

Center for Reconstructive Urethral Surgery



GUIDO BARBAGLI M.D.

Arezzo - ITALY

e-mail: info@urethralcenter.it

Website: www.urethralcenter.it

Annual Congress

Mexican Urological Society

Monterrey - México

November 17 – 22, 2009

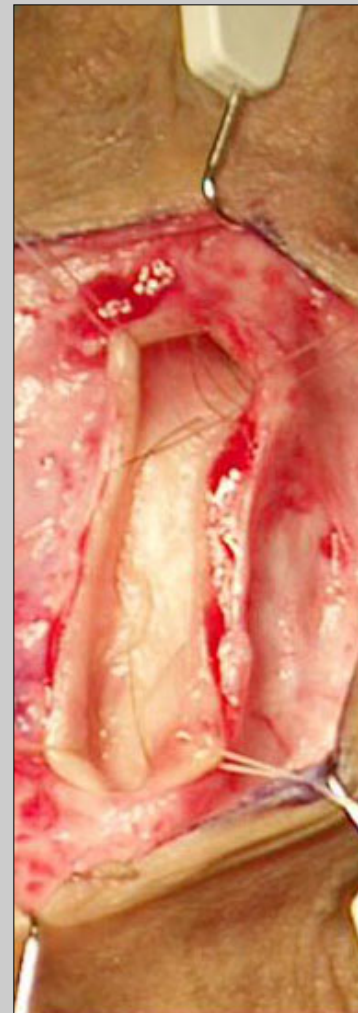
Failed hypospadias repair in adult population

International Congress on Hypospadias Surgery



Prishtina, 2 – 5 September 2007

...the other side of the coin



“ Strictures in adults who had a hypospadias repair is a growing industry ”



Andrich D.E. and Mundy A.R., Eur Urol 2008, 54: 1031-1041

The aim of this lecture is to present data coming from our industry

1176 patients

**The Center for
Reconstructive
Urethral Surgery**

Arezzo - Italy

223 patients



**The University
Children's Hospital**

Belgrade - Serbia

953 patients

Age range in 1176 patients

age (years)	N. patients
1 – 16	250 (21.2%)
17 – 20	451 (38.4%)
21 – 40	358 (30.5%)
41 – 60	112 (9.5%)
> 60	5 (0.4%)
< 16 years	250 (21.2%)
> 16 years	926 (78.8%)

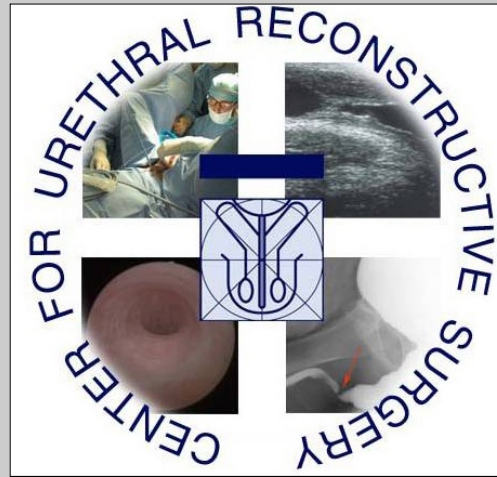
Barbagli G et al. J Urol 2010, January: in press



Patients with urethral stricture diseases: 1510

→ Failed hypospadias repair: 223 (14.7%)

Barbagli G et al. J Urol 2010, January: in press



Patients with penile urethral stricture diseases: 437



Failed hypospadias repair: 223 (51%)

Barbagli G et al. J Urol 2010, January: in press

Site of primary hypospadias in 1176 patients

glandular : 193 (16.4%)

penile : 702 (59.7%)

peno-scrotal: 281 (23.9%)



Barbagli G et al. J Urol 2010, January: in press

Number of operations to repair primary hypospadias in 1176 patients

N. operations	N. patients
1	130 (11.1%)
2	347 (29.5%)
3	320 (27.2%)
4	159 (13.5%)
5	108 (9.2%)
> 5	112 (9.5%)

minimum: 1 maximum: 23 median: 3

Barbagli G et al. J Urol 2010, January: in press

Number of operations to repair complications following primary hypospadias repair in 1176 patients

N. operations	N. patients
1	760 (64.6%)
2	280 (23.8%)
3	82 (6.9%)
4	31 (2.7%)
5	9 (0.8%)
> 5	14 (1.2%)

minimum: 1 maximum: 8 median: 2

Barbagli G et al. J Urol 2010, January: in press

Total number of operations to repair primary hypospadias repair and complications in 1176 patients

N. operations	N. patients
2	102 (8.7%)
3	289 (24.6%)
4	369 (31.4%)
5 – 10	311 (26.4%)
11 – 20	91 (7.7%)
> 20	14 (1.2%)

minimum: 2 maximum: 23 median: 5

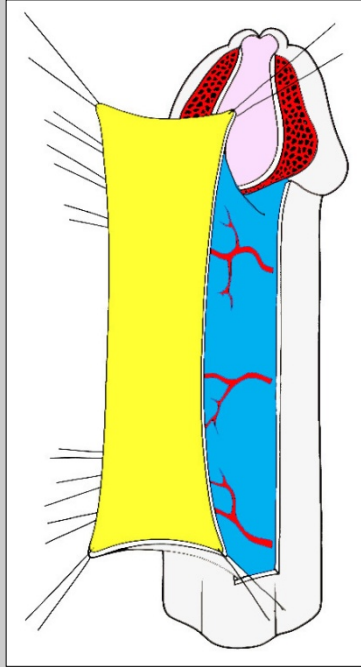
Barbagli G et al. J Urol 2010, January: in press

In conclusion, 1176 patients underwent a median of 5 surgical operations to repair primary and failed hypospadias



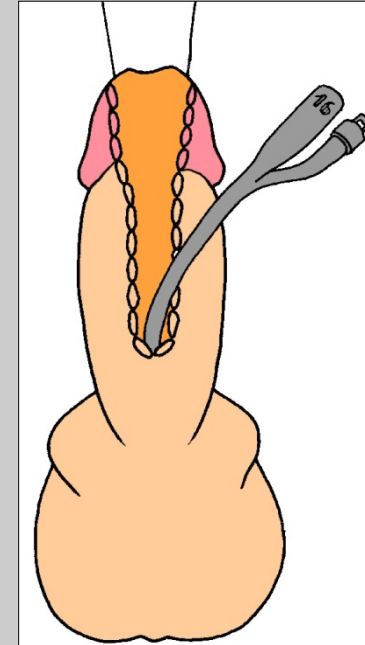
No other congenital abnormality of the body requires a median of 5 surgical operations to be cured !

Surgical techniques in 1176 patients



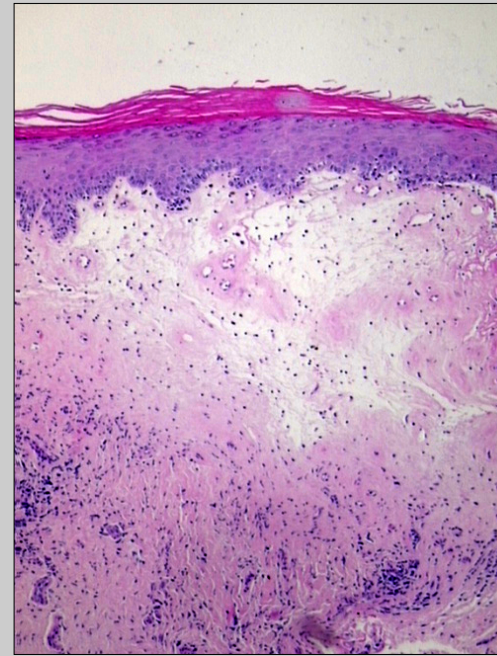
One-stage repair: 760

(64.6%)



Staged repair: 416 (35.4%)

Barbagli G et al. J Urol 2010, January: in press



**Out of 1176 patients, 89 (7.6%) showed histologically proven
lichen sclerosus**

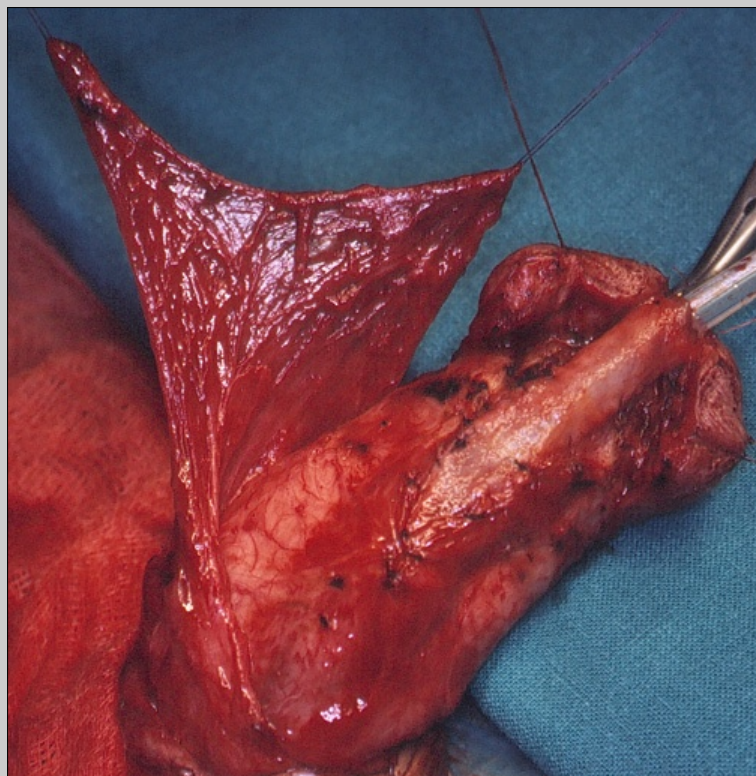
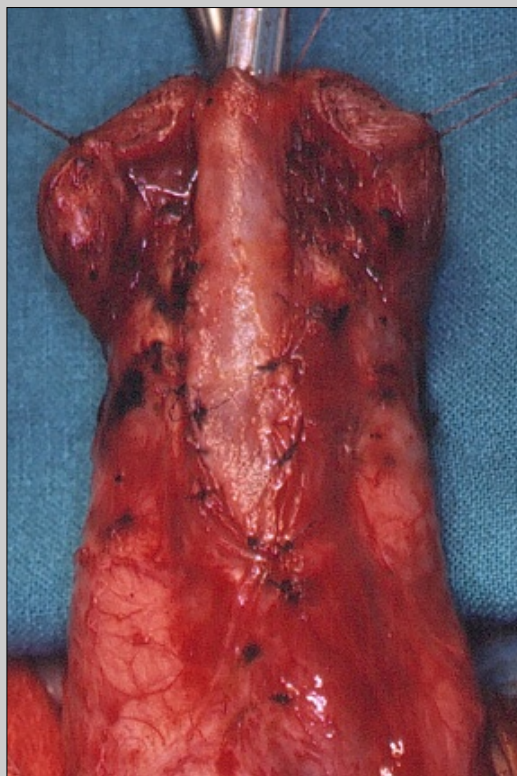
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Total number of surgical procedures in 760 patients who underwent one-stage repair

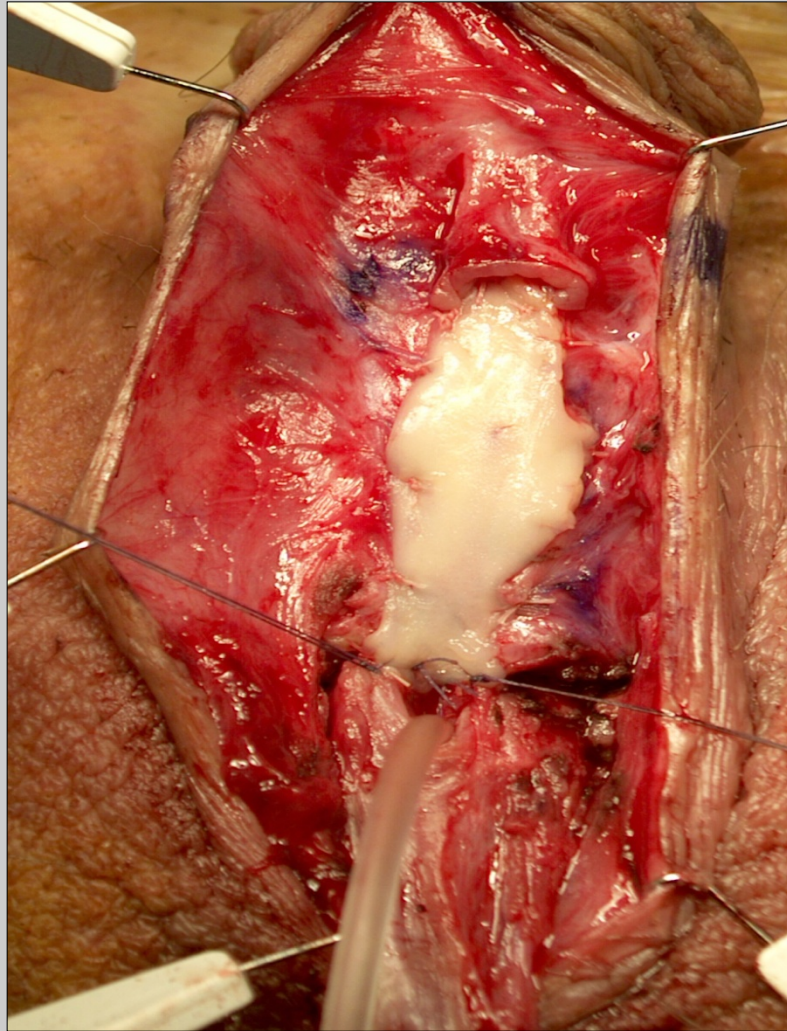
Surgical technique	N°
Meatoplasty or meatotomy	31
Fistula closure	244
End-to-end anastomosis	18
One-stage repair using skin flap	179
One-stage repair using oral mucosa graft	211
One-stage repair using skin graft	10
Corporoplasty	84
Definitive perineal urethrostomy	9
Glans reconstruction	58
Other procedures	64
TOTAL	908

Barbagli G et al. J Urol 2010, January: in press

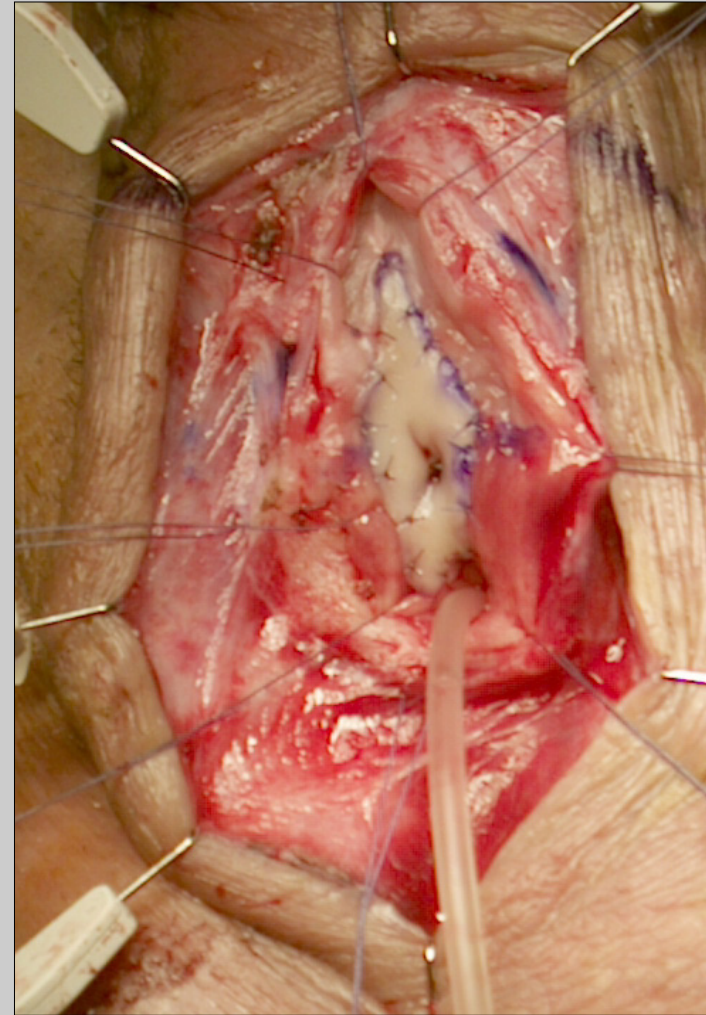
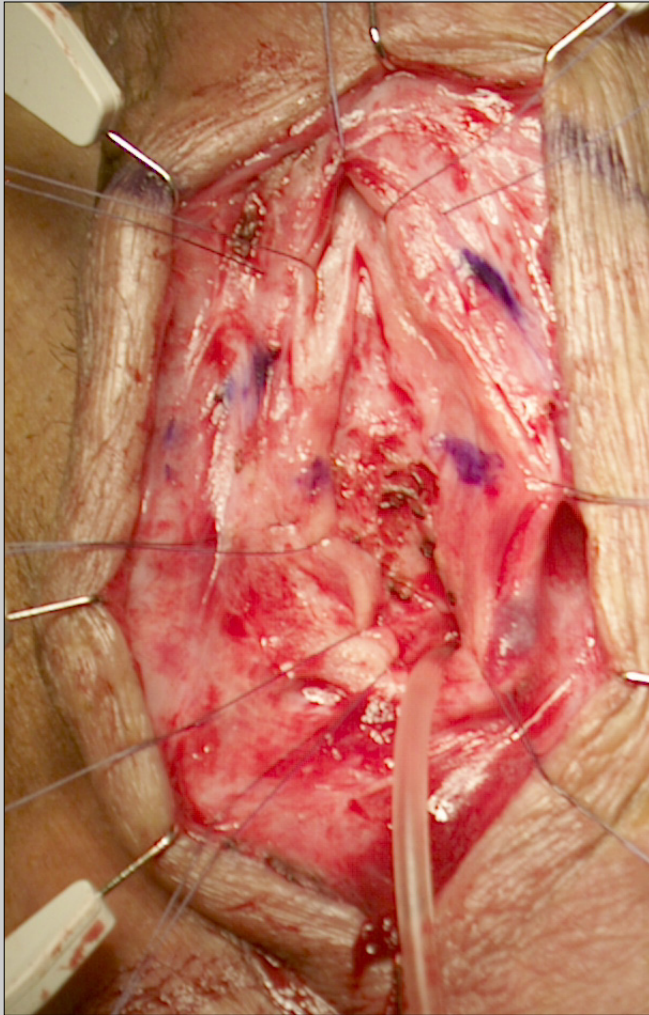
Ventral onlay graft



Dorsal onlay graft



Dorsal inlay graft

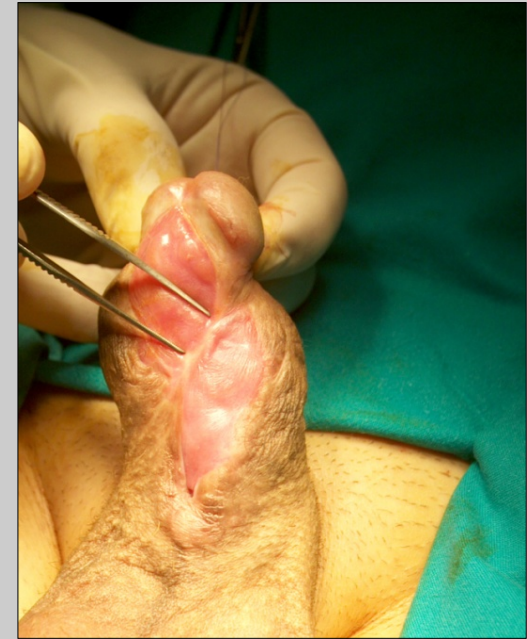


Total number of surgical procedures in 416 patients who underwent staged repair

Staged repair	N°
Staged repair using oral mucosal graft	357
Staged repair using skin graft	11
First stage Johanson procedure	18
Two-stage Johanson procedure	30
Glans reconstruction	305
Penile skin reconstruction	305
Corporoplasty	230
TOTAL	1256

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In conclusion, 1176 patients underwent a total number of 2164 surgical procedures:

908 surgical procedures on 760 patients who underwent one-stage repair

1256 surgical procedures on 416 patients who underwent staged repair

Results

evaluation

objective



subjective

Success or failure ?



Success or failure ?

- **End-point of the reconstructive surgical itinerary**
- **No meatal or urethral dilation**
- **Absence of complications or poor aesthetic outcome requiring revision**

Failed hypospadias repair in 1176 patients

Results

N° Patients		success		failure	
1176		1036	88.1%	140	11.9%

follow-up: 12-237 months (mean 60.4)

Barbagli G et al. J Urol 2010, January: in press

Failed hypospadias repair in 1176 patients

Results

surgical repair	success		failure	
	N.	%	N.	%
ONE-STAGE 760 patients	687	90.4%	73	9.6%
STAGED 416 patients	349	83.9%	67	16.1%

follow-up: 12-237 months (mean 60.4)

Barbagli G et al. J Urol 2010, January: in press



**Our experience showed two different populations in which attempts
at hypospadias surgical correction failed**

Patients showing multiple penile deformities caused by:

- Error in evaluation
- Error in design
- Error in surgical technique
- Error in postoperative care



Patients showing a satisfactory final outcome having:

- **Cosmetically acceptable meatus**
- **No evident penile deformities such as fistula or chordee**



- **Urethral stricture**

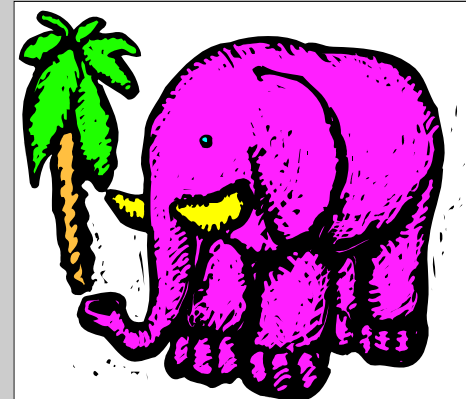


Why ?

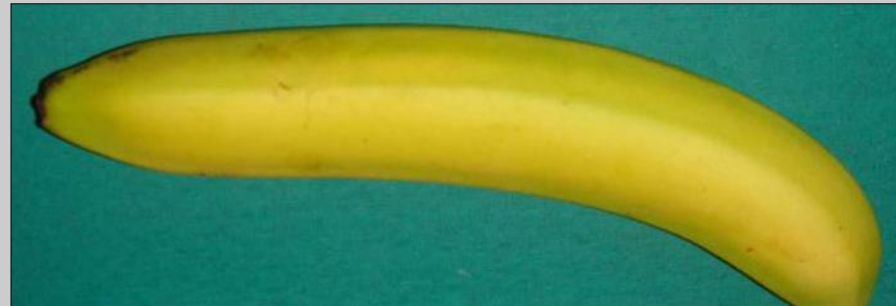
The pediatric urologist maintains that:
**“ The neo-urethra I construct in the child will
follow the growth of the penis into adulthood “**



Have you ever seen an ant become an elephant ?

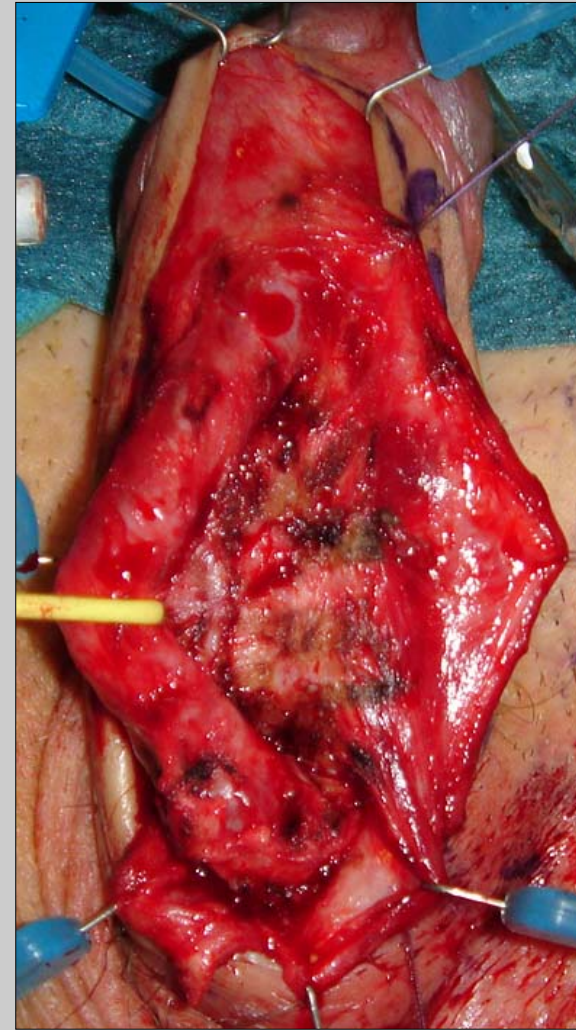
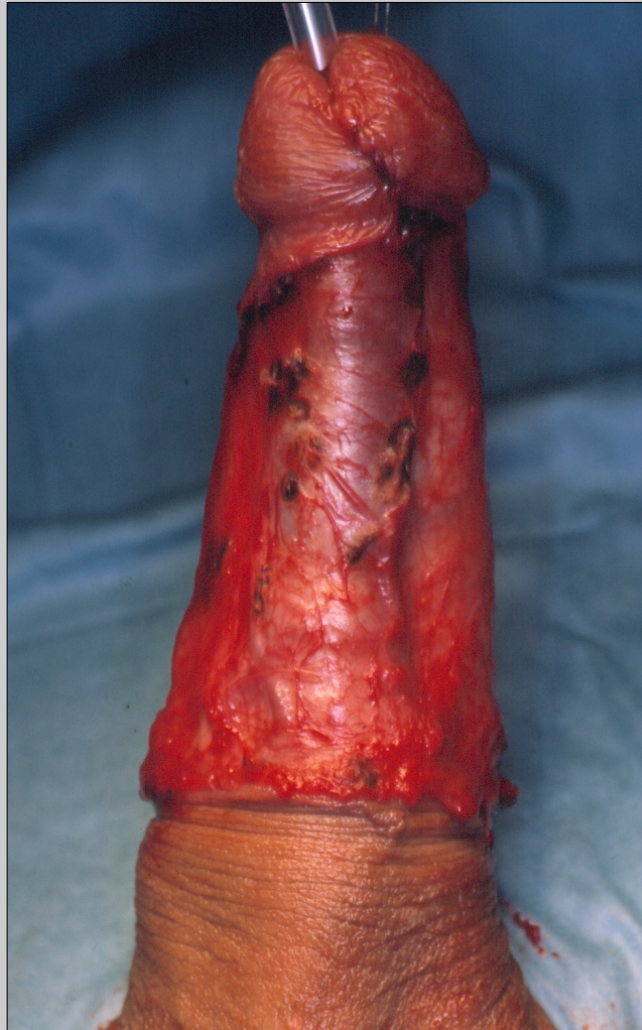


18 months old



18 years old

The normal urethra is a
spongiosum-made urethra



The urethra in the patient who underwent hypospadias reconstruction is a **skin-made urethra**



**What is the the difference between
the **spongiosum-made urethra** and
the **skin-made urethra****

?

**As far as urinary function is concerned, the reconstructed
skin-made urethra is able to work as a normal
spongiosum-made urethra**



**Pediatric surgeons and
parents are very satisfied
with the outcome.....**

....but, unfortunately, the urethra is a part of the penis...



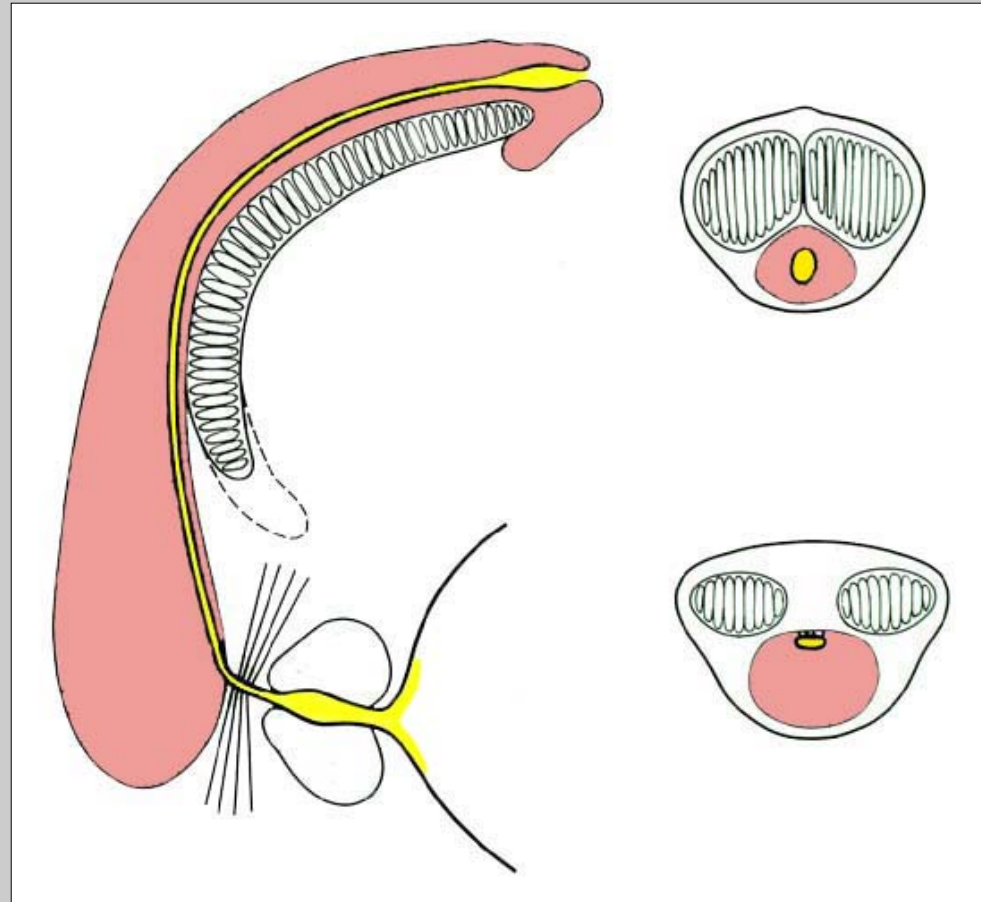
**...and when children reach full sexual maturity, problems
come ...**

...and the **skin-made urethra** over time will be
KO!



Why ?

The **skin-made urethra** is not surrounded by the soft, well vascularized **corpus spongiosum** ...



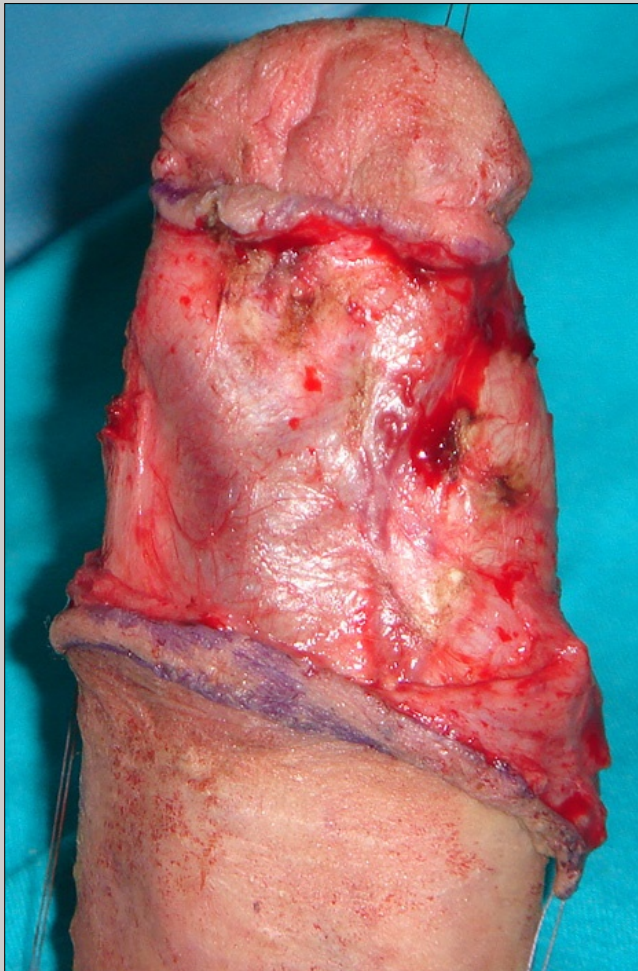
... and this **skin-made urethra** does not tolerate
the repeated mechanical stretch and trauma
during erection and sexual activity



During sexual activity, the corpus spongiosum is to the urethra what the airbag is to the body during a car accident



The lack of spongiosum tissue promotes urethral deterioration over time



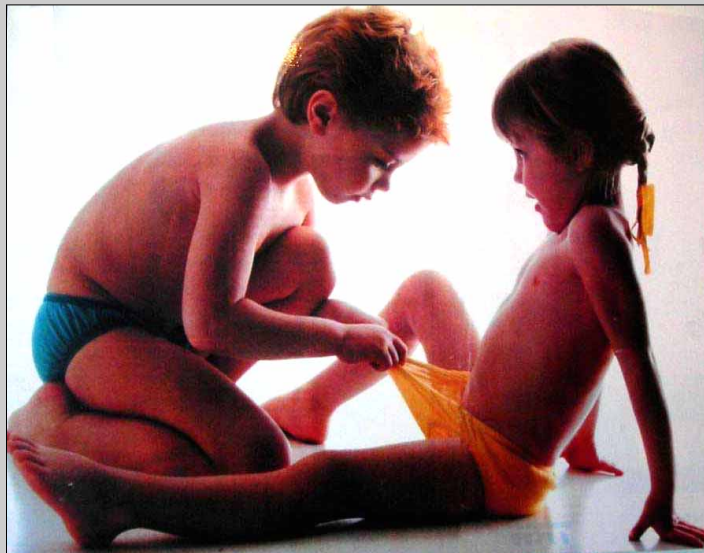
Hypospadias surgery is now at its end-point



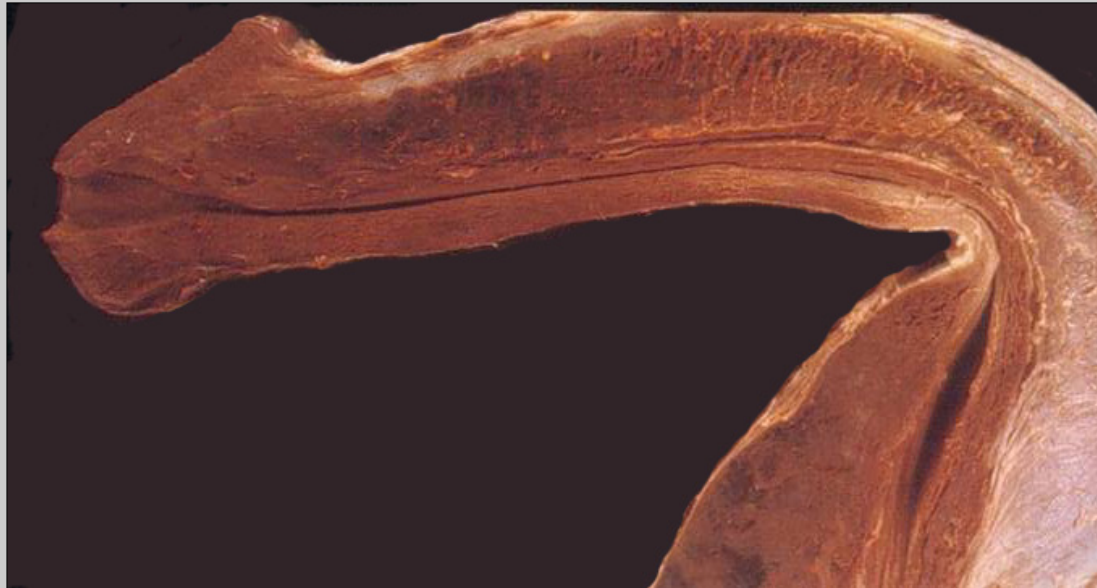
**Pediatric urologist's triumph over the results of hypospadias repair
in childhood is not justified**

Success in hypospadias surgery is not measured in one or even in five years

In order to collect more detailed epidemiological data, **pediatric surgeons are invited to publish the long-term results (> 20 years) of hypospadias surgery performed in their hospitals**



Surgeons involved in hypospadias surgery are warmly invited to develop new studies in tissue engineering and transplant research



Hypospadias surgery will have improved only when corpus spongiosum is made available, and a new **spongiosum-made urethra can be transplanted in the patient**

Failed hypospadias repair is one of the most difficult problems to face and requires full collaboration between surgeons involved in this issue



Arezzo – Italy

Belgrade – Serbia

European Center for Failed Hypospadias Repair

www.failedhypospadias.com



Dear Colleagues,
The European Center for Failed Hypospadias Repair is pleased to invite you to the

1ST INTERNATIONAL CONFERENCE ON FAILED HYPOSPADIAS REPAIR

which will be held on
SEPTEMBER, 18th 2010 in **AREZZO, ITALY.**

We look forward to welcoming you.



Failed Hypospadias Repair

www.failedhypospadias.com

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Next month, this lecture will be fully available on our website

Thank you !