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International Congress on Hypospadias Surgery

September 2-5, 2007

Prishtina – Kosova

International Congress on Hypospadias Surgery

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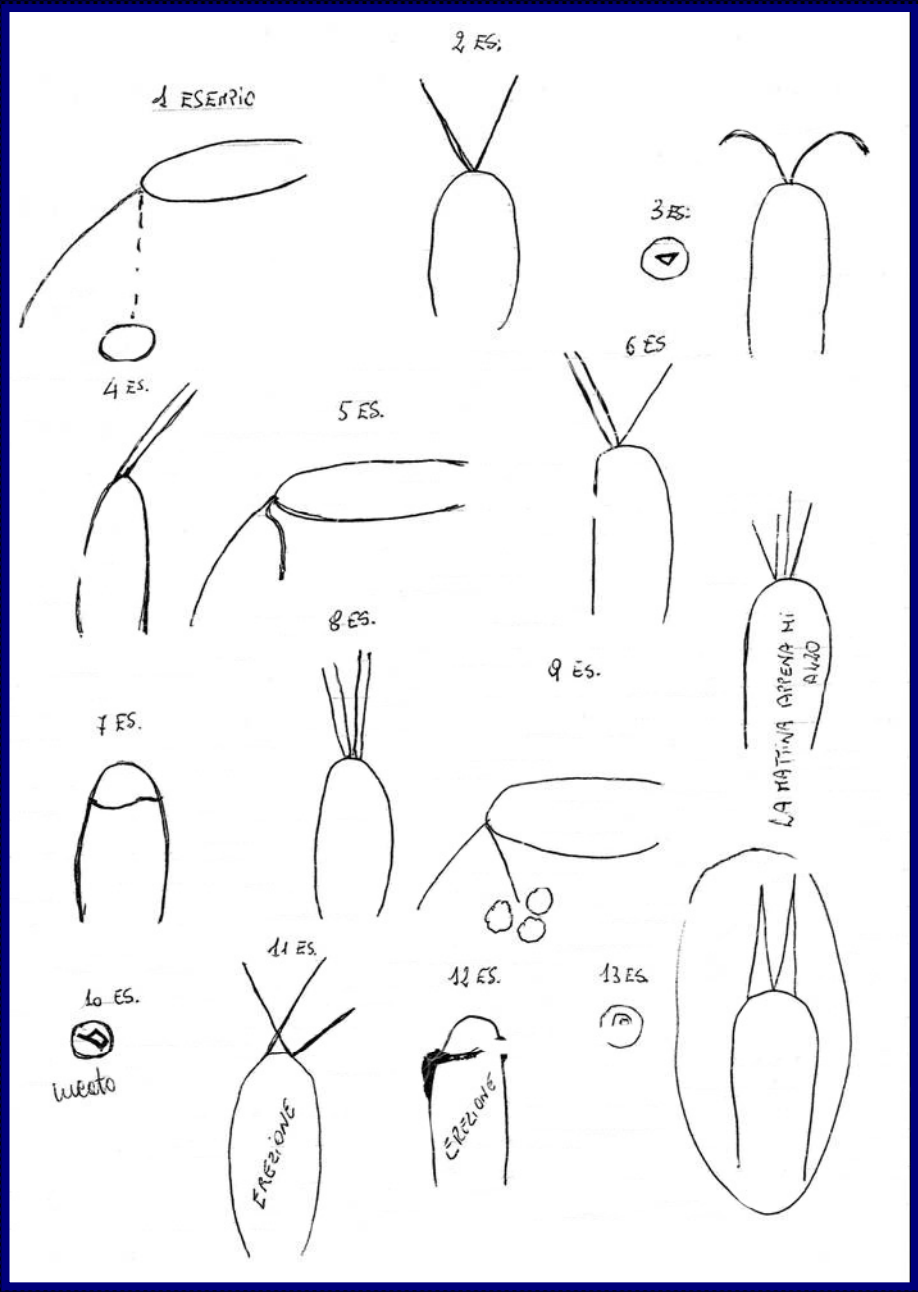
PRISHTINA - KOSOVA

Failed hypospadias repair presenting in adults



A rough drawing reported me by a 25 years-old man, who underwent 12 operations for hypospadias repair


CENTER FOR URETHRAL RECONSTRUCTIVE SURGERY

Patients with urethral stricture diseases: 1510

- Penile urethra: 437
- Bulbar urethra: 861
- Posterior urethra: 212

→ Failed hypospadias repair: 184 (12%)

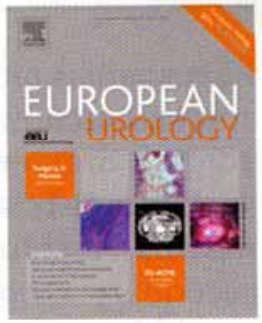
Patients with penile urethral stricture diseases: 437

- **Primary hypospadias repair: 43**
- **Lichen sclerosus: 107**
- **Other urethral diseases: 103**

Failed hypospadias repair: 184 (42%)

EUROPEAN UROLOGY 49 (2006) 887–895

available at www.sciencedirect.com
journal homepage: www.europeanurology.com



European Association of Urology

Reconstructive Urology

Failed Hypospadias Repair Presenting in Adults

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European Urology 2006; 49: 887-895

The King

Editorial

Failed Hypospadias Repair Presenting in Adults

Anthony R. Mundy *

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European Urology 2006; 49: 774-776

The Prince

Editorial Comment

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European Urology 2006; 49: 895

The Earl

Editorial

Hypospadias Repair Failures: Lessons Learned

Gianantonio Manzoni *

Sezione Urologia Pediatrica Ospedale di Circolo e Fondazione Macchi, Italy

European Urology 2006; 49: 772-773

Failed hypospadias repair in adult patients

Patients selected for this study: 60/135

Period 1995 - 2004

- **age: 19-37 years (mean 32.2)**
- **follow-up: 12-138 months (mean 33.8)**

Success or failure ?

- Reconstructive surgical itinerary at the end-point
- No meatal or urethral dilation
- Absence of complications or poor aesthetic outcome requiring revision

Previous attempts to repair primary hypospadias

N° repairs	N° patients	%
1	8	13.4%
2	8	13.4%
3	16	**26.6%**
4	6	10%
5	14	**23.4%**
6	2	3.3%
7	2	3.3%
8	1	1.6%
>	3	5%

(mean: 3.9)

Complications following failed hypospadias repair

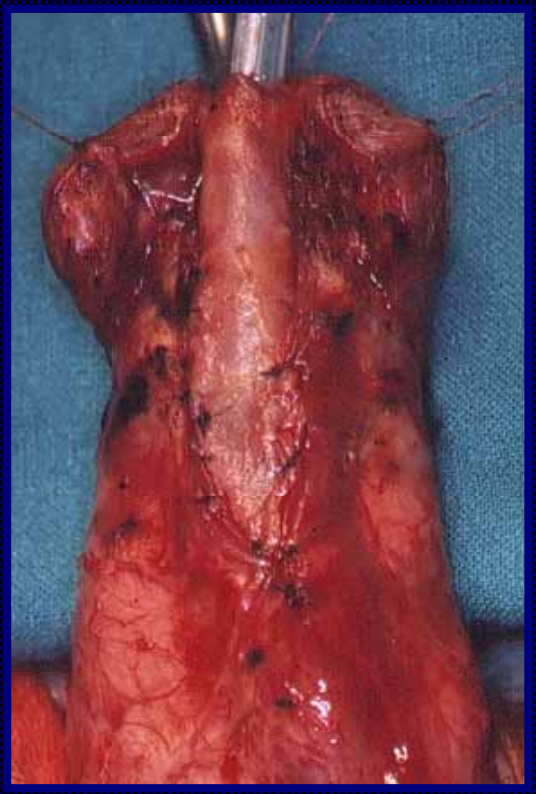
Complication	N°	%
urethral stricture	34	56.6%
residual hypospadias	26	43.3%
fistula	18	30%
meatal stenosis	11	18.3%
penile curvature	9	15%
hair	4	6.6%
diverticula	2	3.3%
stone	1	1.6%

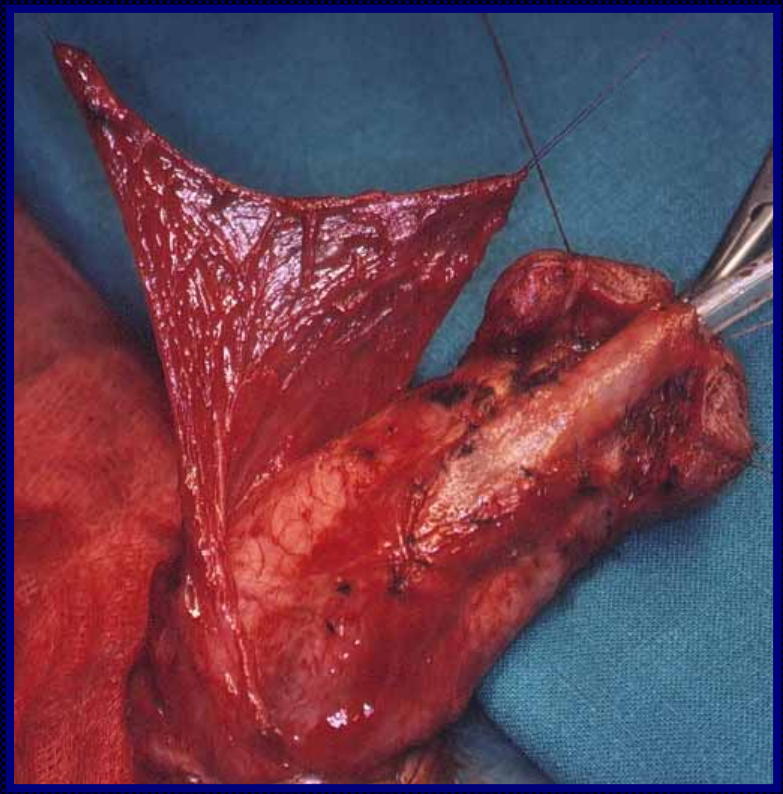
Complications following failed hypospadias repair

N° complications	N° patients	%
1	22	36.6%
2	26	**43.4%**
3	8	13.4%
4	4	6.6%

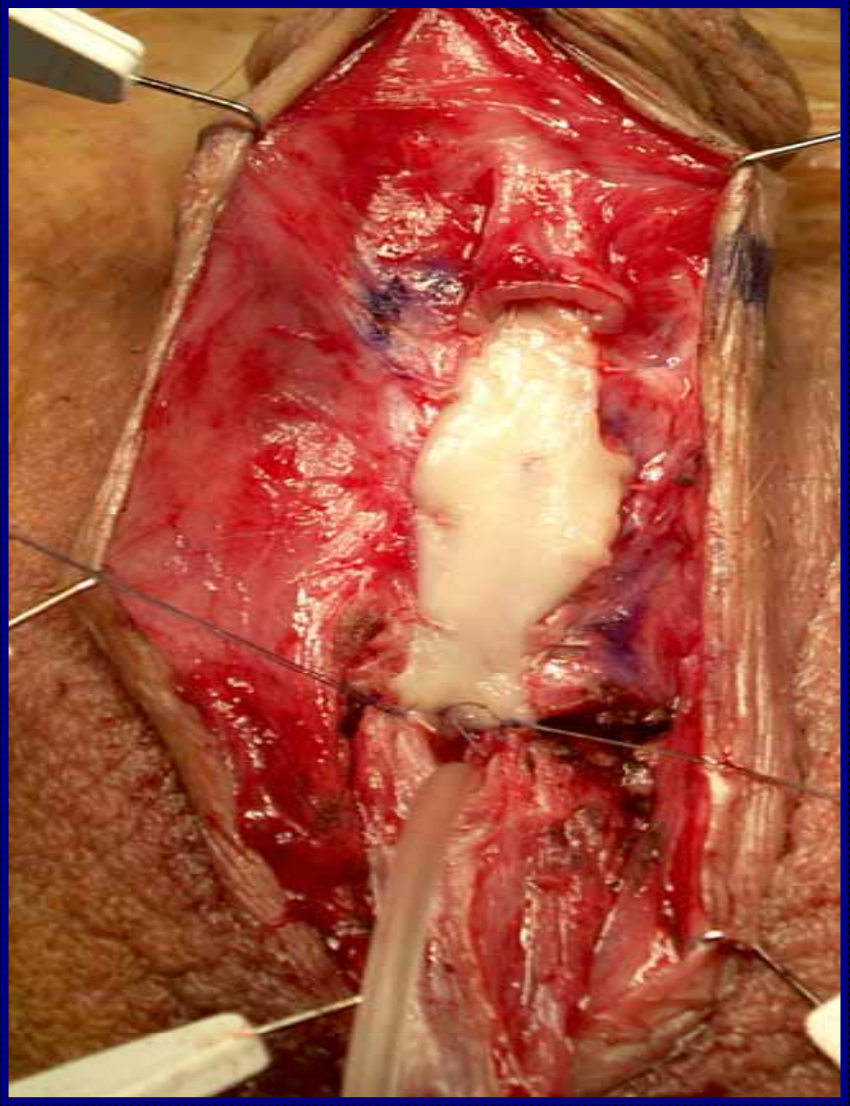
Surgical techniques	N°
Meatoplasty	1
Fistula closure	6
End-to-end anastomosis	1
One-stage repair using penile skin	10
One-stage repair using buccal mucosa	11
Two-stage repair using penile skin	14
Two-stage repair using buccal mucosa	17
TOTAL	60

One-stage repair using buccal mucosal graft

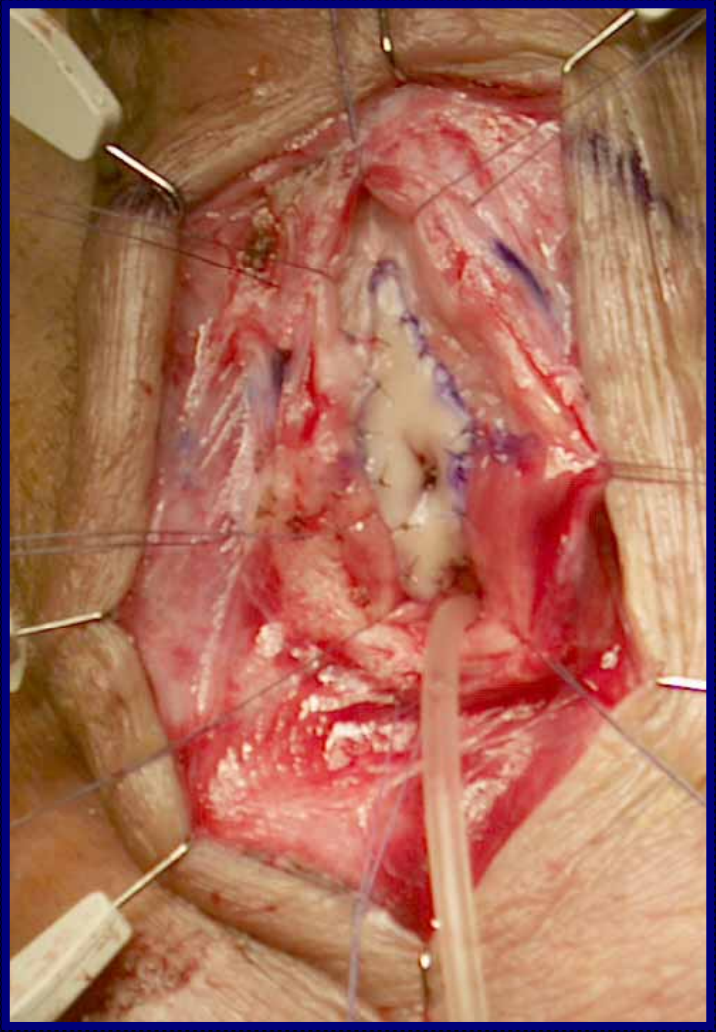




VENTRAL ONLAY



DORSAL ONLAY



DORSAL INLAY

Results of one-stage repair

Surgical techniques	N°	Success		Failure	
Meatoplasty	1	/		1	100%
Fistula closure	6	6	100%	/	
End-to-end anastomosis	1	1	100%	/	
One-stage techniques with penile skin	10	8	80%	2	20%
One-stage techniques with buccal mucosa	11	9	81.8	2	18.2
TOTAL	29	24	82.7	5	17.3

Two-stage repair using buccal mucosal graft

Number of surgical steps before the final outcome

Number steps	Number patients
2	19
3	7
4	2
5	1
6	1
7	1

Two-stage repair: 19 patients (61%)

Multi-stage repair: 12 patients (39%)

Results of two-stage repair

Surgical techniques	N°	Success		Failure	
Two-stage techniques with penile skin	14	7	50%	7	50%
Two-stage techniques with buccal mucosa	17	14	82.3%	3	17.6%
TOTAL	31	21	67.7%	10	32.3%

Results of the surgical repair

ONE-STAGE 29 patients		TWO-STAGE 31 patients	
success	failure	success	failure
24	5	21	10
82.7%	17.3%	67.7%	32.3%

Failed hypospadias repair in adult patients

Results

N° Patients	Success		Failure	
60	45	75%	15	25%

Our experience showed two different populations in whom attempts of hypospadias surgical correction have failed

Patients showing multiple penile deformities caused by:

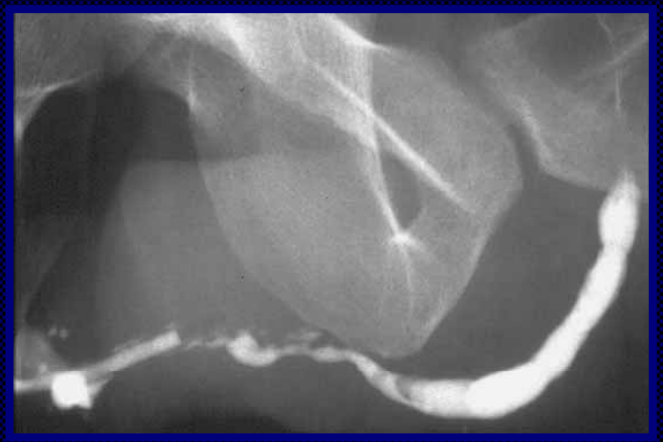
- Error in evaluation
- Error in design
- Error in surgical technique
- Error in postoperative care

Patients showing a satisfactory final outcome having:

- Cosmetically acceptable meatus

- No evident penile deformities such as fistula or chordee

- Urethral stricture



Why ?

The neo-urethra may fail to adequately follow the "incredible" grow of the penis when the genital maturation is complete

18 months old **18 years old**

The normal urethra is

“spongiosum-made urethra”

The urethra in patient who underwent hypospadias reconstruction is

“skin-made urethra”

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

?

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

Pediatric surgeon and parents are very satisfied for this outcome…….

….but, unfortunately, the urethra is a piece of penis…

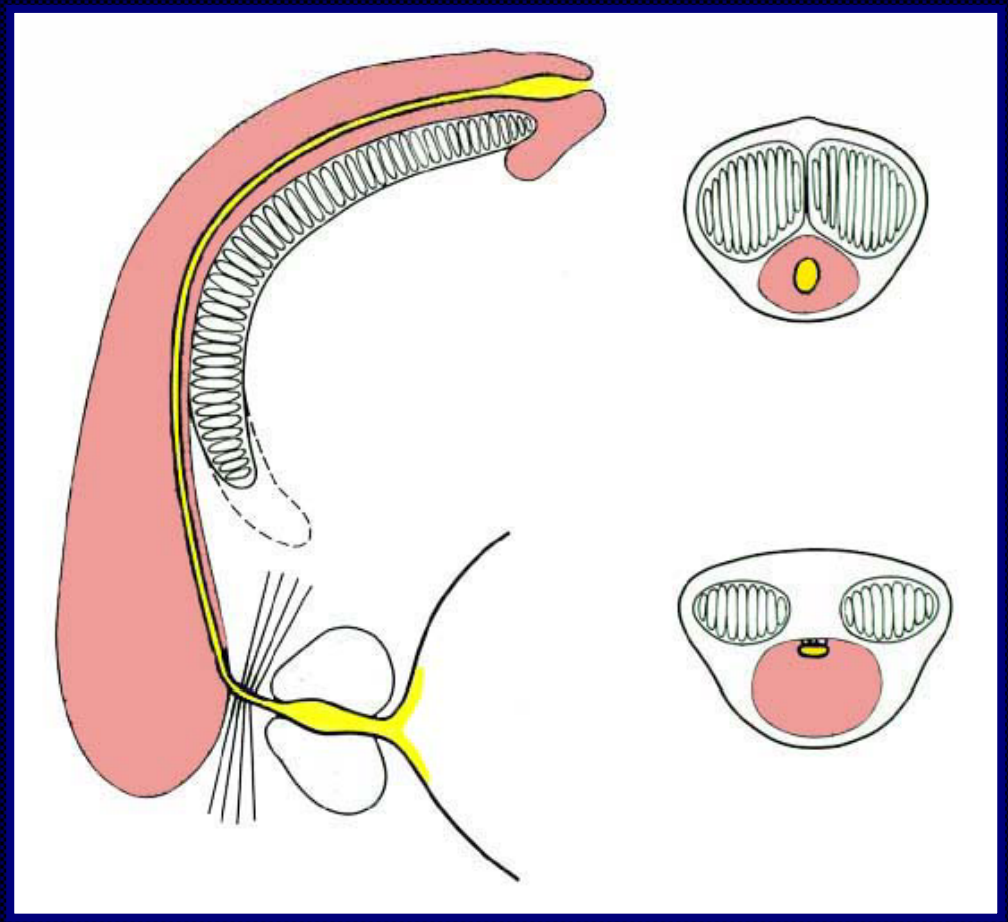
…and when children reached full sexual maturity, problems are going to come …

…and the "skin-made urethra" over time will be KO!

Why ?

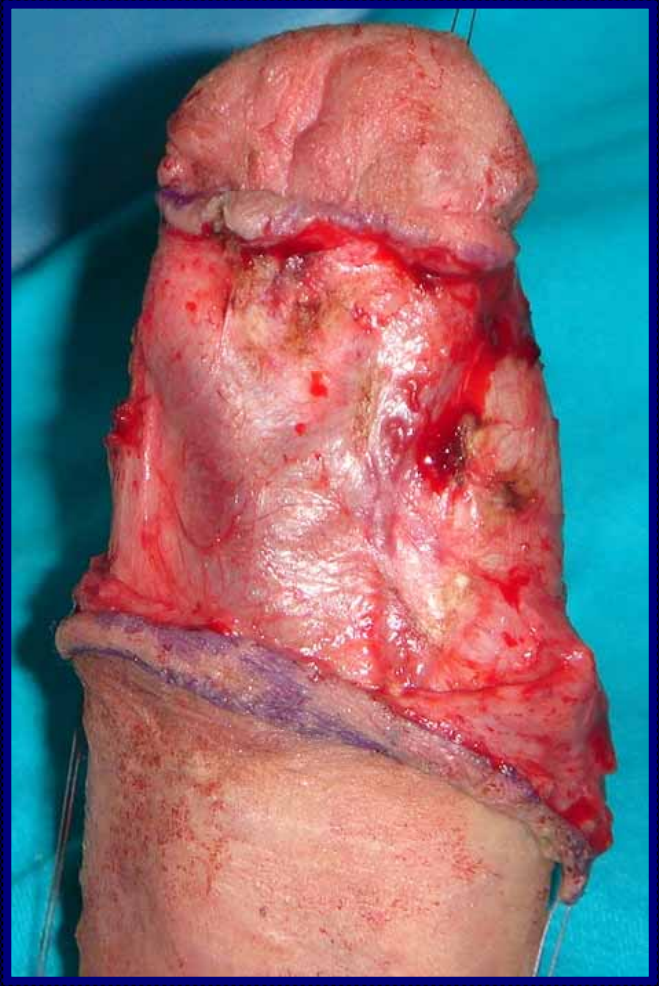
The "skin-made urethra" does not tolerate the repeated mechanical stretch and trauma during erection and sexual activity

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



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

The lack of spongiosum tissue promotes the urethral deterioration over time



Conclusion

Success in hypospadias surgery is not measured in one or even in five years. Pediatric and adult urologists need to maintain active followup on these patients until they have reached full sexual maturity and activity

Conclusion

We are constantly reminded by

late failures that there is not

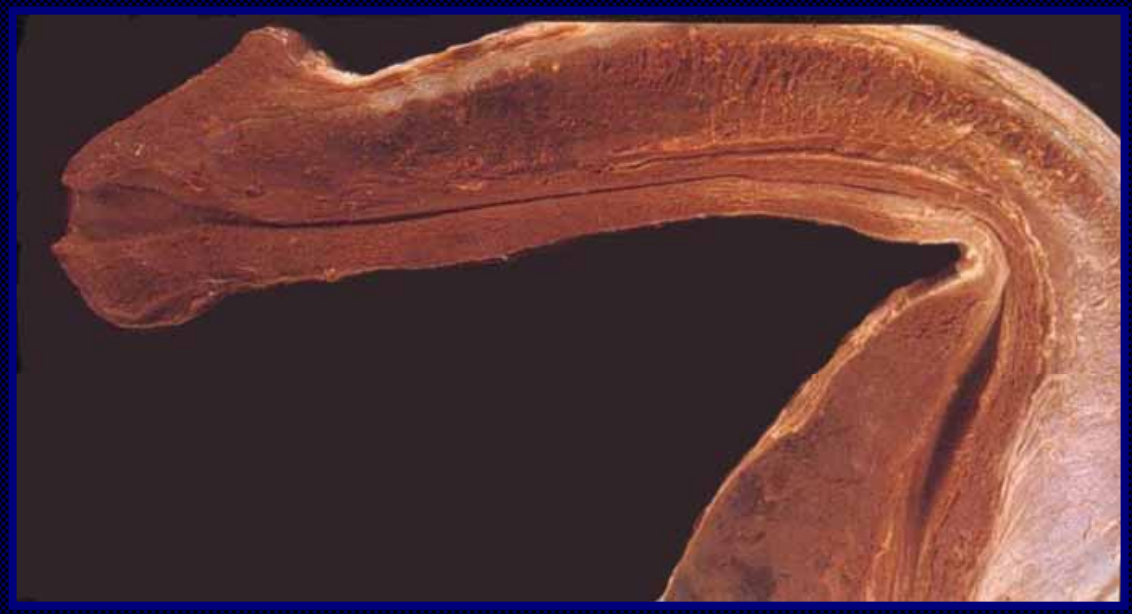
true sustitute for normal urethra

Conclusion

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

Conclusion

The hypospadias surgery will be improved only when the urethral corpus spongiosum will be available, and a new "spongiosum-made urethra" will be transplanted to the patient



Conclusion

Of course, my hypothesis is not founded on the "based evidence medicine", but it represents a "personal opinion" of single surgeon working in a specialized referral Center for urethral diseases

www.urethralcenter.it

This lecture will be fully available in our website the next month

Thank you !

What can you find in www.urethralcenter.it?

- Up-to-date Information on urethral pathology and surgery
- Everything you need to know about urethral stricture diseases
- How to make a diagnosis
- All the surgical techniques performed at our Center
- An up-to-date database of surgical outcome
- Information and opportunities for "hands-on" training
- Up-to-date literature
- The articles published by Guido Barbagli
- The books published by Guido Barbagli
- The lectures presented by Guido Barbagli at Meetings and Congress
- The history of urethral surgery
- An Atlas of Surgical Techniques
- Video
- Comments and suggestion for the urologists of XXI century
- ... and more!

The website is up-to-date monthly