a genital abnormality. None of the patients were known to have infertility on the basis of the location of the urethral meatus.
- Finally, the great majority of patients reported that they could void in the standing position, although they might have angulation or spraying of the urinary stream.



Family

Impotence

Infertility

Homosexuality!!!

UTI



Treating pediatrician

Bad urinary flow

Must undergo correction!!!!

He will be different from peers



Pediatric hypospadias 2010

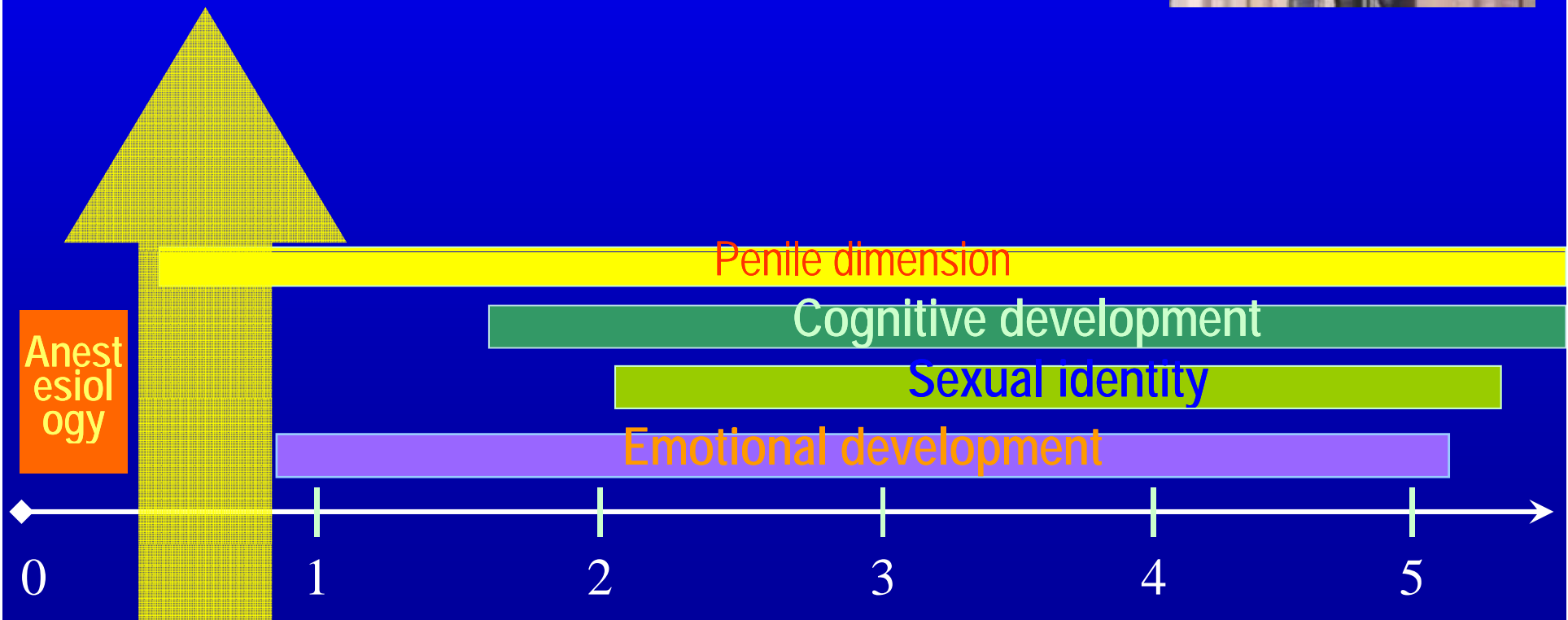
“state of the art ”

- When

When?

Ideal age for surgery

6-10 months of life
Optimal window



Pediatric hypospadias 2010

“state of the art ”

- Short-term results ?

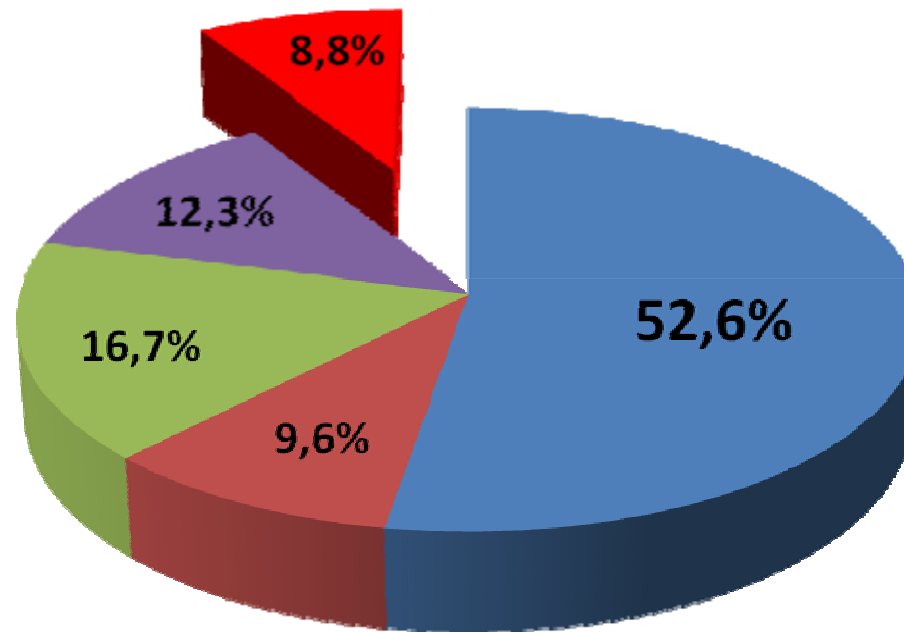
Short-term results

- Milano – UOSD Pediatric Urology
Policlinico Maggiore 2009-2010



This a unique example of modern approach to hypospadias surgery where all the surgeons involved have a dedicated experience and quite long personal training.

Hypospadias Surgery May 2009 – May 2010 (114 pts)



■ Distal (60)

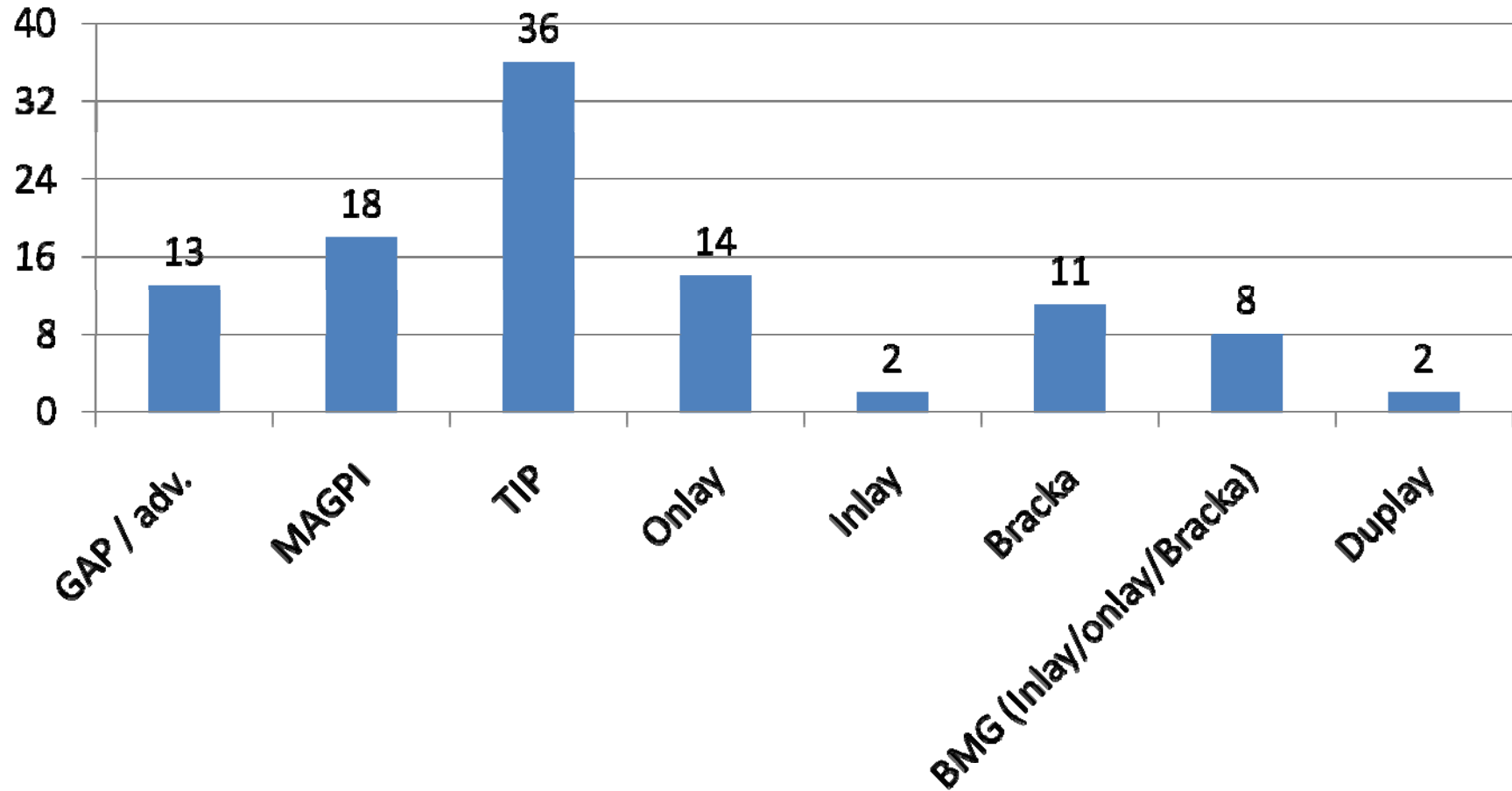
■ Mid-penile (11)

■ Proximal (19)

■ Complx / Redo (14)

■ Fistulas (10)

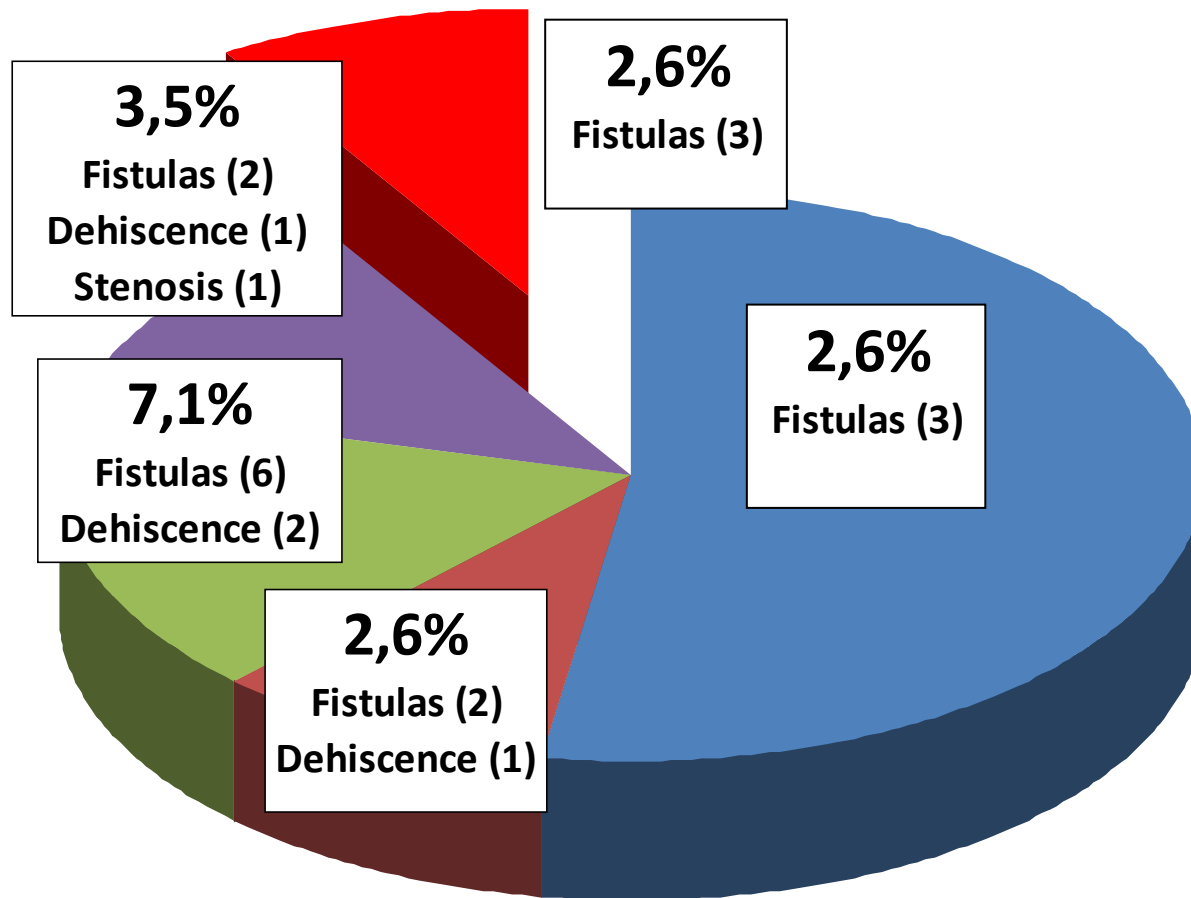
Type of repair (104)



U.O.S.D Urologia Pediatrica

Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico - Mi

Overall Complication rate (18,4 %)



■ Distal (60)	■ Mid-penile (11)	■ Proximal (19)
■ Complex / Redo (14)	■ Fistulas (10)	



Tubularized incised plate hypospadias repair for distal hypospadias

Warren T. Snodgrass*, Nicol Bush, Nicholas Cost

Abstract *Purpose:* We report surgical technique and outcomes in consecutive patients with primary distal hypospadias.

Materials and methods: A prospectively maintained database of all patients operated by WS in 2000–2008 was reviewed for pertinent data in consecutive patients.

Results: A total of 551 consecutive patients of mean age 17 months underwent distal tubularized incised plate hypospadias repair by urethral plate tubularization with (459) or without (92) midline incision. Follow up occurred for 426 (77%) at a mean of 8.2 months. Calibration and/or uroflowmetry were obtained in 279 (65%). Complications developed in 19 (4%), including nine fistulas, nine glans dehiscences and one delayed meatal stenosis from balanitis xerotica obliterans. These complications could not be attributed to meatal location, urethral plate configuration or incision, suture materials or methods for urethroplasty and glansplasty, or to use or not of a dartos flap barrier layer.

Conclusions: No contra indication to urethral plate tubularization with or without incision was found in 551 consecutive patients operated for distal hypospadias. Reliability of the procedure was confirmed by the low complication rate and success using varied suture materials and methods.



REVIEW ARTICLE

Tubularized incised plate proximal hypospadias repair: Continued evolution and extended applications

Warren Snodgrass^{a,b,*}, Nicol Bush^{a,b}

Abstract *Objective:* We report additional technical modifications and extended application of proximal TIP hypospadias repair in consecutive patients operated by a single surgeon.

Materials: During a 39-month period, 36 patients underwent primary proximal hypospadias surgery, with 26 undergoing TIP and 10 two-stage repair for a thin urethral plate (UP) (1) or ventral penile curvature (VC) requiring UP transection (9). Of the TIP repairs, 16 had UP elevation from the corpora cavernosa to facilitate VC straightening while maintaining the UP for urethroplasty. All TIP patients underwent two-layer urethroplasty with tunica vaginalis coverage over the neourethra.

Results: With mean follow up of 12 months (2–38) in 24 TIP patients, 16 had calibration and 11 urethroscopy 6–12 months postoperatively. Complications occurred in three (13%), glans dehiscence (2) and neourethral stricture (1), which represents a significant reduction versus our prior reports. Non-randomized preoperative testosterone in 8/24 with follow up did not influence complication rates. TIP incision of the elevated UP did not divide it into separate strips, or impair vascularity.

Conclusions: Dissection of the UP from the corpora facilitates correction of VC while preserving the plate, without increasing TIP urethroplasty complications. Overall, complication rates for TIP have significantly diminished with technical modifications and experience. The role for neoadjuvant hormonal therapy remains unclear. Despite straightening VC preserving the UP, intraoperative assessment deemed it unsuitable for TIP in one case (4%).

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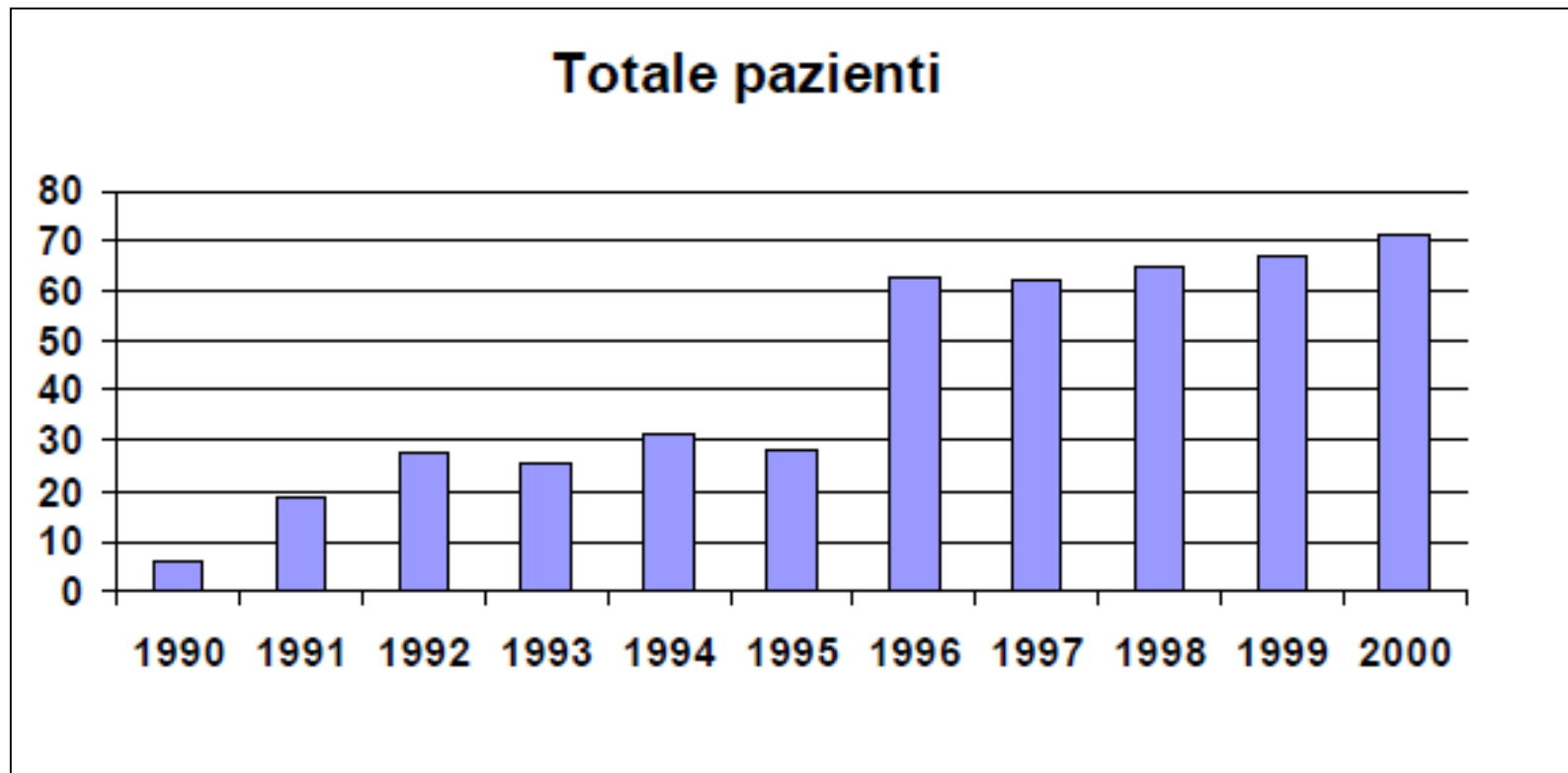
Pediatric hypospadias 2010

“state of the art ”

- Long-term results ?

Long-term results

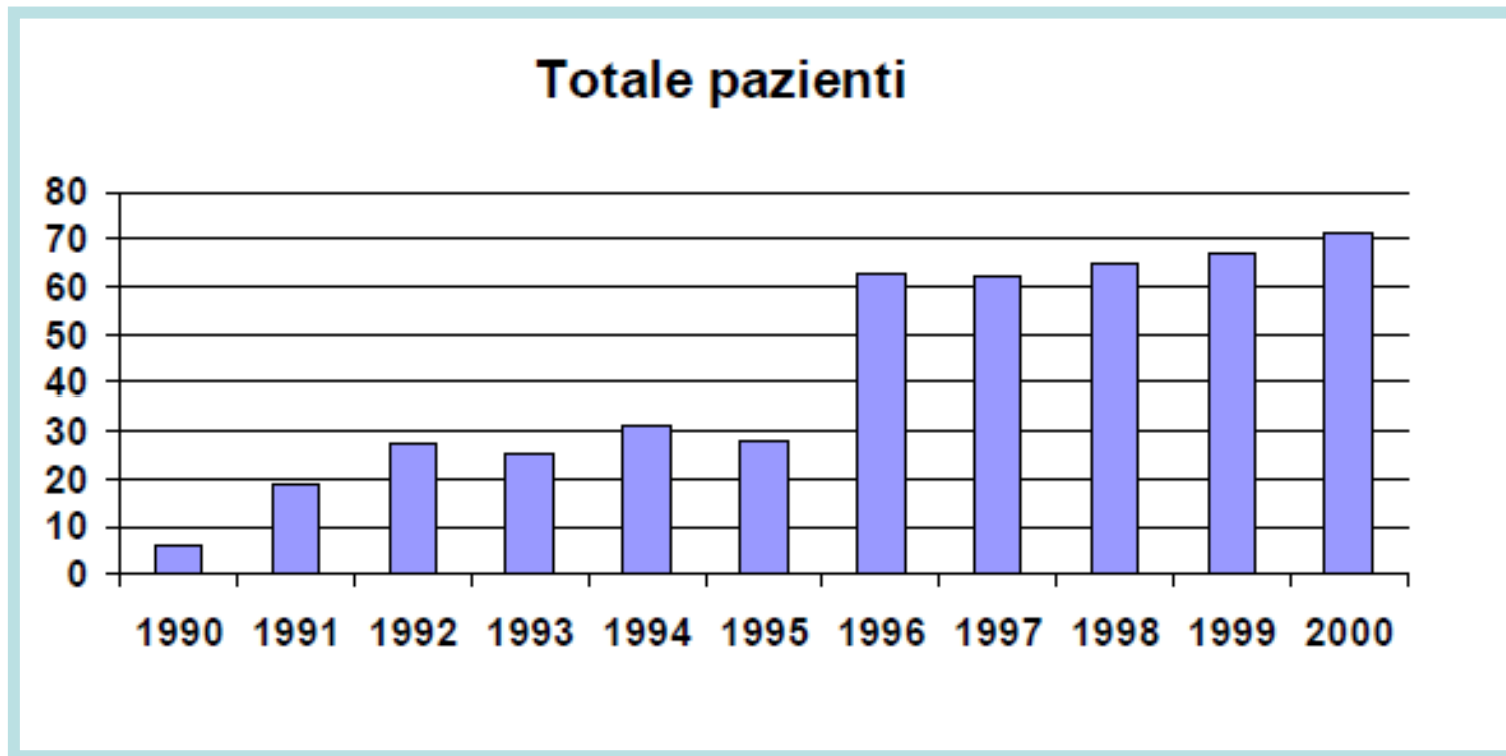
- Roma - S.Camillo Ped. Surgery 1990-2000
- 446 Patients



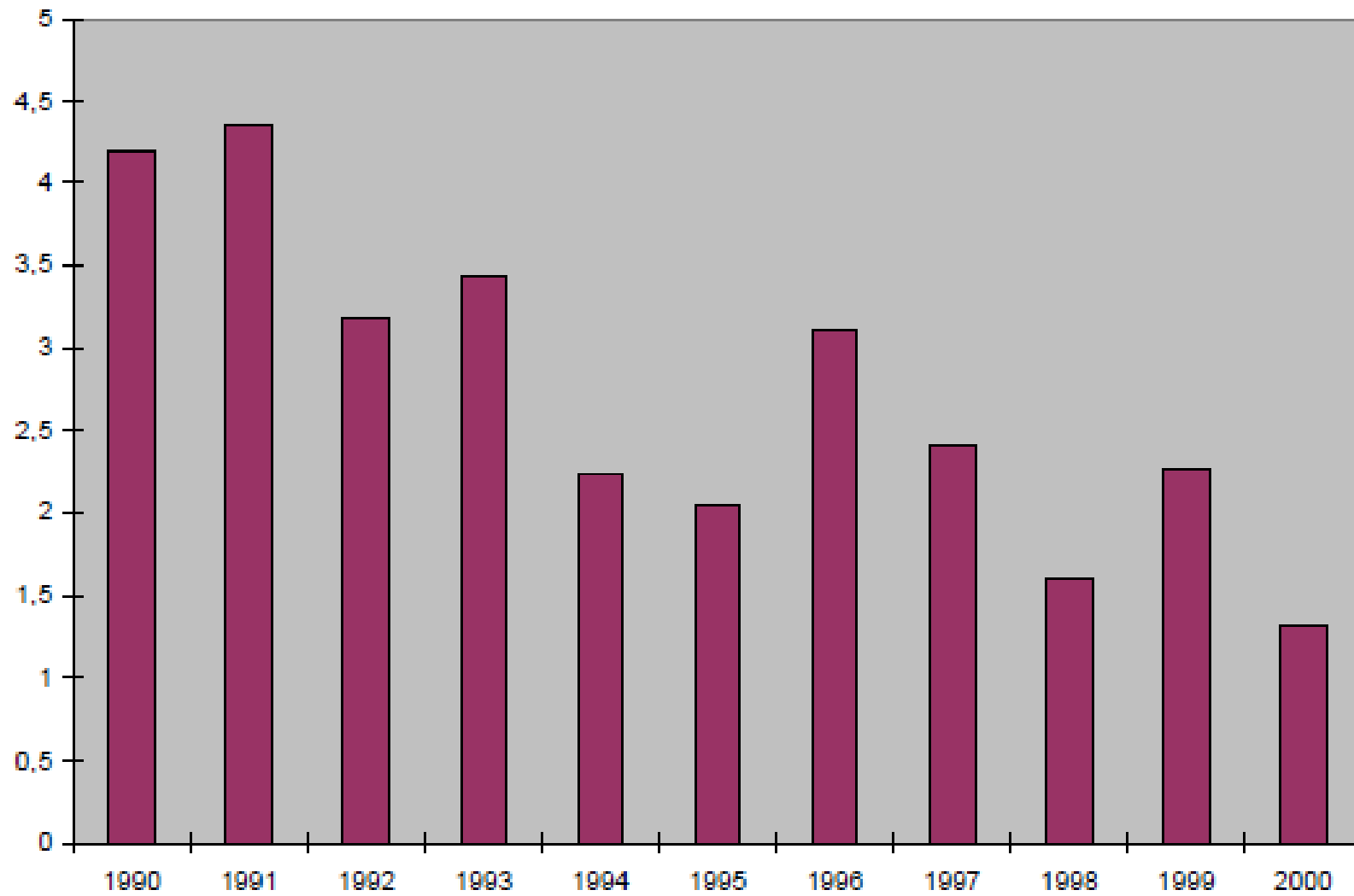
January 1990 – January 2000

Personal experience on 446 hypospadias cases

- All patients treated by a single surgeon
- The first years refer to an early phase of my surgical experience (learning curve).
- The surgical techniques changed during the observation time.
- All the patients have a minimum follow up of 10 years.

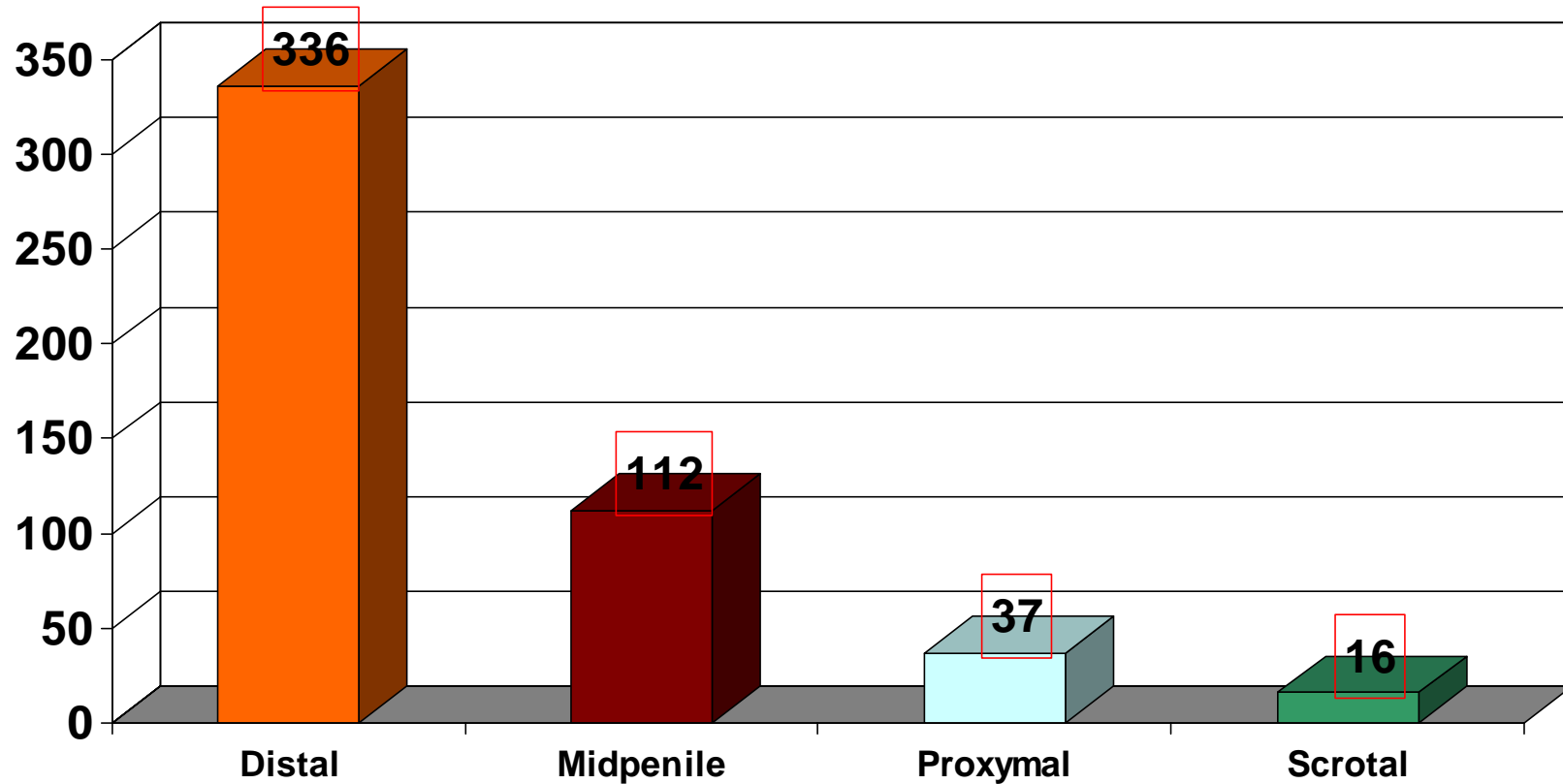


January 1990 – January 2000



Age at operation 1990 -> 2000

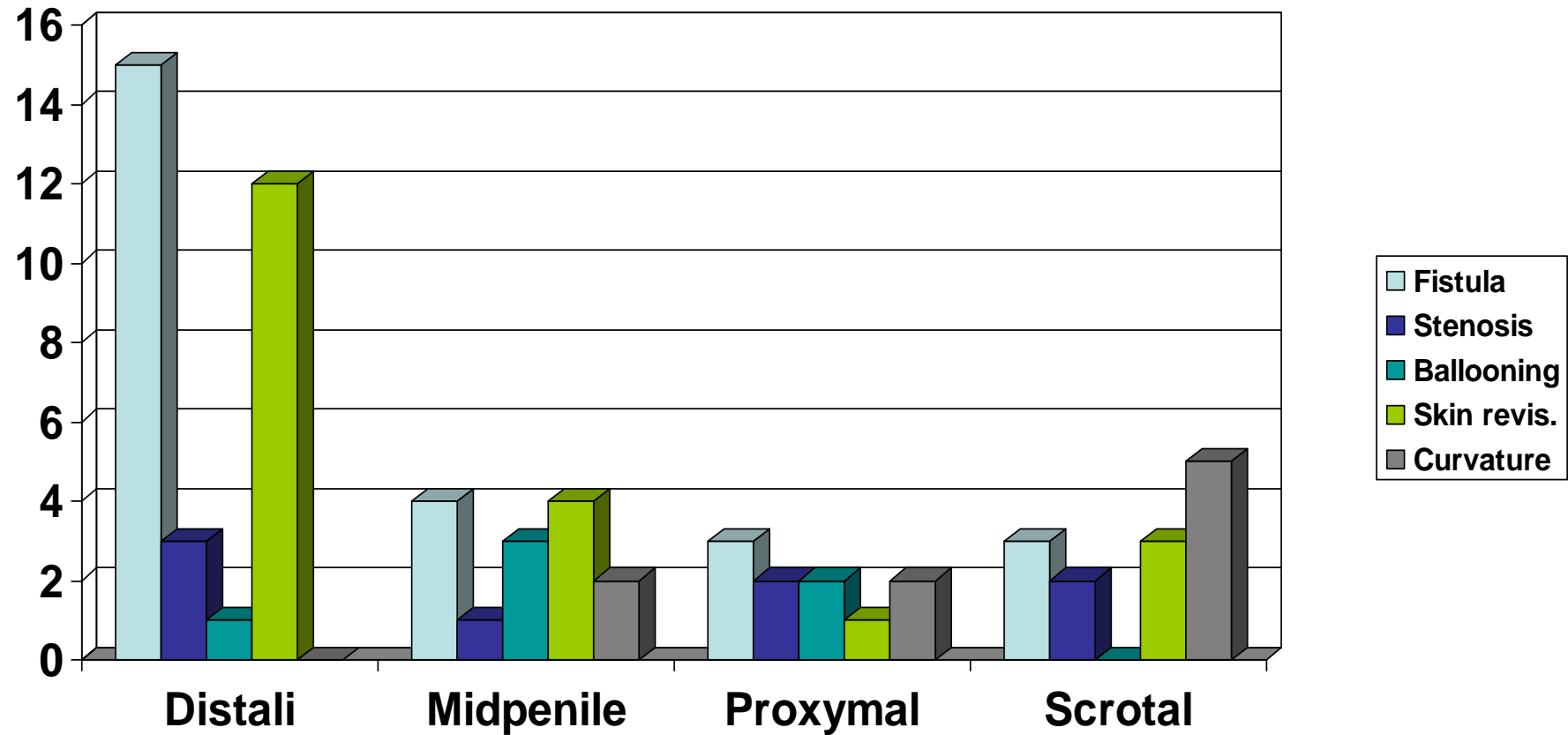
446 Hypospadias – Type of defect



Complications in 446 patients

	N.	%
Total n. of complications	69	15,47
Fistula	25	4,9
Stenosis	9	2.0
Ballooning	6	1,3
Skin revision	21	4,7
Curvature (recurr. or persistent)	9	2,0

Complications



Age now

Age	N.	%
10-15 years	250	12,87
15-20 years	175	
20-25 years	104	4,5
25-35 years	31	1,2
> 35 years	7	5,1

Long term follow up

- 142 patients sexually active

Most common complaints

Persistent curvature

Weak / retained ejaculation

Post-micturition dribbling

Premature ejaculation

Difficulty in establishing a stable relationship

How to evaluate the
results of
hypospadias
correction ?

Hystorical papers

Psychosexual adjustment of men who underwent hypospadias repair : a norm-related study

M.M.Mureau et al. *JUrol* 154: 1351-55, 1995

Satisfaction with penile appearance after hypospadias surgery : the patient and surgeon view

M.M.Mureau et al. *JUrol* 155: 703-6, 1996

Aspects of adult satisfaction with the results of surgery for hypospadias performed in childhood

Aho M.O. et al. *Eur Urol* 32: 218, 1997

Sexuality after hypospadias repair

A.Bracka *BJUInternational* 83 (Supp.3): 29-33, 1999

Psychosocial adaptation of middle childhood boys with hypospadias after genital surgery

Sanberg D.E. et al. *J Pediatr Psychol* 26: 465, 2001

HOSE: an objective scoring system for evaluating the results of hypospadias surgery

A.J.A. HOLLAND, G.H.H. SMITH*, F.I. ROSS and D.T. CASS

Departments of Academic Surgery, and *Paediatric Urology, The Children's Hospital at Westmead, Royal Alexandra Hospital for Children, Sydney, Australia

HOSE - Hypospadias Objective Scoring Evaluation

Assessor:	Patient:	
Date:		
Variable	Score	Diagram
1. Meatal location		
Distal glanular	4	
Proximal glanular	3	
Coronal	2	
Penile shaft	1	
2. Meatal Shape		
Vertical slit	2	
Circular	1	
3. Urinary Stream		
Single stream	2	
Spray	1	
4. Erection		
Straight	4	
Mild angulation (< 10°)	3	
Moderate angulation (> 10° but < 45°)	2	
Severe angulation (> 45°)	1	
5. Fistula		
None	4	
Single - subcoronal or more distal	3	
Single - proximal	2	
Multiple or complex	1	

Hypospadias: a critical analysis of cosmetic outcomes using photography

L. BASKIN

Departments of Urology and Paediatrics, University of California, San Francisco, CA, USA

ANALYSIS OF COSMETIC OUTCOMES OF HYPOSPADIAS BY PHOTOGRAPHY 515



Fig. 1. a–t. Distal hypospadias repairs. For each case the images on the left were taken before the middle column (one day after the right image) 3–2 months after surgery. Patients in a, c, f, h, and j were repaired using the GALT procedure, and b, d, e, g, and i using the MACTIS technique.

ASSESSING OUTCOMES OF HYPOSPADIAS SURGERY

Warren T. Snodgrass
Department of Urology
University of Texas
Southwestern Medical Center at Dallas
Dallas, Texas

The Pediatric Penile Perception Score: An Instrument for Patient Self-Assessment and Surgeon Evaluation After Hypospadias Repair

Daniel M. Weber,^{*,†} Verena B. Schönbucher, Markus A. Landolt and Rita Gobet

From the Division of Pediatric Urology, Department of Pediatric Surgery and Department of Psychology (MAL), University Children's Hospital, Zurich, Switzerland

Purpose: The aim of this study was to develop and evaluate an instrument that allows assessment and comparison of penile perception of patients, parents and surgeons.

Materials and Methods: A total of 77 boys 6 to 17 years old who had undergone hypospadias repair were interviewed by a psychologist with a standardized questionnaire concerning penile self-perception with regard to meatus, glans, skin and general appearance. The Pediatric Penile Perception Score was derived from the sum of these 4 items. The results were compared with a control group of age matched boys following inguinal hernia repair. Parents were asked via questionnaire to report the penile appearance of their son using the Pediatric Penile Perception Score. A total of 56 patients accepted standardized photographic documentation, and their pictures were sent for evaluation with the Pediatric Penile Perception Score to 6 blinded urologists.

Results: The Pediatric Penile Perception Score allowed us to assess perception of the genitalia by patients, parents and urologists. Statistical analysis of the Pediatric Penile Perception Score assigned by the urologist revealed good interrater reliability (interclass correlation 0.75 to 0.88) and stability ($r = 0.59$ to 0.83). Intercorrelation of the items "meatus," "glans" and "skin" with "general appearance" was good among the boys, parents and urologists. Patients with hypospadias expressed high satisfaction with the penile appearance, which did not differ significantly from age matched controls. However, parents and urologists were less satisfied with the penile appearance than were the patients themselves.

Conclusions: The Pediatric Penile Perception Score is a reliable instrument to assess penile self-perception in children after hypospadias repair, and for appraisal of the surgical result by parents and uninvolved urologists.

Long-Term Cosmetic and Sexual Outcome of Hypospadias Surgery: Norm Related Study in Adolescence

of THE JOURNAL
UROLOGY®

Kimihiko Moriya,* Hidehiro Kakizaki, Hiroshi Tanaka, Tsuyoshi Furuno, Hiroshi Higashiyama, Hiroshi Sano, Takeya Kitta and Katsuya Nonomura

From the Departments of Urology, Hokkaido University Graduate School of Medicine, Sapporo and Asahikawa Medical College (HH), Asahikawa, Japan

Long-Term Followup of Hypospadias: Functional and Cosmetic Results

of THE JOURNAL
UROLOGY®

Sybren P. Rynja, Gerlof A. Wouters, Maaïke Van Schaijk, Esther T. Kok, Tom P. De Jong and Laetitia M. De Kort*

From the Departments of Urology, Pediatric Urology and Psychology, University Medical Center Utrecht, Utrecht, The Netherlands

Journal of Pediatric Urology (2010) 6, 54–59



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Journal of
Pediatric
urology

Body image and sexuality in adolescents after hypospadias surgery

Stéphanie Vandendriessche^a, Dieter Baeyens^{a,b,*}, Eline Van Hoecke^b, Astrid Indekeu^b, Piet Hoebeke^b

Journal of Pediatric Urology (2010) xx, 1–4



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Journal of
Pediatric
urology

Long-term outcome of severe hypospadias

M.B. Aulagne^a, L. Harper^{b,*}, S. de Napoli-Cocci^b, J.M. Bondonny^a, E. Dobremez^a

Retrospective chart review dominates the hypospadias literature although it is plagued by incomplete recording of pertinent data, and it introduces biases that limit our ability to trust observations made and conclusions drawn. Prospective data collection increases the capture of relevant details and makes surgeons operate more consistently, thus reducing sources of bias. Accordingly studies based on prospectively collected data are much more likely to provide meaningful information than those dependent on retrospective chart reviews.

It is time to move decision making in hypospadias (and everything else we do) from the era of opinion and surgeon preference to data driven management.

Surgical Management of Primary Severe Hypospadias in Children: Systematic 20-Year Review

THE JOURNAL
of
UROLOGY®

Marco Castagnetti* and Alaa El-Ghoneimi

From the Section of Pediatric Urology, Urology Unit, Department of Oncological and Surgical Sciences, University Hospital of Padova, Padova, Italy (MC), and Department of Pediatric Surgery and Urology, Hôpital Robert Debré, APHP, University of Paris VII, René Diderot, Paris, France (AE-G)

*Editorial
in press*

Purpose: We systematically reviewed the literature published during the last 20

Abbreviations

Conclusions: The present systematic review shows the weak evidence backing current management of primary severe hypospadias. We even lack a clear-cut definition of severe hypospadias and associated curvature. Hence, while we developed general recommendations for treatment based on our review of available evidence, we emphasize the need to establish shared criteria for accurate preoperative or intraoperative patient stratification, and to define objective outcome measures and followup intervals for data reporting to make comparison of surgical approaches reliable.

appear to be definitively superior. After urethral plate division a staged urethroplasty has lower complication rates but a second operation is required, which might otherwise be avoided in approximately 70% of cases.

Conclusions: The present systematic review shows the weak evidence backing current management of primary severe hypospadias. We even lack a clear-cut definition of severe hypospadias and associated curvature. Hence, while we developed general recommendations for treatment based on our review of available evidence, we emphasize the need to establish shared criteria for accurate preoperative or intraoperative patient stratification, and to define objective outcome measures and followup intervals for data reporting to make comparison of surgical approaches reliable.

doi:10.1016/j.juro.2011.08.024

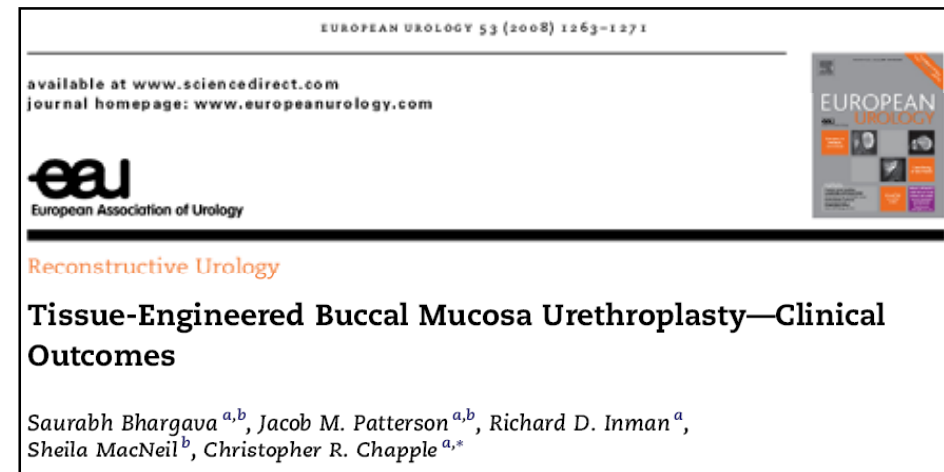
* Correspondence: Section of Pediatric Urology, Urology Unit, Department of Oncological and Surgical Sciences, University Hospital of Padova, Monziblocco Ospedaliero, Via Giustiniani 2, 35128 Padova, Italy (telephone: 39-049-8212737; FAX: 39-049-8212721; e-mail: marco.castagnetti@hotmail.com).

See Editorial on page 1255.

Evaluation of the results !

- In an era where outcomes are increasingly being used to assess performance of individual units /surgeons there is a need for consistent reporting standards to allow comparison of results both nationally and internationally
- Most standards of reporting in the current published urological literature are inconsistent, making comparison between series difficult, resulting in the exclusion of the majority of case series
- Minimum standards for surgeons reporting outcomes from hypospadias surgery should be eventually defined

The future ...



Enjoy Tuscany!





1^o European Conference on Failed Hypospadias Repair

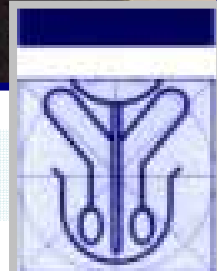
September 18th, 2010 - Arezzo, Italy



*To remember
a great friend ...*



CENTER for URETHRAL RECONSTRUCTIVE SURGERY



Meta-analysis for distal hypospadias repair (Mathieu vs TIP)

in press

Journal of
**Pediatric
urology**

Table 1. Included papers and summary of results

Author	Technique	Age range (months)	Average Age (months)	Follow up (months)	Total Number	Fistula	Meatal Stenosis	Urethral Stenosis	Stents
Anwar-ul-Haq, Bader I, Akhter N, et al. ⁵	TIP	24 to 144	70	6	25	3	3	0	Y
Baccala AA, Ross J, Detore N, Kay R. ⁶	TIP	6 to 36	16.7	6.3	93	1	1	NA	Y
Cheng EY, Vemulapalli SN, Kropp BP, et al. ⁷	TIP	NA	NA	4 to 66	414	0	1	NA	B
Elder JS, Duckett JW, Snyder HM. ⁸	Mathieu	6 to 192	17	NA	34	5	0	NA	N
Furness PD, Hutcheson J. ⁹	TIP	9 to 192	21.1	19	95	1	0	0	Y
Ghall AM, el-Malik EM, al-Malki T, et al. ¹⁰	Mathieu	NA	NA	19	205	2	0	0	Y
Gonzales ET Jr, Veeraraghavan KA, Delaune J. ¹¹	Mathieu	<24	NA	NA	59	18	1	0	Y
Hakim S, Merguerian PA, Rabinowitz R, et al. ¹²	Mathieu	5 to 156	19.9	6	114	0	0	0	Y
Hakim S, Merguerian PA, Rabinowitz R, et al. ¹²	Mathieu	6 to 156	19.9	6	222	3	0	NA	Y
Holland AJ, Smith GH, Cass DT. ¹³	TIP	6 to 144	13	NA	60	6	1	NA	N
Jayanthi VR. ¹⁴	TIP	5 to 60	9.5	9.4	110	6	3	0	Y
Kiss A, Nyirady P, Pirot L, Merksz M. ¹⁵	Mathieu	20-62	36	12	19	1	0	0	Y
Leclair MD, Camby C, Battisti S, et al. ¹⁶	TIP	2 to 149	15.7	12.4	162	1	0	0	Y
Man DW, Vordermark JS, Ransley PG. ¹⁷	Mathieu	NA	NA	NA	4	0	1	0	N
Merrot T, Teklali Y, Dodat H, Alessandrini P. ¹⁸	Mathieu	NA	NA	21	392	5	2	NA	N
Ozturk H, Onen A, Otcu S, Kaya M, et al. ¹⁹	TIP	6- 156	84	12	14	1	1	NA	Y
Ozturk H, Onen A, Otcu S, Kaya M, et al. ¹⁹	Mathieu	6- 156	84	12	20	2	0	NA	Y
Rees MJ, Sinclair SW, Hiles RW, et al. ²⁰	Mathieu	NA	NA	NA	33	7	NA	NA	N
Retik AB, Mandell J, Bauer SB, et al. ²¹	Mathieu	5 to 192	NA	6	204	0	NA	NA	Y
Snodgrass W. ²²	TIP	6-132	na	22	16	0	0	NA	Y
Soylet Y, Emir H, Besik C, et al. ²³	Mathieu	6 - 168	36	24	78	5	3	2	Y
Stehr M, Lehner M, Schuster T, et al. ²⁴	TIP	16 to 120	41.4	23.5	100	5	17	0	N
Uygur MC, Erol D, Germiyanofulu C. ²⁵	Mathieu	9 to 360	108	NA	164	34	NA	NA	Y
Zhou Y, Lu J, Takahashi G. ²⁶	TIP	14-108	3	8	11	1	NA	0	Y
Savanelli A, Esposito, Settemi A. ²⁷	TIP	9 to 60	26.9	24	65	5	2	NA	Y
Suoub M, Dave S. ²⁸	TIP	NA	13.6	18.5	74	7	NA	NA	Y
Akbiyik F, Tiryaki T, Senel E, et al. ²⁹	TIP	NA	3.48	24	437	17	14	NA	Y
Papouls G, Kaselas C, Skoumbs K, et al. ³⁰	Mathieu	NA	21.6	12	78	5	NA	NA	Y
Al-Ghoraly BA, Elashry OM, Al-Housain AE, et al. ³¹	TIP	6 to 156	NA	36	195	14	11	0	Y

NA = Not available from data presented



REVIEW ARTICLE

Comparison of outcomes of tubularized incised plate hypospadias repair and circumcision: A questionnaire-based survey of parents and surgeon

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Abstract *Aim:* We administered a standardized questionnaire to parents and operating surgeon to determine their opinions regarding outcomes from tubularized incised plate (TIP) hypospadias repair.

Methods: Likert scale questionnaires were used to assess six outcomes: overall penile appearance, cosmesis of meatus and skin, penile size, straightness during erection, and voided stream. These were answered by consecutive parents of boys 6 weeks following TIP hypospadias repair, as well as by the surgeon. Controls were normal boys 6 weeks after elective circumcision, with their parents and the surgeon answering the same questionnaires.

Results: There were no significant differences in responses between parents of boys undergoing TIP repair for distal ($n = 50$) to proximal ($n = 15$) hypospadias compared to parents of normal boys undergoing elective circumcision ($n = 22$). Surgeon impressions of cosmetic results were slightly, but significantly, more favorable than those of parents. Surgeon scores were higher for distal versus proximal hypospadias outcomes.

Conclusions: Our study provides objective evidence that parents consider TIP hypospadias repair to create a normally functioning and appearing penis. Parent and surgeon opinions of cosmetic outcomes were similar, although surgeon impressions were more favorable.

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