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III Simposio Internacional de Cirurgia Urológica Reconstructora

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Rio de Janeiro - Brazil



Center for Reconstructive Urethral Surgery



BXO - Lichen sclerosus



Lichen sclerosis

Terminology

Epidemiology

Pathogenesis

Treatment



Lichen sclerosis

Terminology



- **Balanitis Xerotica Obliterans**
- **Lichen sclerosus**
- **Lichen sclerosus et atrophicus**
- **Kraurosis vulvae**



**Balanitis xerotica obliterans (post operationem) und ihre
Beziehungen zur „Kraurosis glandis et praeputii penis“.**

Von
A. Stühmer.

Mit 4 Textabbildungen.

(Eingegangen am 14. Mai 1928.)





Journal of the
American Academy of

DERMATOLOGY

VOLUME 32 NUMBER 3 MARCH 1995

CONTINUING MEDICAL EDUCATION

Lichen sclerosis

LTC Jeffrey J. Meffert, MC, USAF, COL Brian M. Davis, MC, USAF, and
COL Ronald E. Grimwood, MC, USAF *Lackland AFB, Texas*

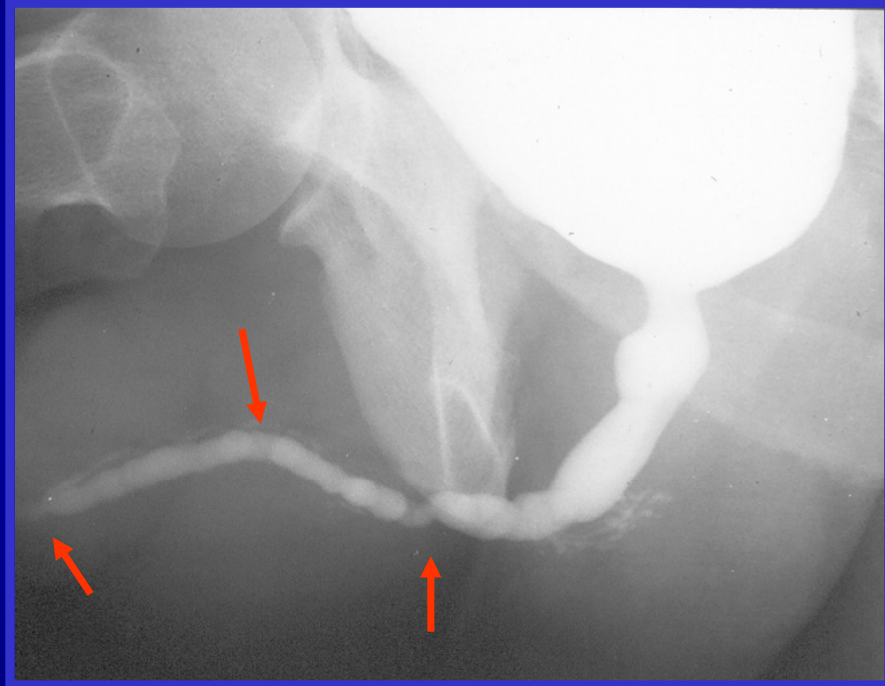
In 1995, the **American Academy of Dermatology** recommended that the terme **lichen sclerosis** be used in future reports to define the true incidence and the malignant potential of **lichen sclerosis**



Lichen sclerosus is a complex immunological disorder of the genitalia involving:



glans, meatus, coronal sulcus and penile skin



navicularis, penile and bulbar urethra



Lichen sclerosis is a chronic, evolving disease



→
2 years after



↓
5 years after



Lichen sclerosis

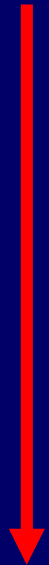
Sexual activity

Urinary function

Aesthetic appearance of the genitalia

Association with penile cancer

Poor quality of life



Lichen Sclerosus in 68 Patients With Squamous Cell Carcinoma of the Penis

Frequent Atypias and Correlation With Special Carcinoma Variants Suggests a Precancerous Role

Elsa F. Velazquez, MD, and Antonio L. Cubilla, MD

Lichen sclerosus is a **pre-cancerous condition** for at least some types of penile cancers, especially those not related to HPV

Am J Surg Pathol, 2003



Penile Carcinoma in Patients With Genital Lichen Sclerosus: A Multicenter Survey

G. Barbagli, E. Palminteri, F. Mirri, G. Guazzoni, D. Turini and M. Lazzeri*

From the Center for Urethral and Genitalia Reconstructive Surgery (GB, EP), Arezzo, Sezione di Anatomia Patologica, Ospedale S. Maria alla Gruccia (FM), Montevarchi, San Raffaele-Vita Salute Hospital and University (GG), Milano and Department of Urology, Santa Chiara Firenze (DT, ML), Florence, Italy

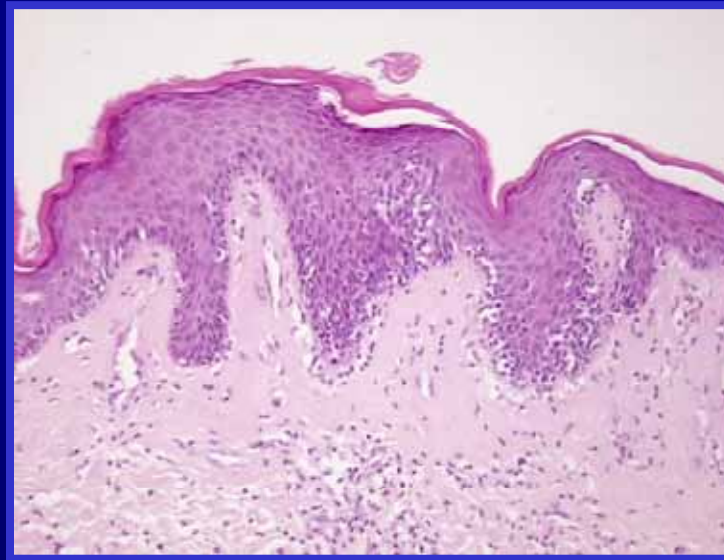
**The incidence of neoplastic changes in patients with
lichen sclerosus ranges from 2.3% to 8.4%**

J Urol, 2006



Histopathological findings for diagnosis of lichen sclerosis

- Hyperkeratosis and vacuolar degeneration of the basal layer
- Edema and homogenisation of collagen in the upper dermis
- Band-like inflammatory infiltrate



- Slight
- Moderate
- Severe



The name “**Balanitis Xerotica Obliterans**” given this disease by Stühmer in 1928 is no longer adequate to describe this very serious immunological disorder



Lichen sclerosus and urethral stricture

Epidemiology



Lichen sclerosis and urethral stricture

authors	journal, year	patients
Venn et al.	Br J Urol, 1998	28
Barbagli et al.	Lancet, 1999	31
Depasquale et al.	Br J Urol, 2000	128
Andrich et al.	J Urol, 2001	33
Barbagli et al.	Urol Int, 2004	102

Lichen sclerosis and urethral stricture

- **Lichen sclerosis** is increasing in all Centres specialized in treatment of urethral and genitalia diseases

A.U.A. Annual Meeting 2001, Anaheim - USA

- Involvement of the urethra in genital **lichen sclerosis** appears to be much more common than previously reported

- Prior to diagnosis, many patients had symptoms for years, thus encouraging the disease's progression over time

- In our experience, when the urethra is involved in the disease, 41% of patients showed panurethral stricture

Barbagli et al., Urol Int, 2004

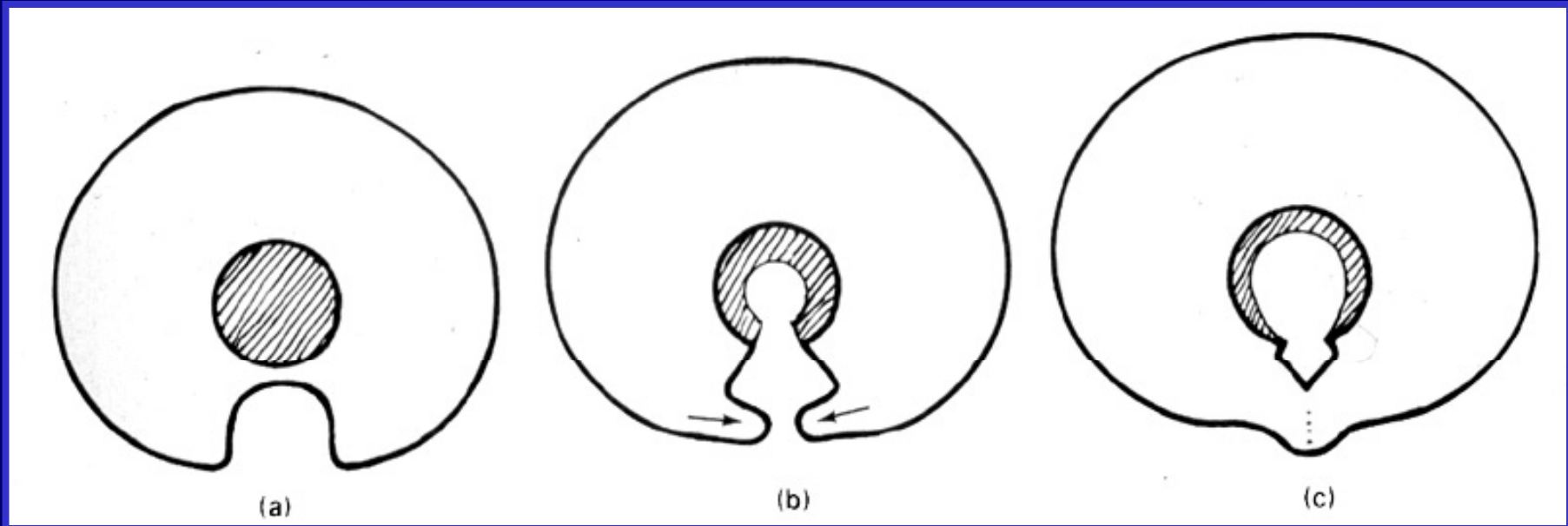


Lichen sclerosus and urethral stricture

Pathogenesis



The embryology of the glans may explain the involvement of the external urinary meatus and navicularis tract in **lichen sclerosus**



The developing glanural urethra involves the preputial folds that fuse to genital folds



Lichen sclerosis and urethral stricture

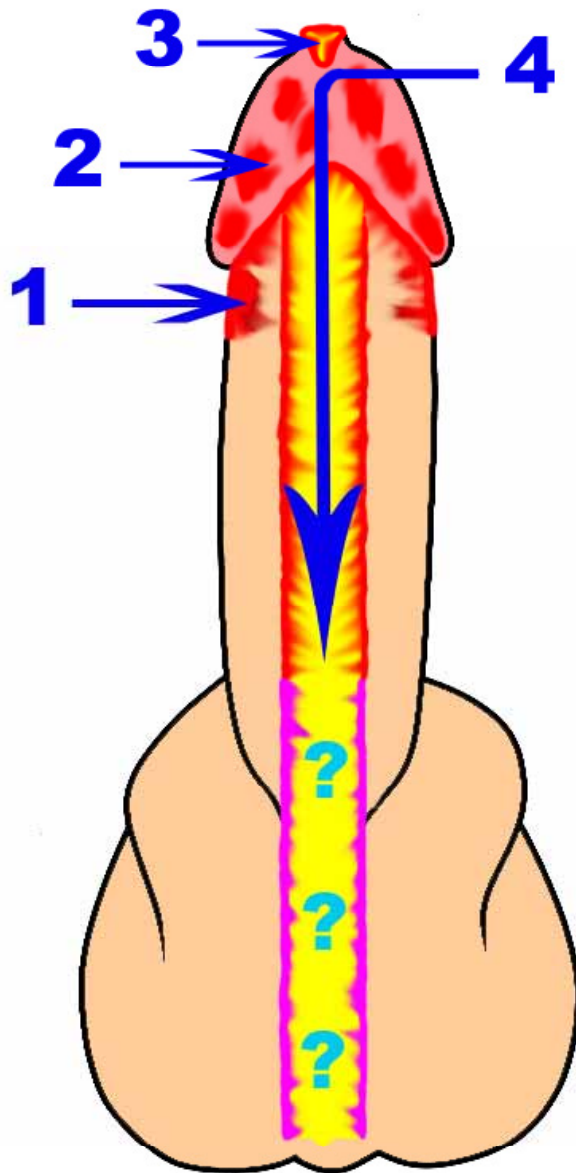
- **Venn and Mundy** suggested that panurethral stricture in patients with **lichen sclerosis** may be caused by the trauma of repeated dilation or instrumentation

Br J Urol, 1998

- **Barbagli et al.** showed that **lichen sclerosis** caused urinary retention or difficulties in 60% of patients who had not undergone previous urethral dilation, instrumentation or surgery

Urol Int, 2004





1 foreskin

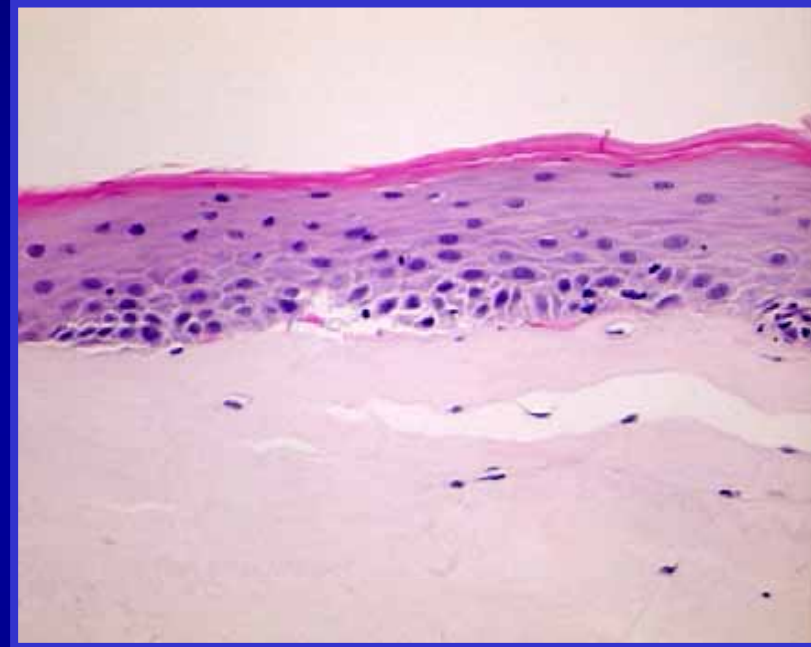
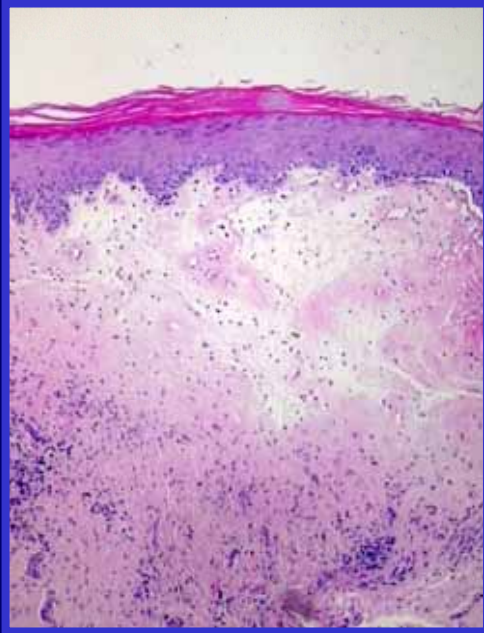
2 glans

3 meatus

4 penile urethra

? bulbar urethra

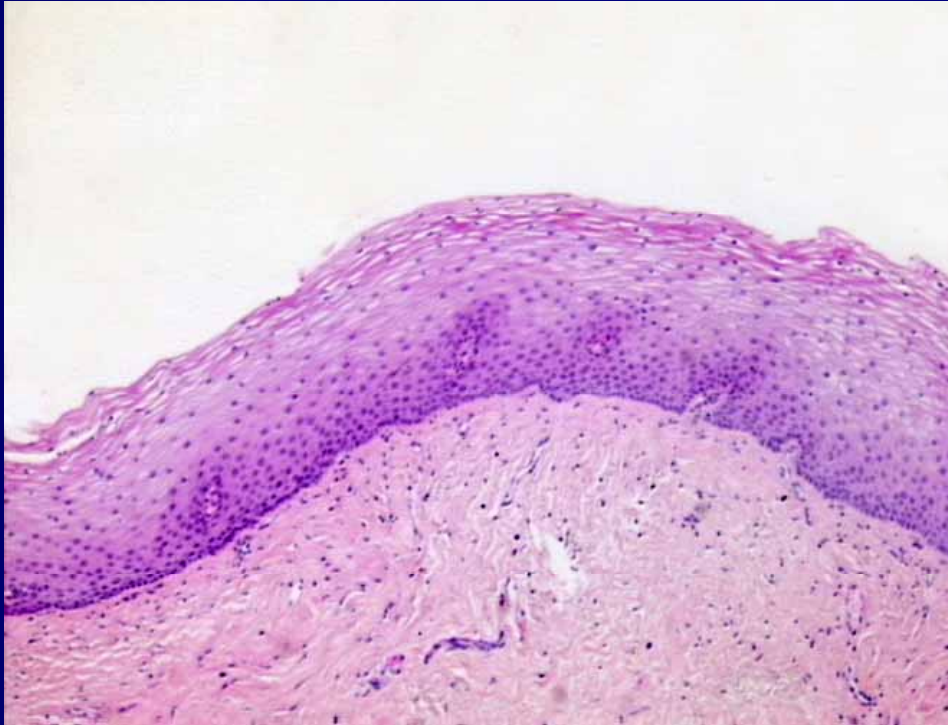
Lichen sclerosus and urethral stricture



The penile urethra shows the typical histological features
of **lichen sclerosus** disease



Lichen sclerosus and urethral stricture

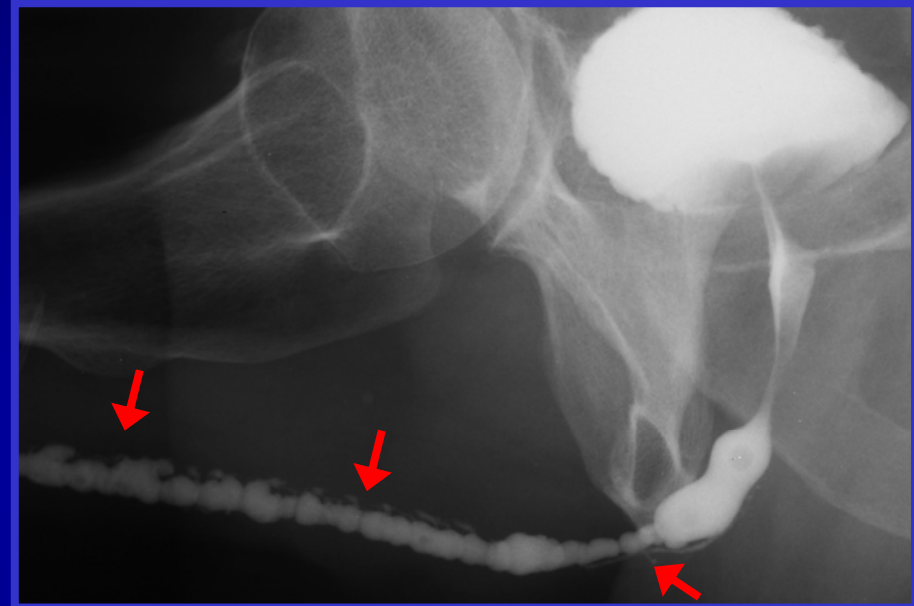
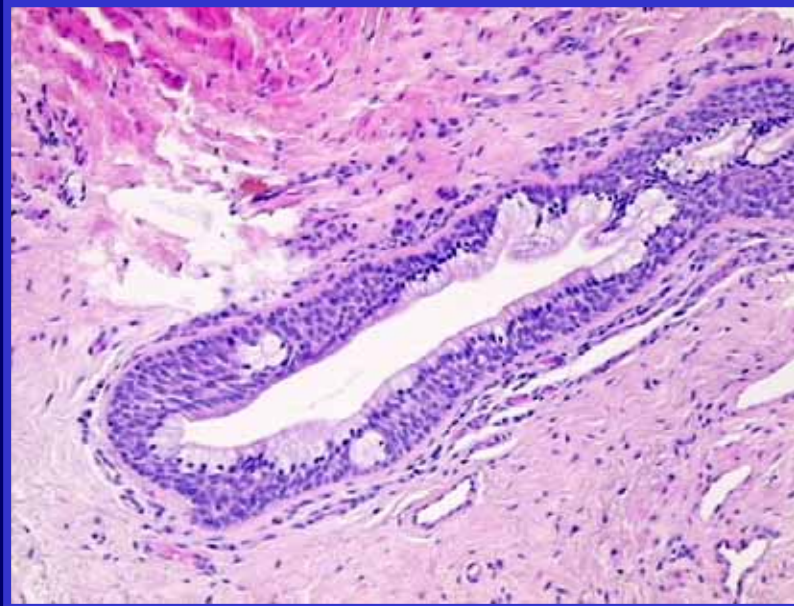


**Squamous
metaplasia**

The bulbar urethra shows no histological features of
lichen sclerosus disease



Lichen sclerosus and urethral stricture



Squamous metaplasia involves the ductus of the periurethral glands, which becomes rigid and wide open. Thus the retrograde urethrography is able to depict the periurethral glands



Questions to resolve

- Is squamous metaplasia in the bulbar urethra caused by distal obstruction or is it related to histological changes caused by **lichen sclerosus**?
- What is the role of squamous metaplasia in causing urethral obstruction over time?
- Is squamous metaplasia in the bulbar urethra a typical lesion in patients with **lichen sclerosus** or is it a typical lesion in any patient with bulbar urethral stricture?



My pathologist and I are currently working on resolving these questions, involving a large series of patients in our study



Doctor Francesco Mirri



Lichen sclerosus and urethral stricture

Treatment



Evaluation of the surgical outcome

- Patients with urethral stricture disease due to **lichen sclerosis** are treated with so many various surgical approaches that it is really impossible to evaluate and standardize the long-term outcome of all these techniques
- The literature dealing with this argument is still terribly confused and does not furnish a reliable interpretation of the available data

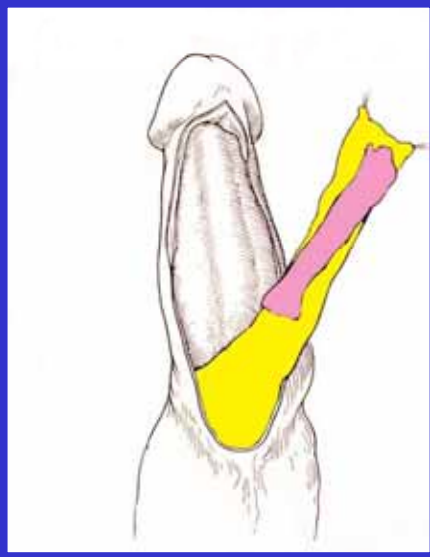


One-stage repair

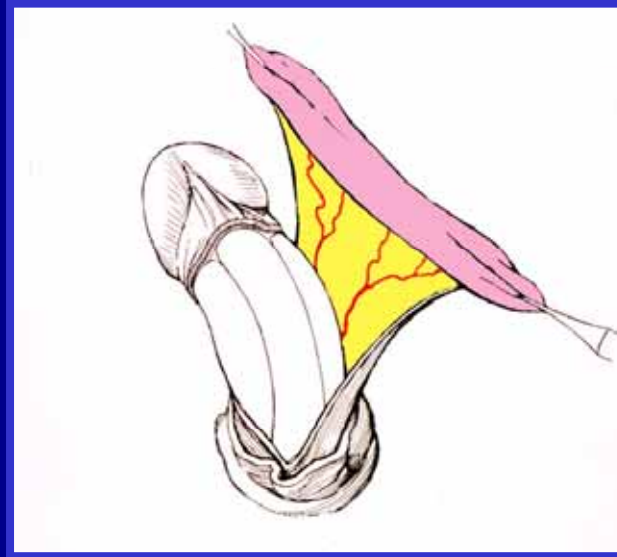
- Penile dartos fascial flap with skin island techniques
- Dorsal inlay buccal mucosal graft urethroplasty
- S. Kulkarni urethroplasty



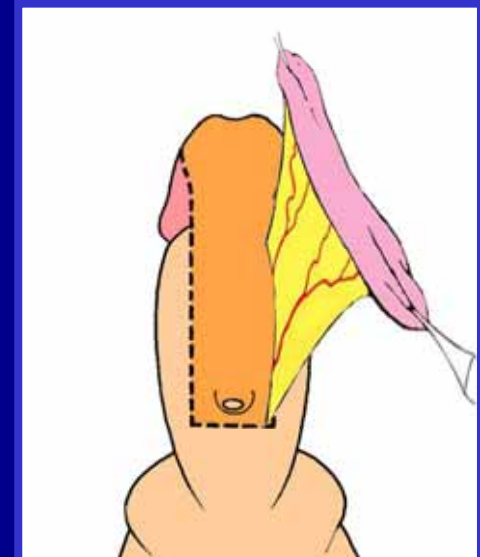
Penile dartos fascial flap with skin island techniques



Jordan



McAninch



Graft + flap



Penile skin flaps: results

authors	patients	follow-up	success	failure
Venn et al. 2000	12	36	0%	100%
De Pasquale et al. 2000	42		10%	90%
Alsikafi et al. 2004	20	89	55%	45%
Virasoro et al. 2006	12	48		6%
Garcia et al. 2006	22	19	70%	30%

Graft + flap: results

authors	patients	follow-up	success	failure
Brady et al. 1999	10	27	87%	13%
Berglund et al. 2004	18		95%	5%

Caution must be exercised in recommending fasciocutaneous penile skin flaps for long-term treatment of **lichen sclerosis** strictures

Alsikafi et al., J Urol, 2004

Better understanding of the physiopathology of **lichen sclerosis** has changed our way of treating fossa navicularis strictures

Virasoro et al., J Urol, 2006

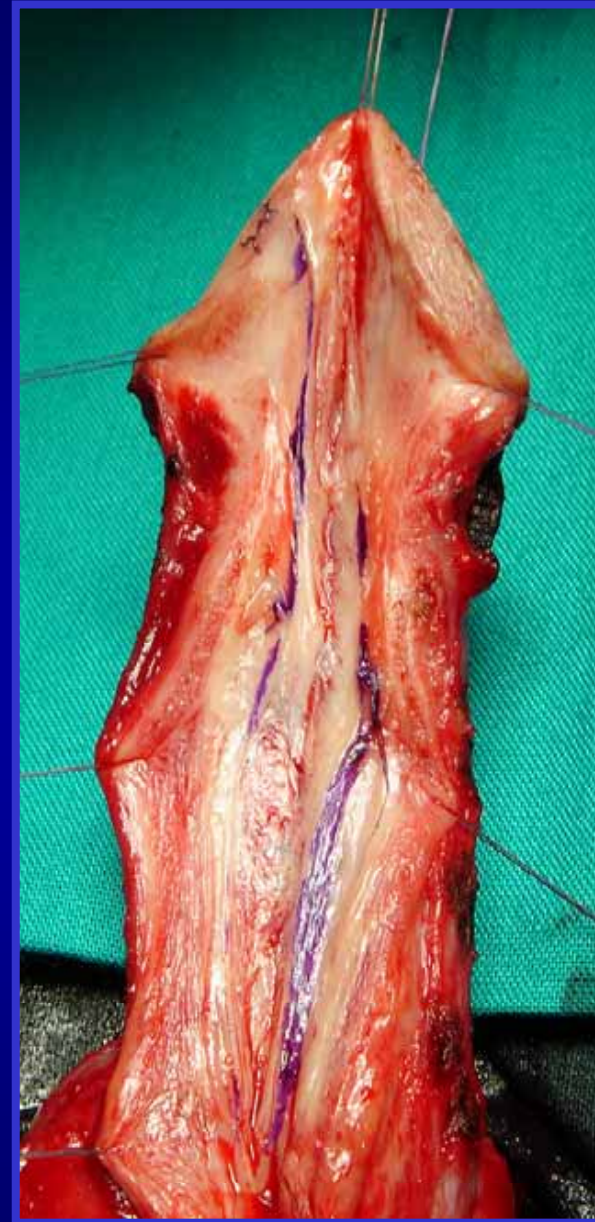
There is a relatively low success rate even when the skin used for the flap appears to be free of **lichen sclerosis**

Garcia et al., J Urol, 2006



Dorsal inlay buccal mucosal graft urethroplasty









Results

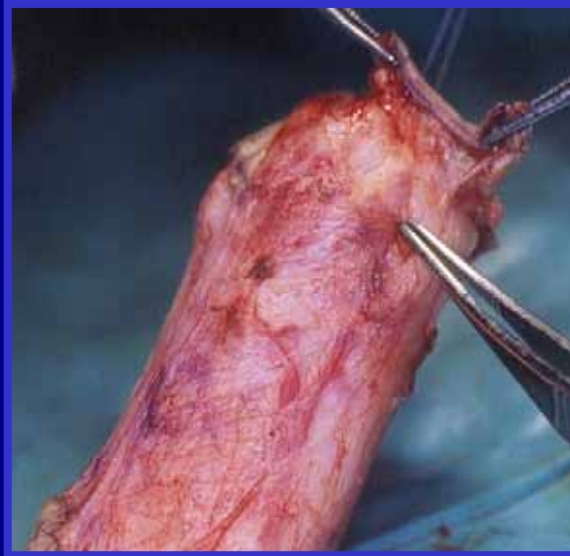
- Small number of patients
- Satisfactory short-term results
- Long-term follow-up not available
- Meatal stenosis is a frequent complication



Barbagli 2006, unpublished data



The glans is always deeply involved in the disease



S. Kulkarni urethroplasty



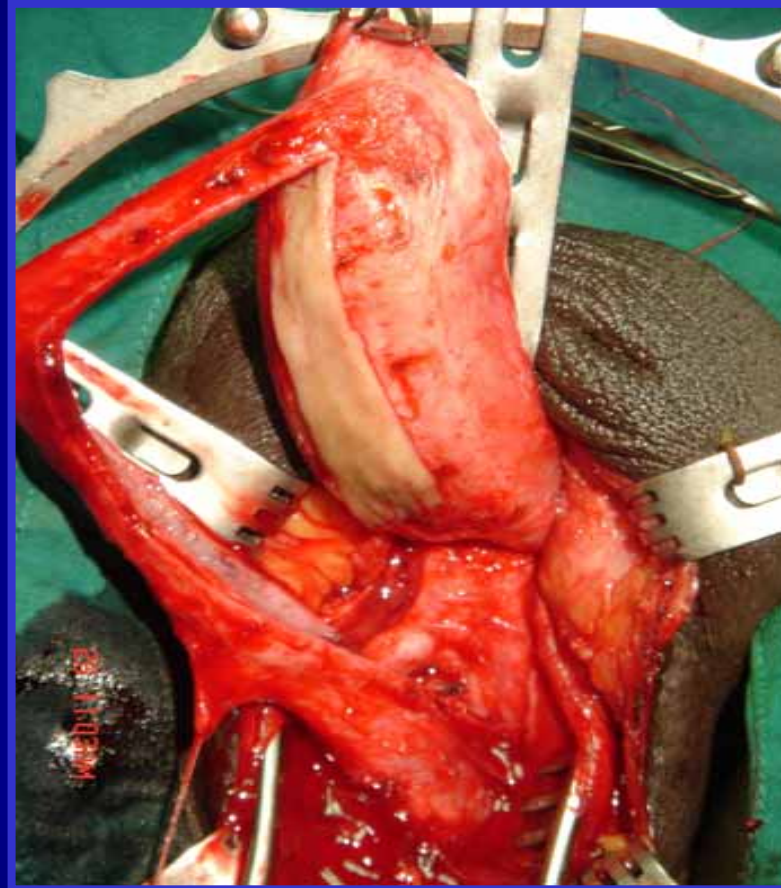
Pune - India



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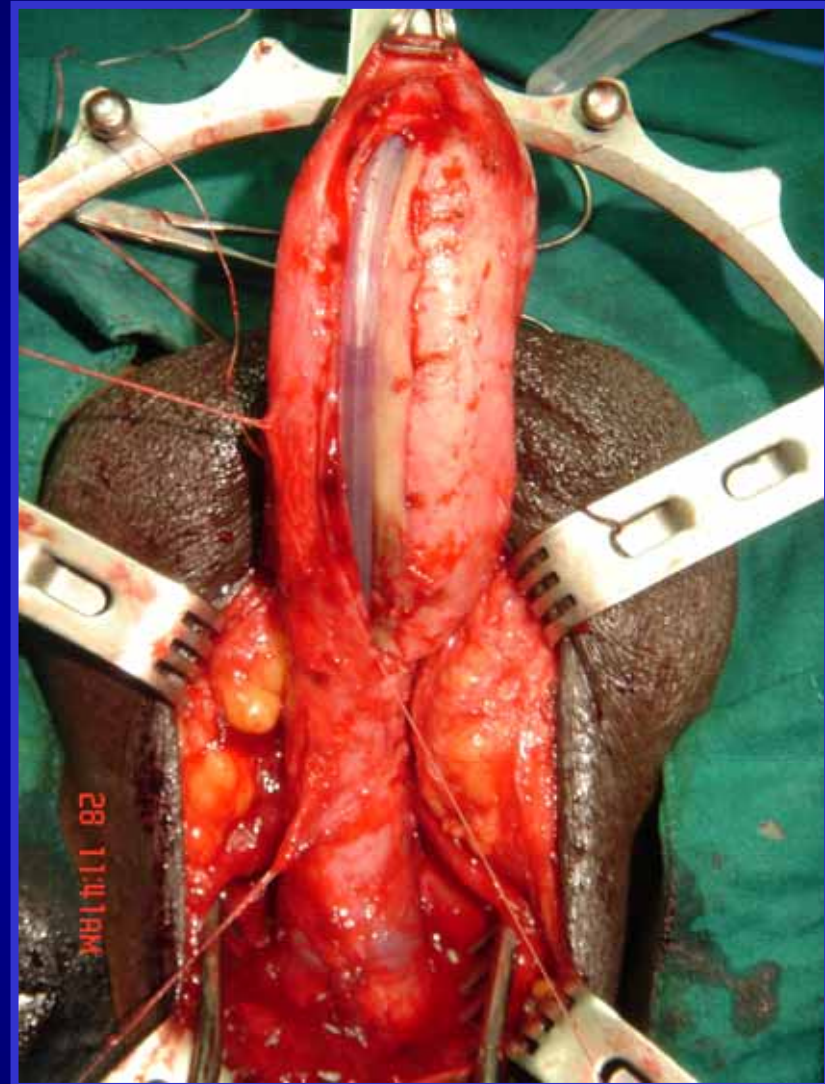
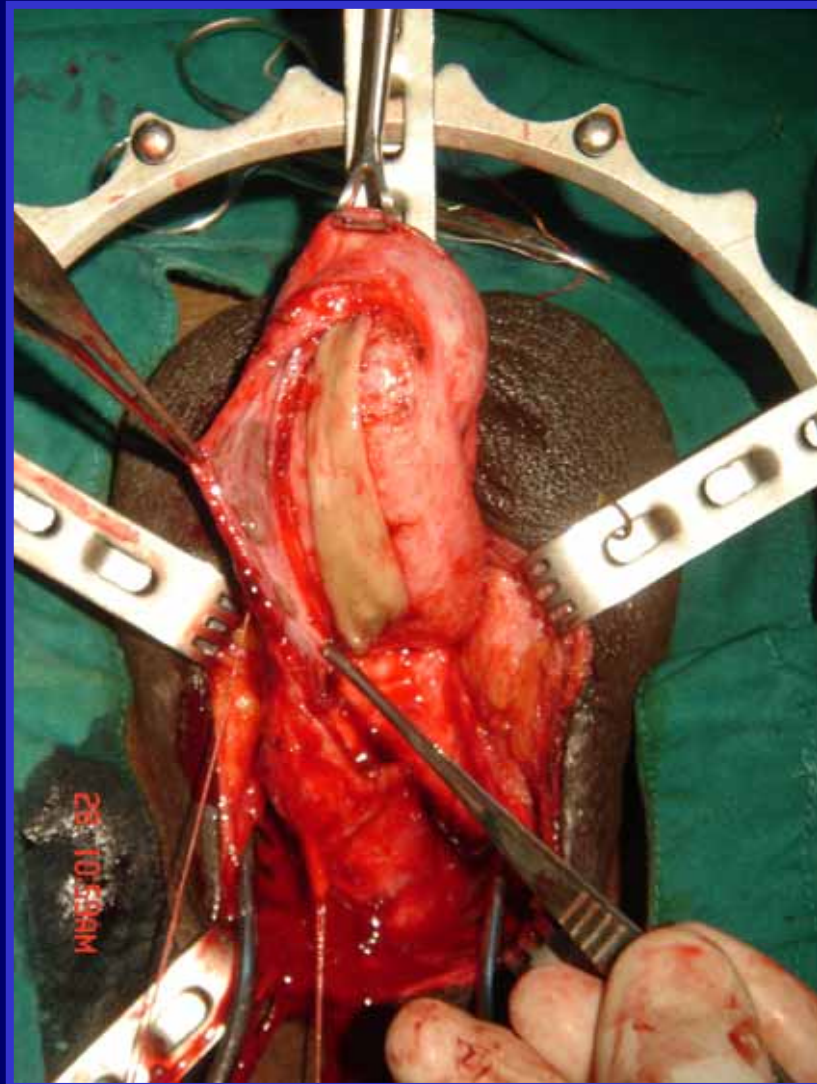


Kulkarni urethroplasty



Full length dorsal buccal mucosal onlay graft urethroplasty





Results

authors	patients	follow-up	success	failure
Kulkarni et al. 2000	36	12	89%	11%
Dubey et al. 2006	25	33	88%	12%



Multi-stage repair

- Wide meatotomy
- First stage - Johanson procedure
- A. Bracka combined technique
- Multi-stage buccal mucosal graft urethroplasty
- Perineal urethrostomy



Wide meatotomy



First stage - Johanson procedure







Wide meatotomy or first stage - Johanson procedure are selected particularly for patients in which the disease has caused urinary retention due to edema and acute inflammatory changes in the involved tissues



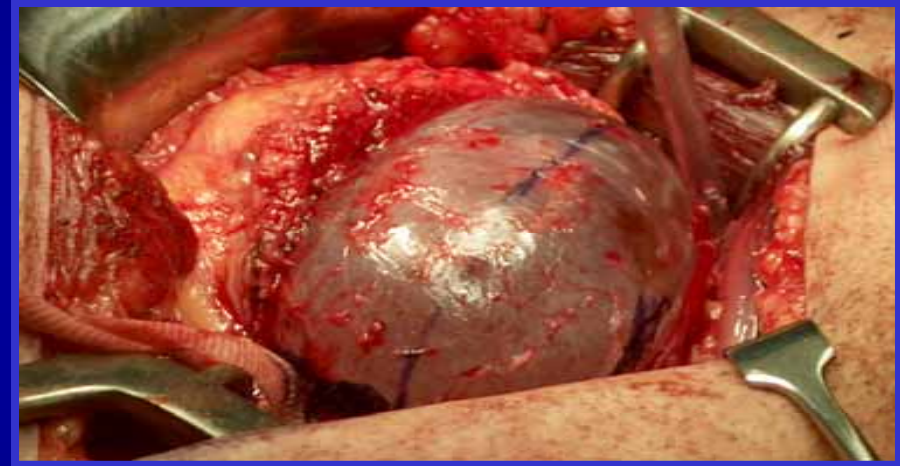
Bracka combined urethroplasty

First stage



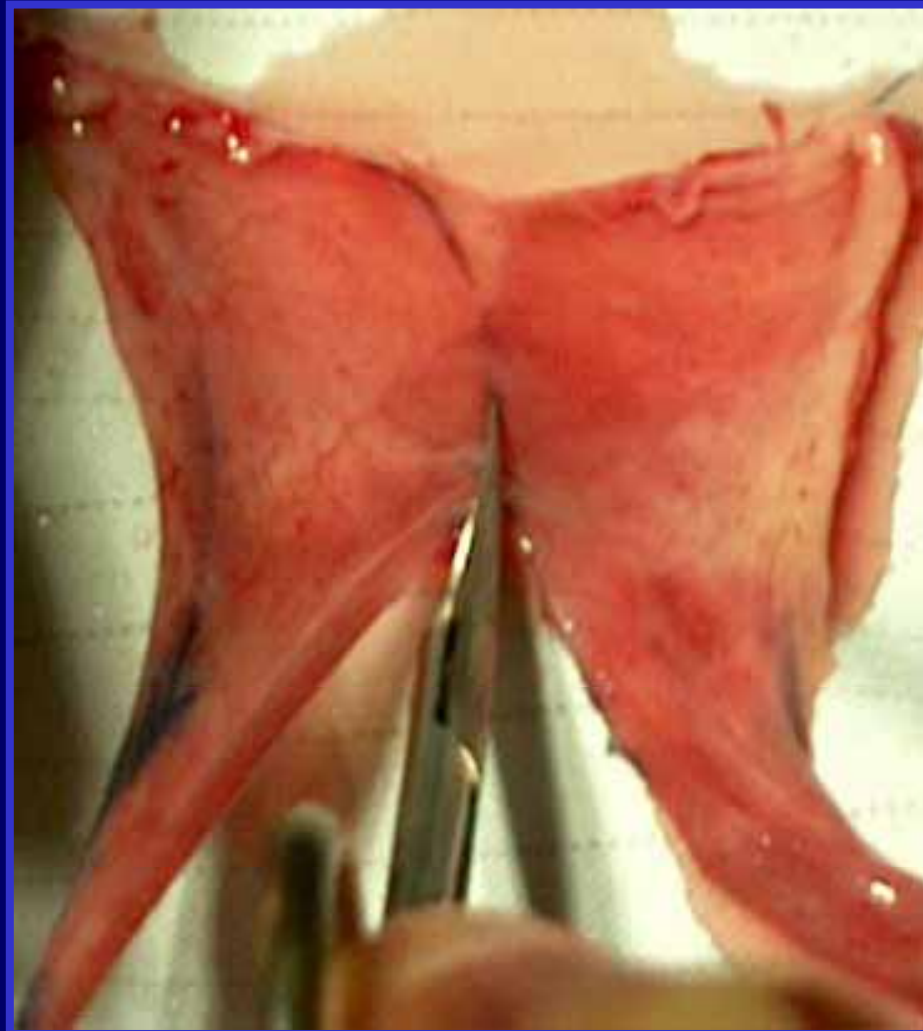
buccal mucosa graft

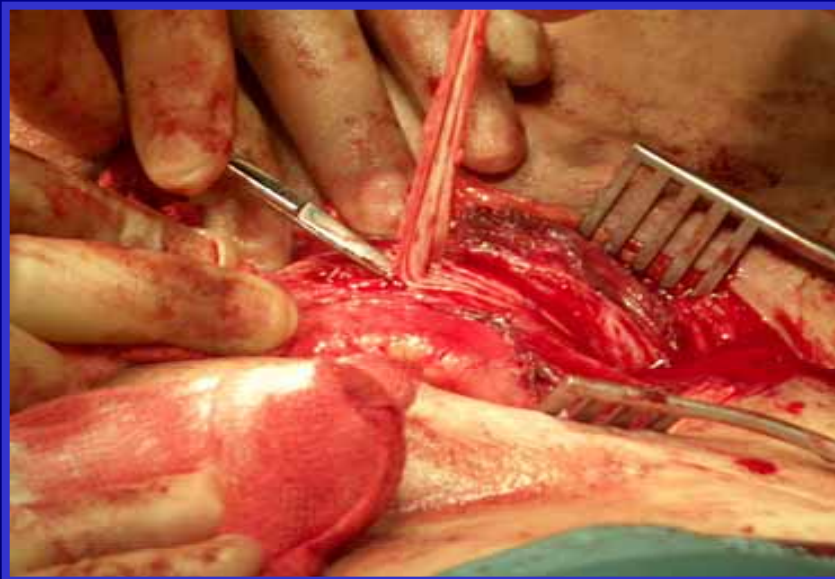
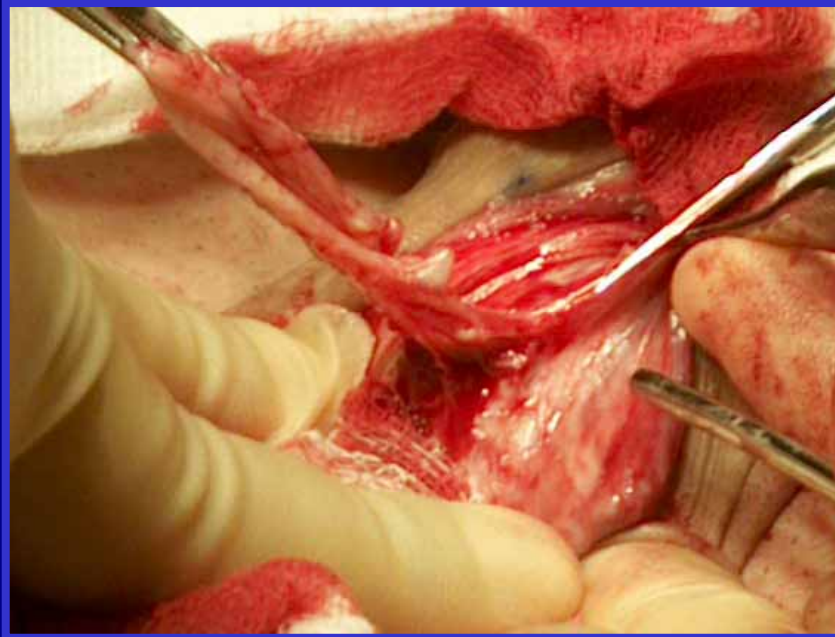
Second stage

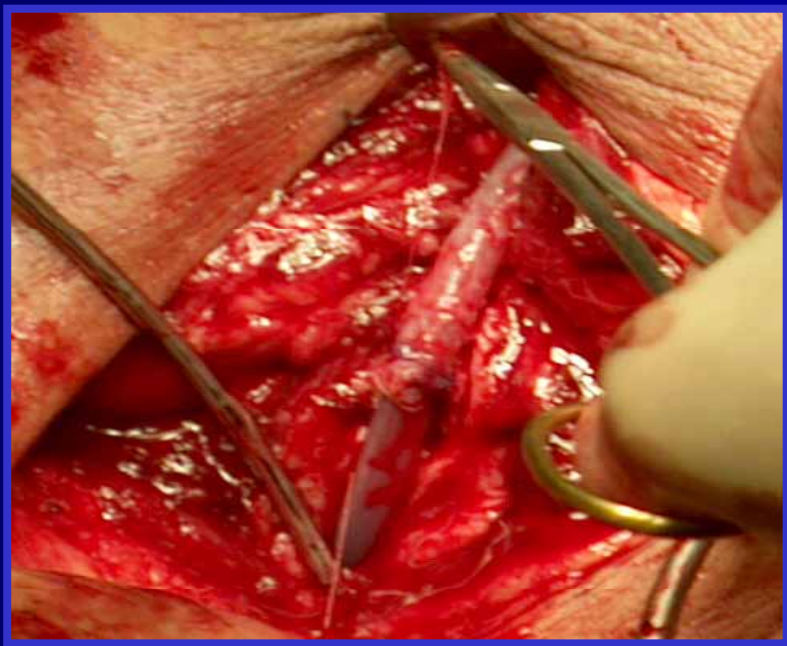


bladder mucosa tube









Results

- Patient requires periodic dilation over a long period
- Unpublished results
- A. Bracka reported a satisfactory final outcome (personal communication)



Multi-stage buccal mucosal graft urethroplasty





Results



**28% to 50% of patients
require repeated surgical
revision
of the grafted area before
the final urethral closure**

Dubey et al., J Urol, 2006







Results



fistula



glans dehiscence



meatal stenosis

18% to 30% of patients showed complications following the second stage of urethroplasty, requiring new surgical revision



Definitive perineal urethrostomy



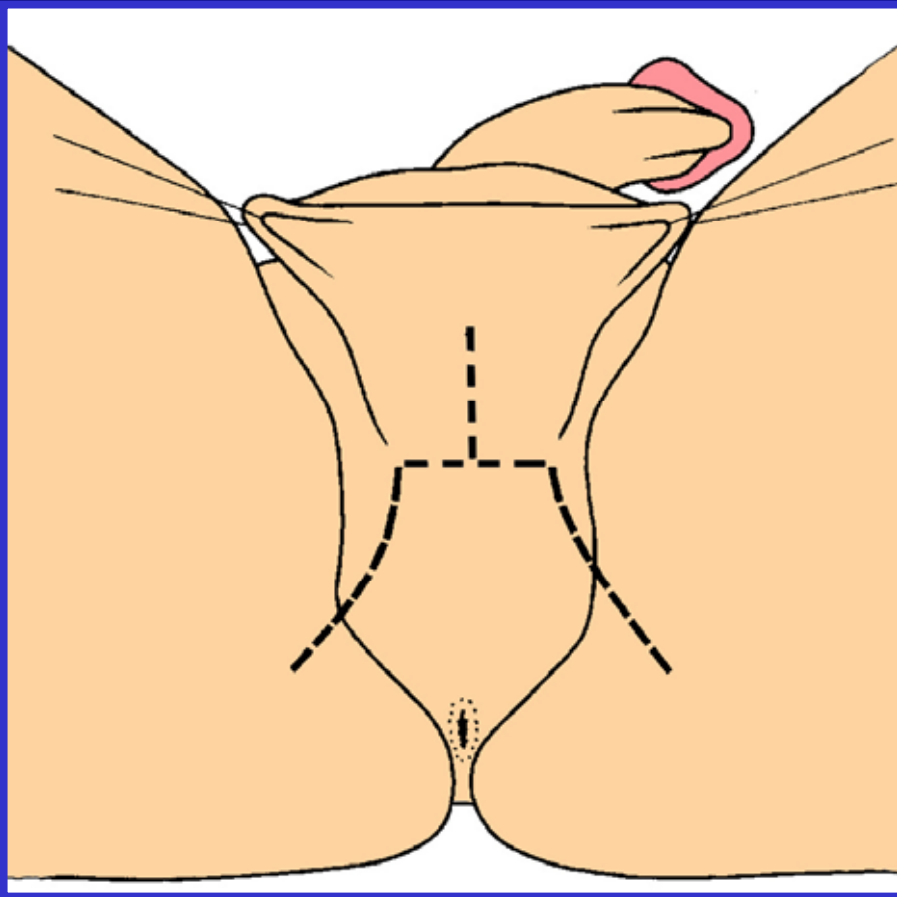
When ?

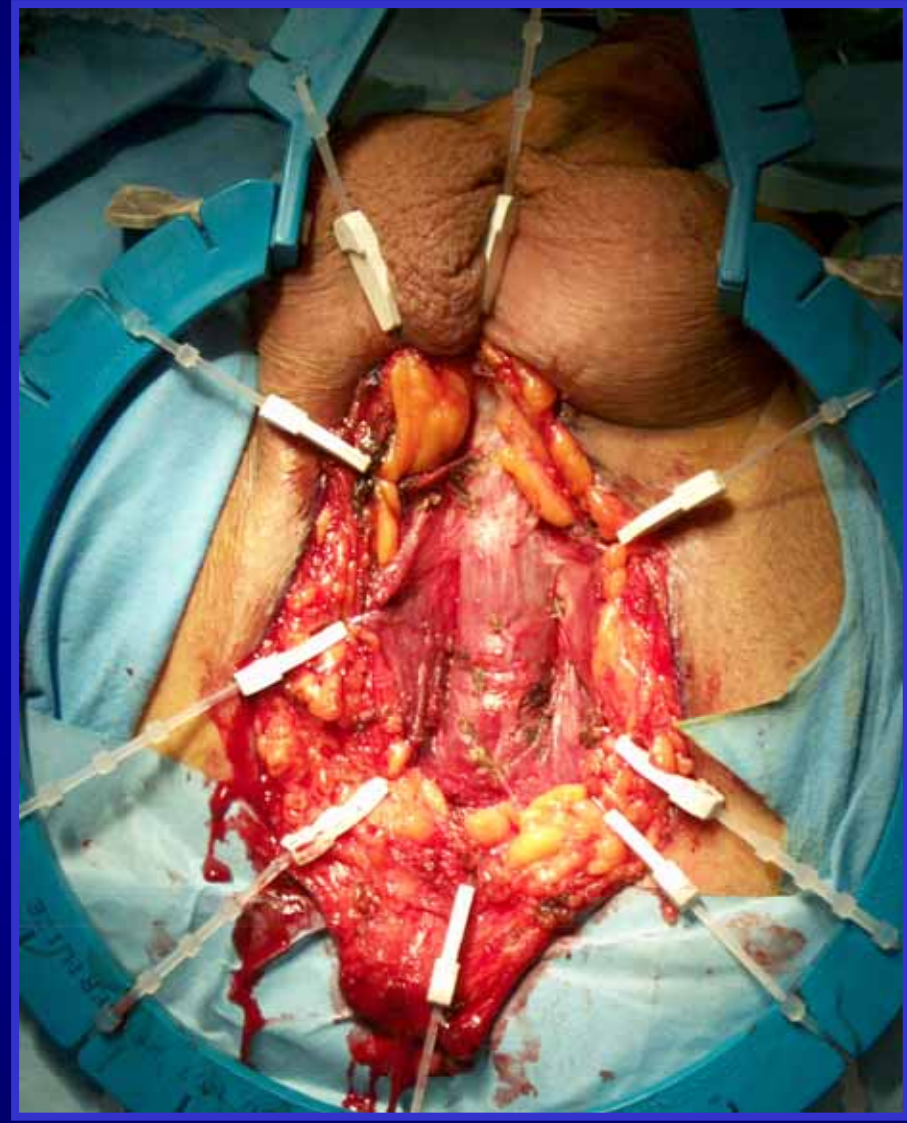
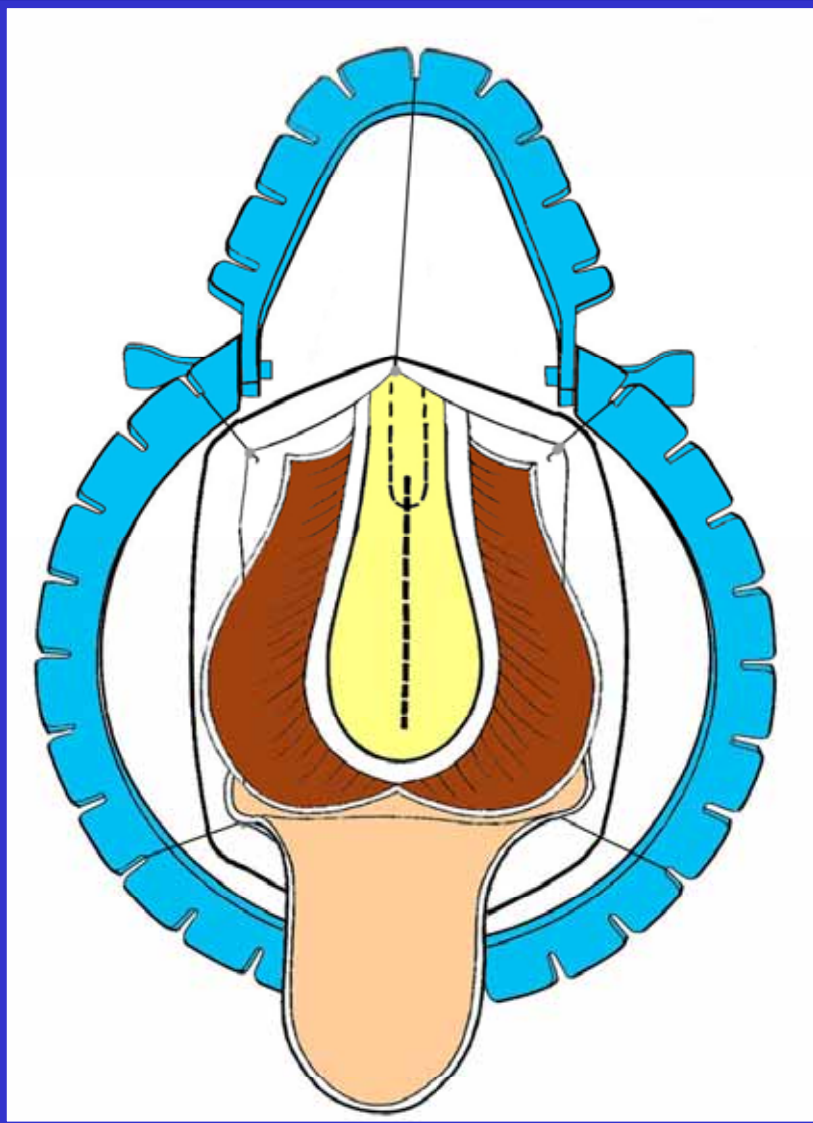


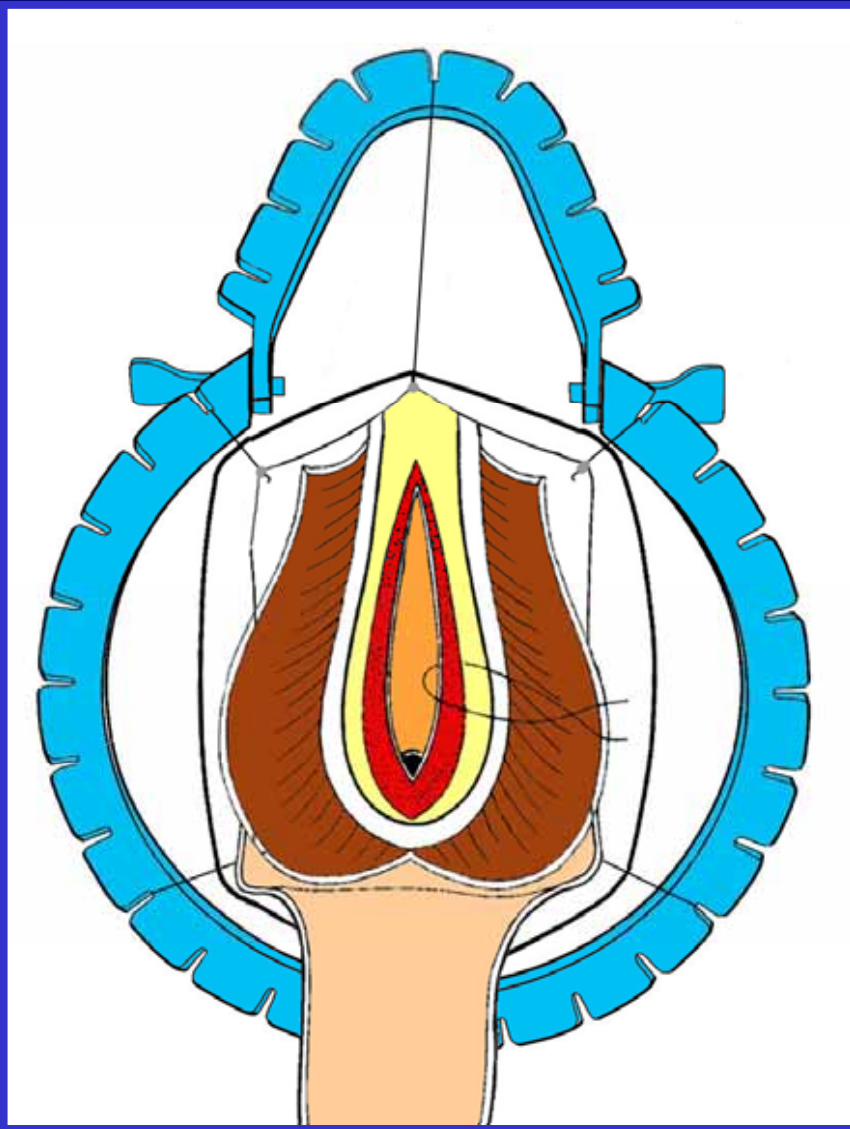
Patient, 68 years old, who underwent 12 previous urethral attempts to repair urethral stricture due to **lichen sclerosus**

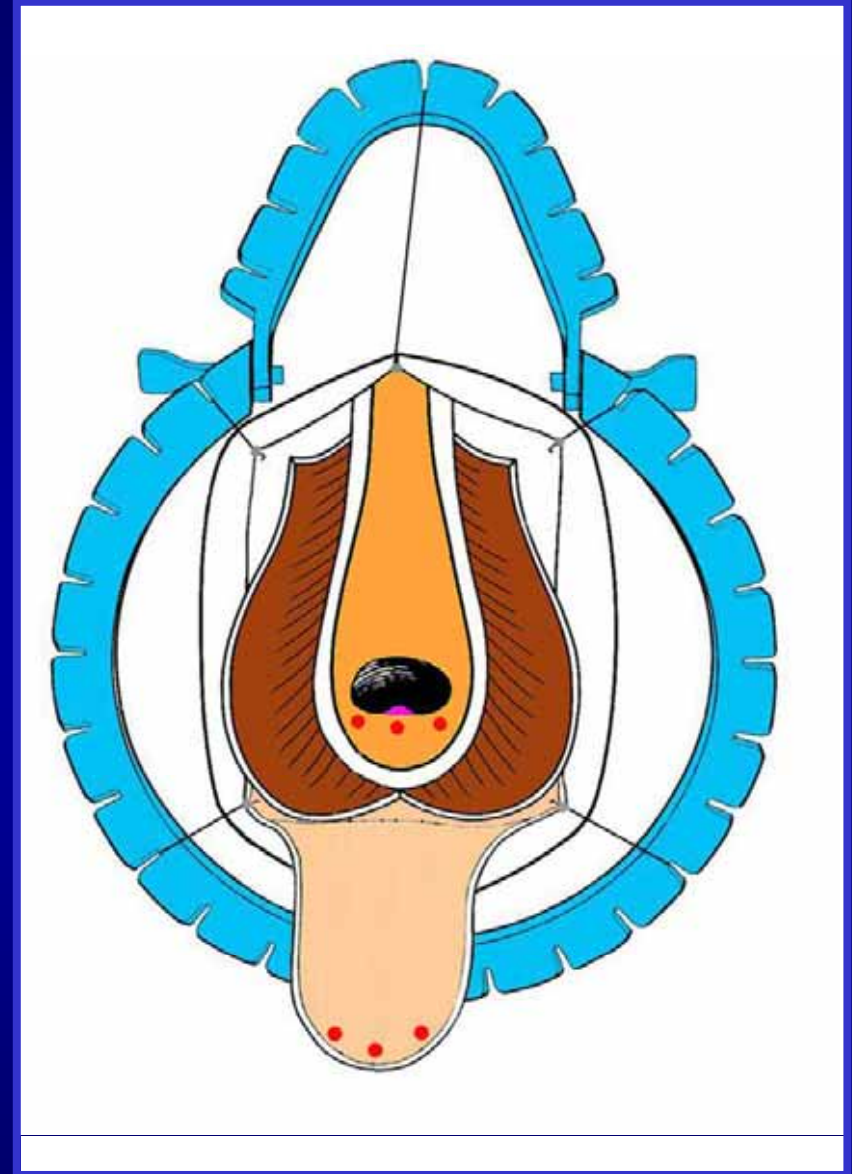
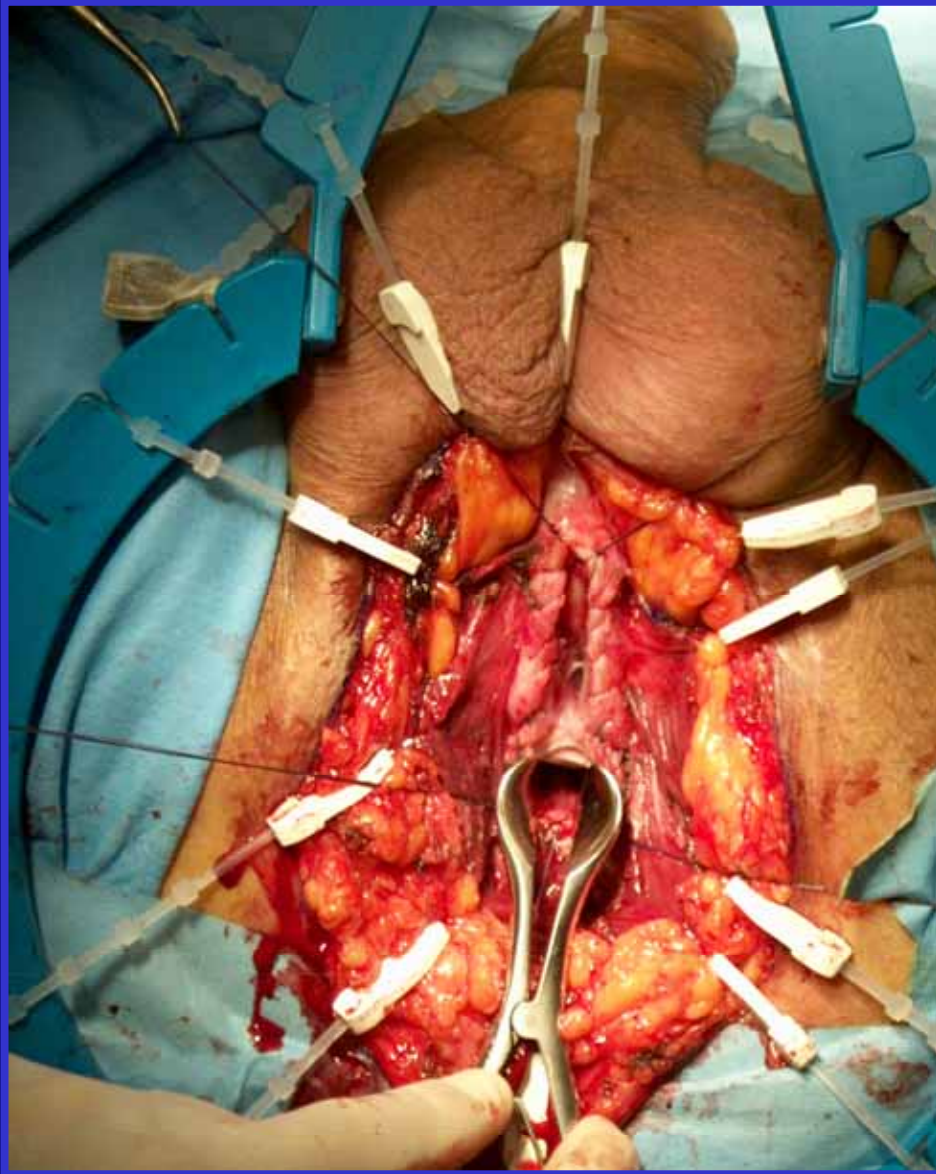


Surgical technique





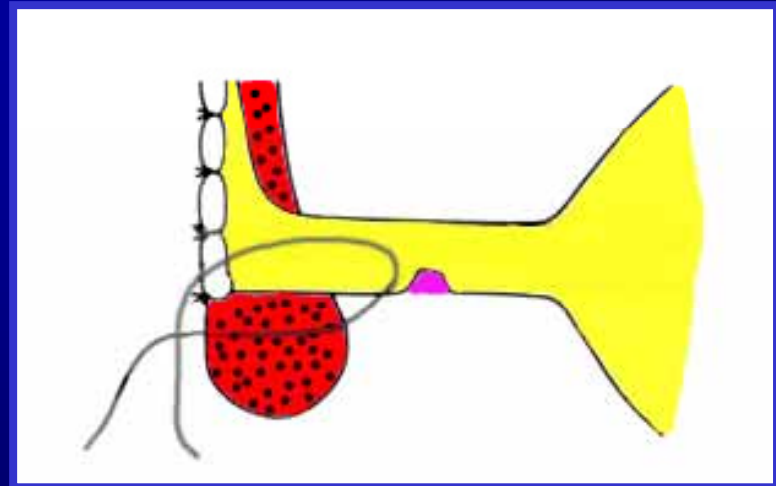
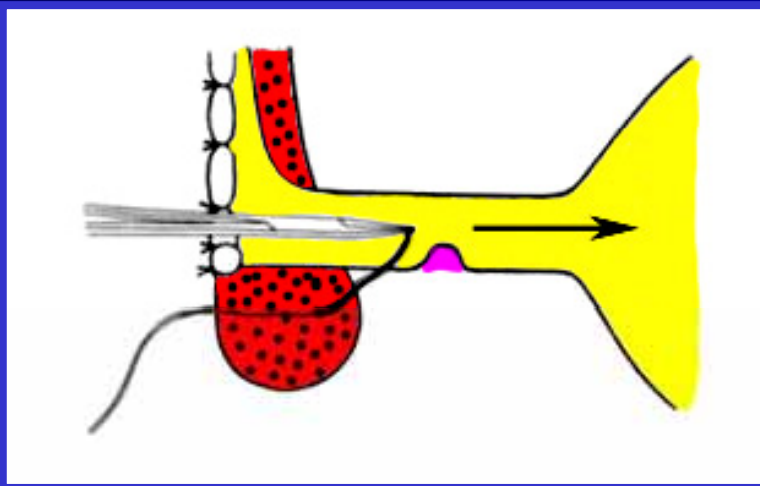
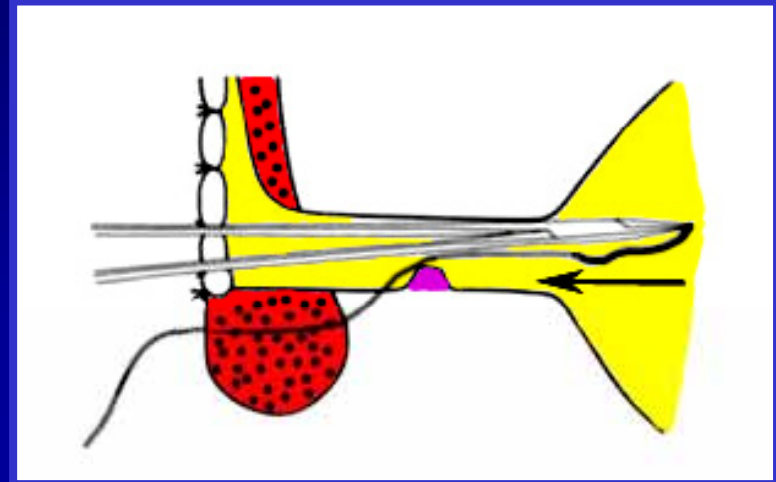
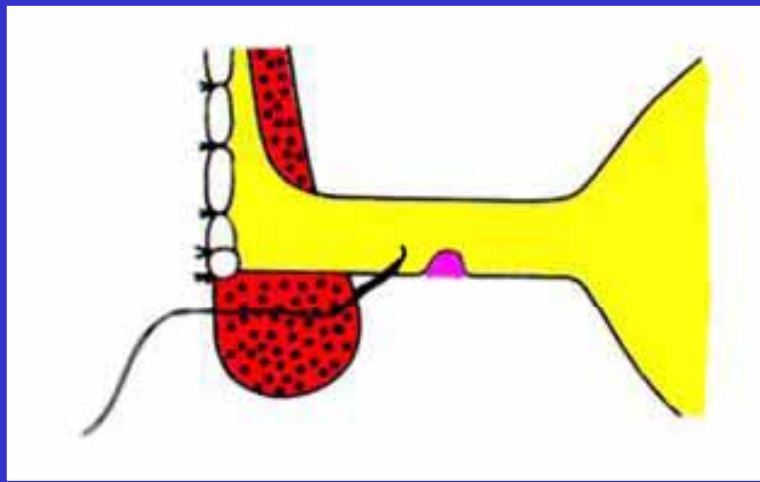


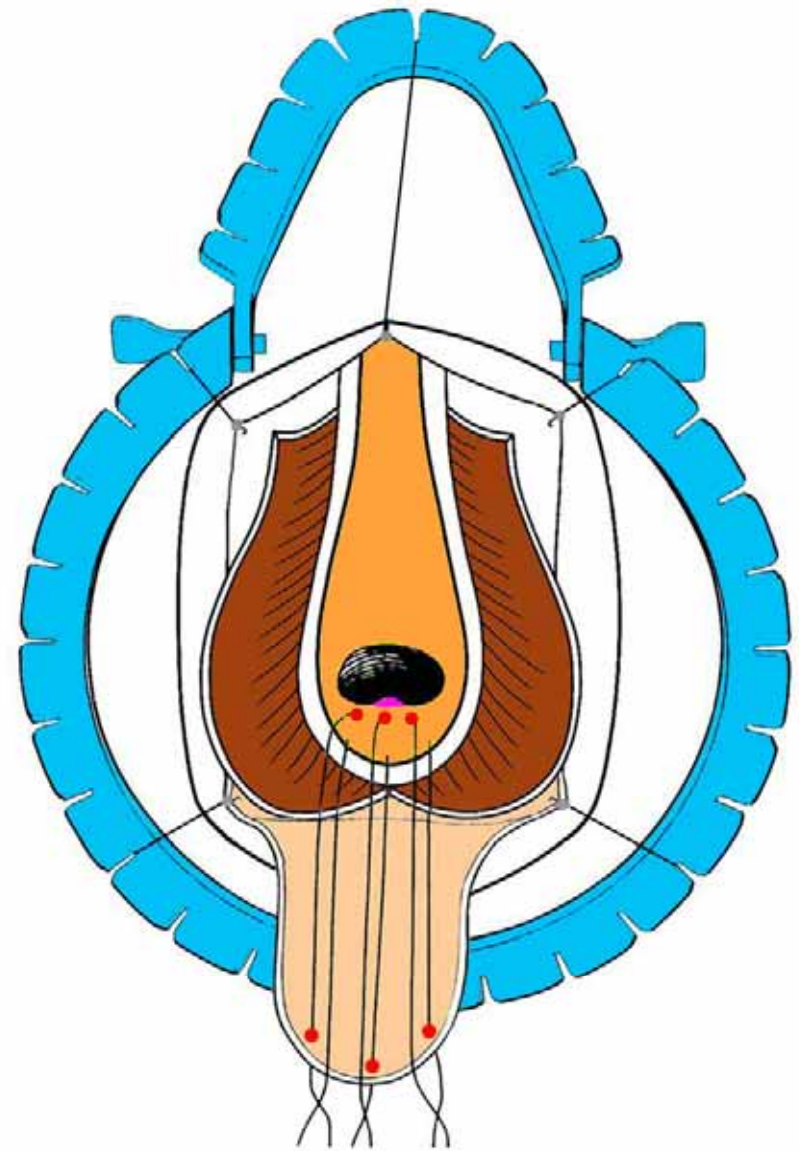
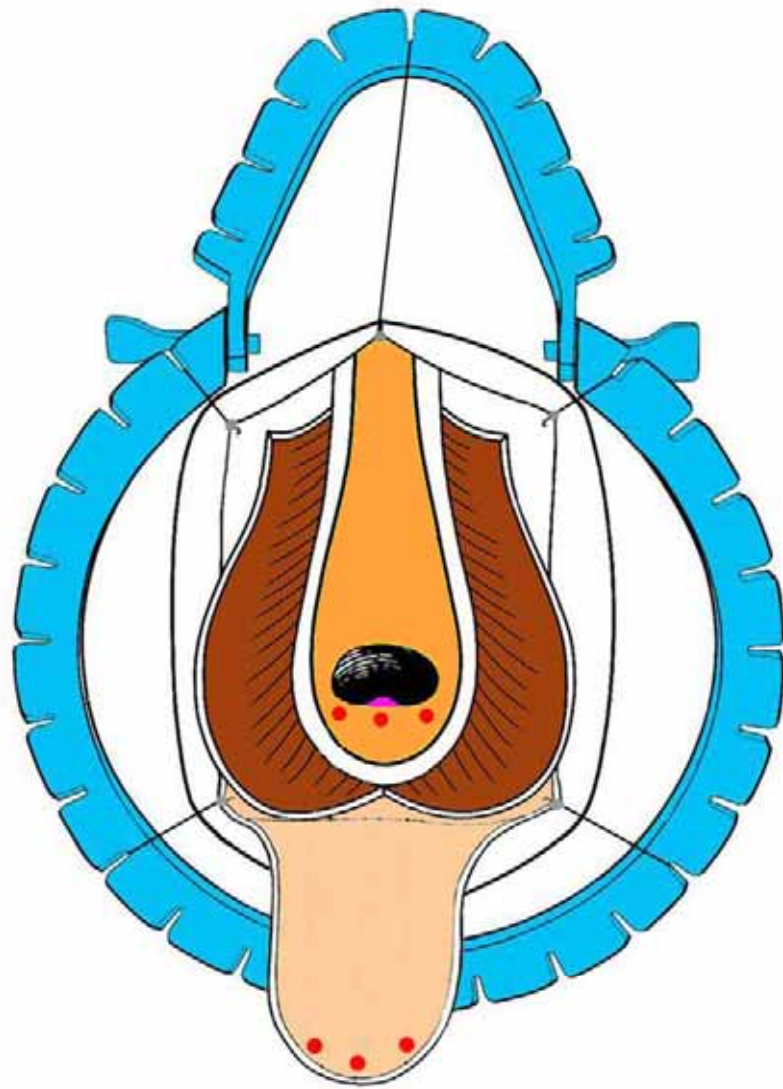


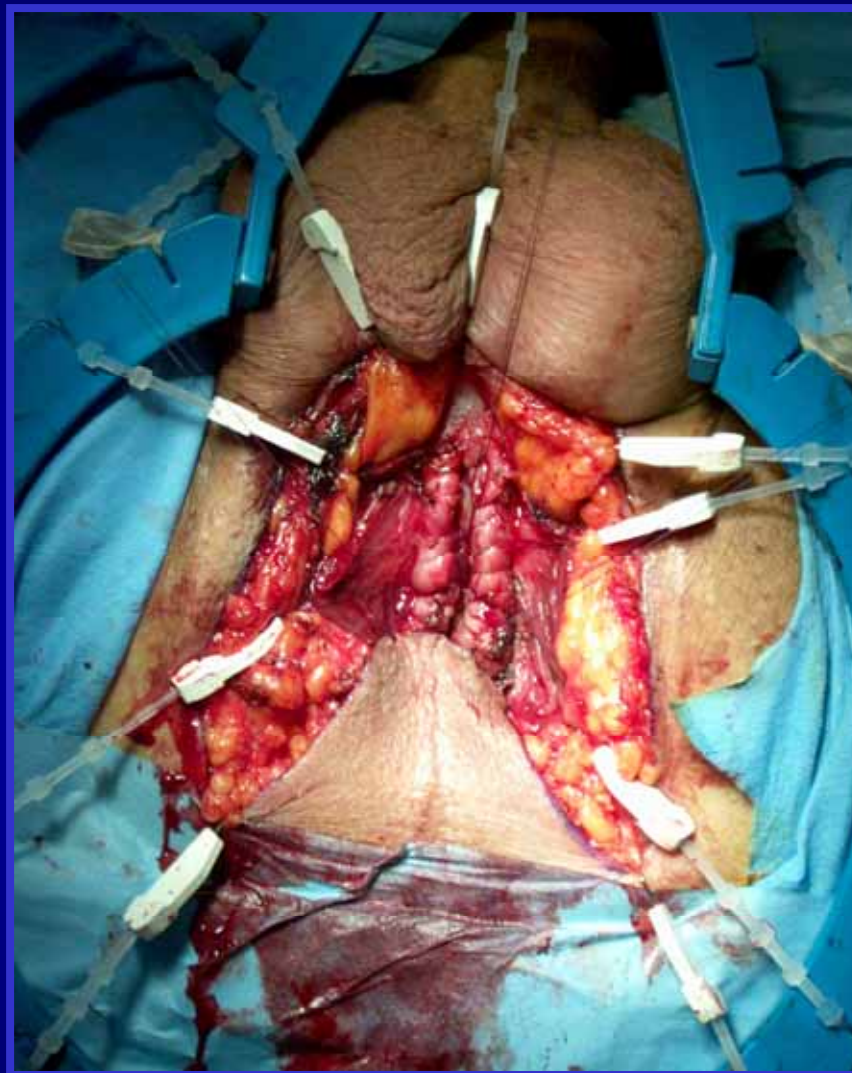
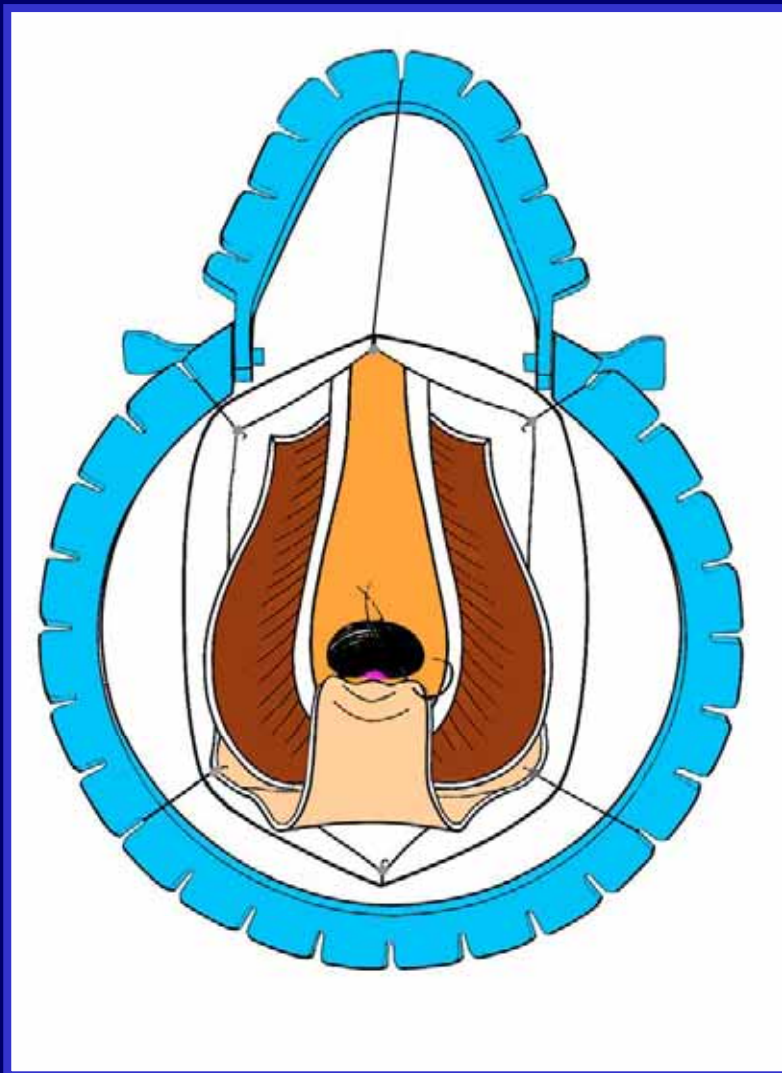
Webster's technique

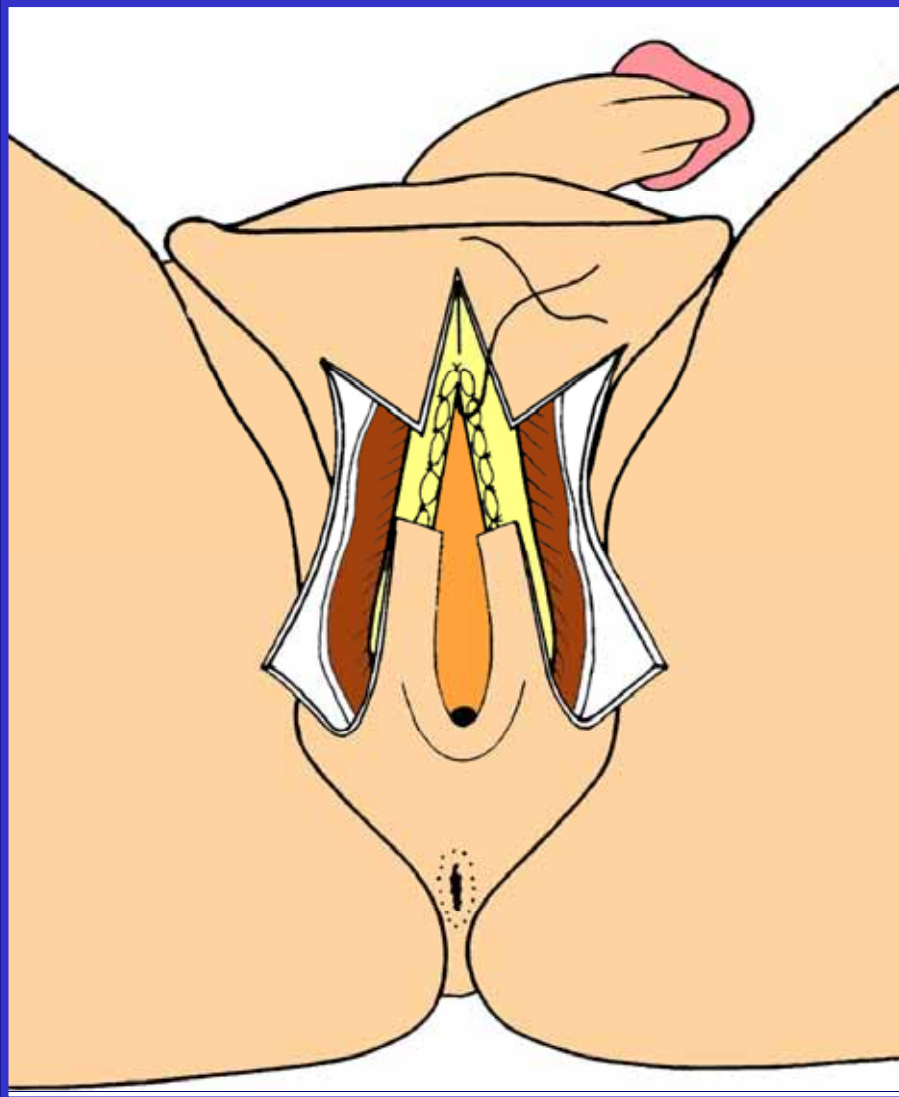


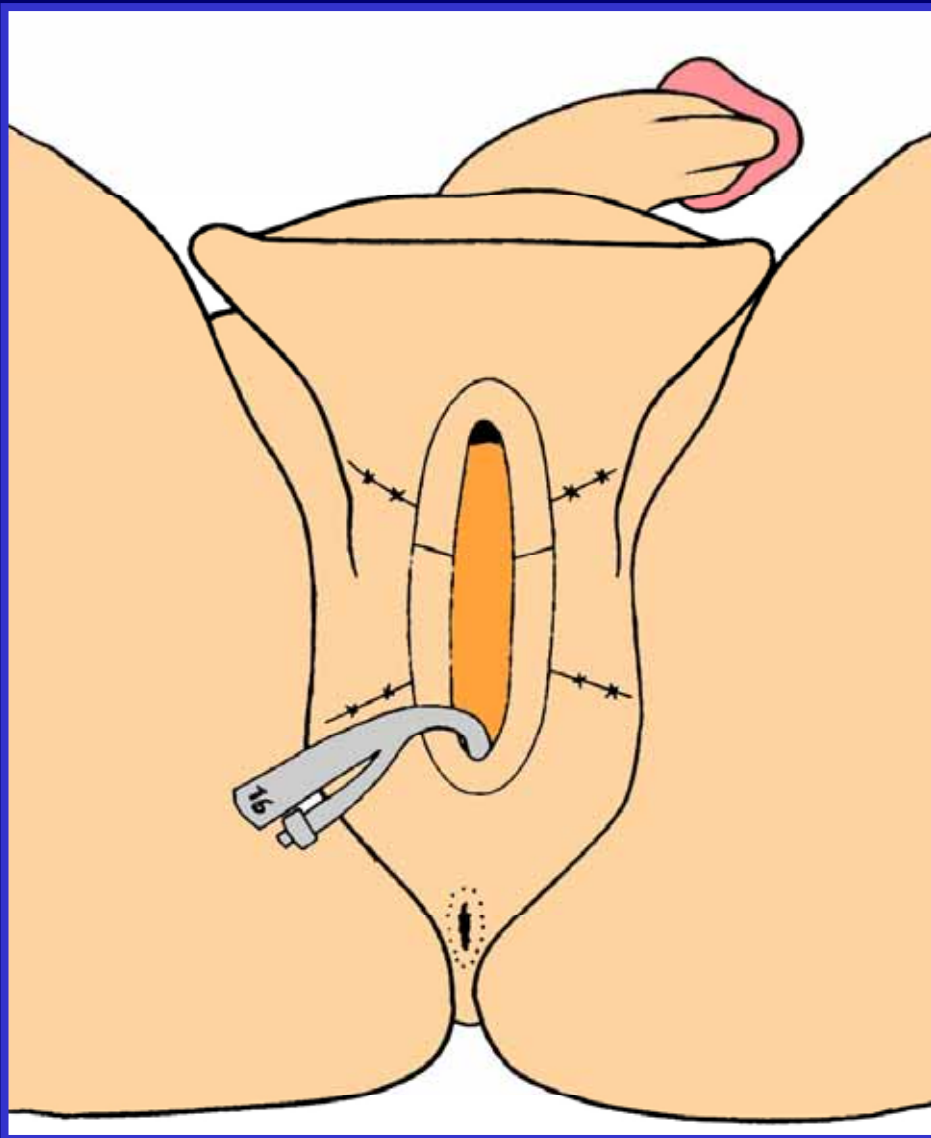
Webster's technique













Heroic measures may not always be justified in extensive urethral stricture due to **lichen sclerosus**

A C. Peterson, E. Palminteri, M. Lazzeri, G. Guazzoni,
G. Barbagli and G. D. Webster

A.U.A. Annual Meeting 2003, Chicago - USA



ADULT UROLOGY

HEROIC MEASURES MAY NOT ALWAYS BE JUSTIFIED IN EXTENSIVE URETHRAL STRICTURE DUE TO LICHEN SCLEROSUS (BALANITIS XEROTICA OBLITERANS)

ANDREW C. PETERSON, ENZO PALMINTERI, MASSIMO LAZZERI, GIORGIO GUANZONI,
GUIDO BARBAGLI, AND GEORGE D. WEBSTER

Urology, 2004



Center for Reconstructive Urethral Surgery



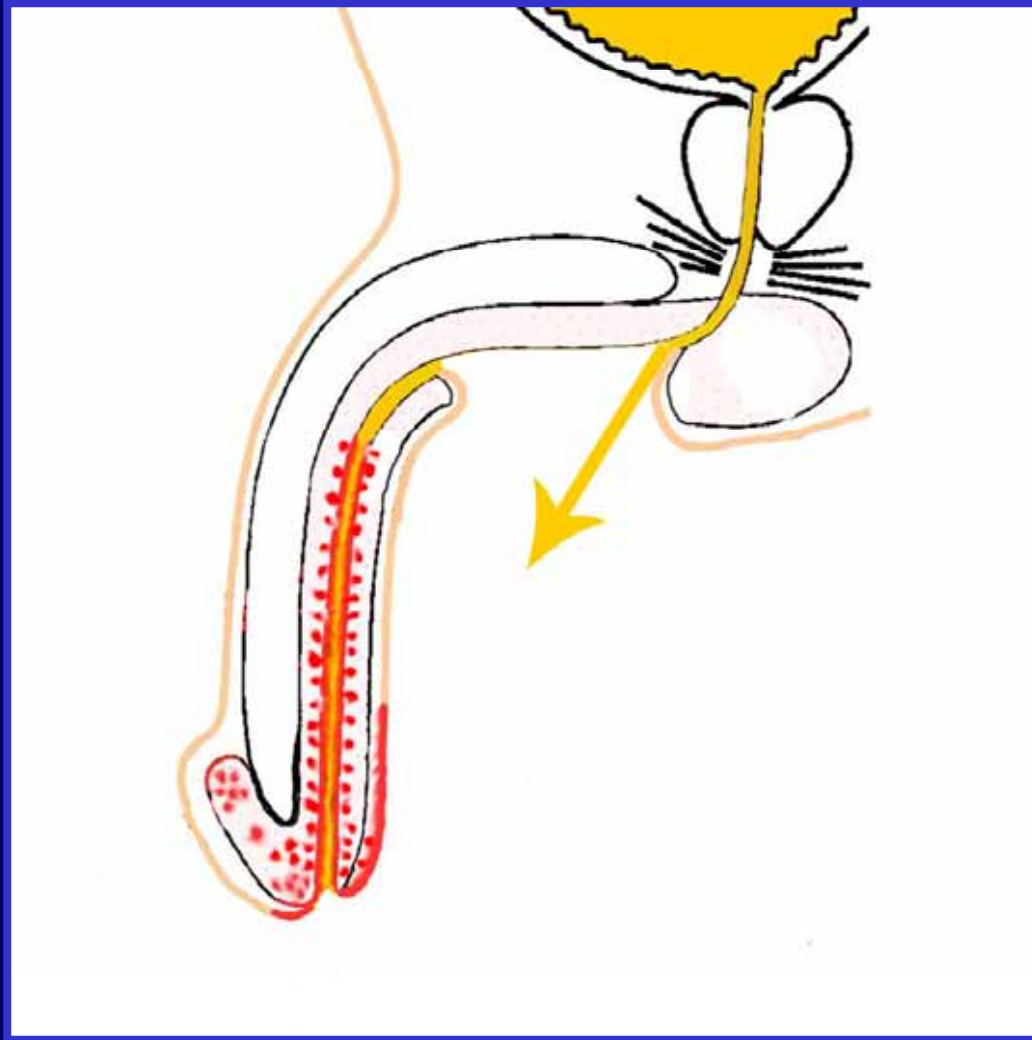
***Definitive perineal urethrostomy
is a reasonable alternative
in selected populations***

- low morbidity
- quick recovery
- satisfies quality of life
- acceptance of seated voiding
- diverts urine from diseased tissue

Peterson et al., A.U.A. Meeting 2003, Chicago - USA



Perineal urethrostomy diverts urine from diseased tissues



One-stage or multi-stage repair ?

	patients	success rate
one-stage	22	88%
multi-stage	14	72%

Dubey et al., J Urol, 2005



One-stage or multi-stage repair ?

When ?



	one-stage	multi-stage repair
age	young	old
clinical history	primary repair	previous failed repair
clinical status	decreased urinary flow	<ul style="list-style-type: none"> • urinary retention • UTI • catheter or suprapubic tube in place
histology	<ul style="list-style-type: none"> • slight or moderate disease • no pre-cancerous lesions 	<ul style="list-style-type: none"> • severe disease • pre-cancerous changes
disease extension	focal involvement of the glans, meatus, penile skin	full involvement of the glans, meatus, penile skin
urethral plate	viable or salvageable	scarred with focally dense segment



Conclusions

Lichen sclerosus is a devastating disease and the patient must be informed on the likely causes, the course of the disease and the possible association with cancer. Moreover, the patient must be informed that complex and multiple surgical procedures will be necessary to restore urinary function, sexual activity and aesthetic appearance of the genitalia



I showed you what **lichen sclerosis** is and what stenosis is in a patient affected with genital **lichen sclerosis** and the current surgical techniques suggested for repair

What approach to take will be decided by you, your experience, your surgical background and your patient's expectation

There is nothing more I can tell you !



www.urethralcenter.it



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

**Next month, this lecture will be fully available in
our website**

Welcome !

