Jayaramdas Patel Academic Centre
Mujibhai Patel Urological Hospital
URETHROPLASTY
Nadiad – Gujarat - India
July 19 – 20, 2012
Lichen sclerosus
Overview: etiology, clinical presentation and management
The discussion I have prepared for today is on a difficult topic as it is not easy to provide definitive guidelines of treatment for urethral stricture due to lichen sclerosus.

In any case, I sincerely hope to provide you with useful information on the problems involved in the treatment of this complex type of stricture and disease.
Lichen sclerosus: 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.)
In 1995, the American Academy of Dermatology recommended that the term lichen sclerosus be used in future reports to define the true incidence and the malignant potential of lichen sclerosus.
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: Etiology

- Immune dysregulation
- Infection
- Hormonal influences
- Local factors

J Urol 2007; 178: 2268-2276
Lichen sclerosus is a complex immunological disorder of the genitalia involving:

- glans, meatus, coronal sulcus and penile skin
- navicularis, penile and bulbar urethra
Lichen sclerosus is a chronic, evolving disease.

2 years after

5 years after

E-mail: info@urethralcenter.it
Websites: www.uretra.it  www.urethralcenter.it
Lichen sclerosus

Sexual activity

Urinary function

Aesthetic appearance of the genitalia

Poor quality of life
Lichen sclerosus: Association with SCC

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; 175: 1359-1363
Lichen sclerosus is a pre-cancerous condition for at least some types of penile cancers, especially those not related to HPV.

Lichen sclerosus and SCC
Lichen sclerosus and Verrucous Carcinoma
Lichen sclerosus and Queyrat’s Erythoplasia
Lichen sclerosus and No-Carcinoma
Lichen sclerosus: Histology
The 5 histopathological features for diagnosis of *lichen sclerosus*

- Hyperkeratosis of the epithelium
- Hydropic degeneration of the basal cells
- Sclerosus of the subepithelial collagen
- Dermal lymphocytic infiltration
- Atrophic epidermis with loss of rete pegs and homogenization of the collagen in the upper third of the dermis
Lichen sclerosus: Histology

- Slight
- Moderate
- Severe
Lichen sclerosus
and
Urethral stricture

Epidemiology
Lichen sclerosus and Urethral stricture

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

- Involvement of the urethra in genital lichen sclerosus 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

Urol Int 2004; 73: 1-5
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.
1 foreskin
2 glans
3 meatus
4 penile urethra
? bulbar urethra
Histological Evidence of Urethral Involvement in Male Patients With Genital Lichen Sclerosus: A Preliminary Report

Guido Barbagli, Francesco Mirri, Michele Gallucci, Salvatore Sansalone, Giuseppe Romano and Massimo Lazzeri*

From the Center for Reconstructive Urethral Surgery (GB), Arezzo, Sezione di Anatomia Patologica, Ospedale Santa Maria alla Gruccia (FM), Montervarchi, Department of Urology, Istituto Nazionale Tumori “Regina Margherita” (MG) and Department of Urology, Tor Vergata University (SS), Rome, and Departments of Urology, San Donato Hospital (GR), Arezzo and Istituto Fiorentino di Cura e Assistenza S. P. A., Gruppo GIOMI (IML), Florence, Italy

Doctor Francesco Mirri

J Urol 2011; 185: 2171-2176
Lichen sclerosus and Urethral stricture

99 patients (mean age 46 years)
274 biopsies for LS
Lichen sclerosus and Urethral stricture

Navicularis urethral mucosa

Epidermized navicularis urethral mucosa. LS similar to cutaneous counterpart
Lichen sclerosus and Urethral stricture

Epidermized penile urethral mucosa.
LS similar to cutaneous counterpart
Lichen sclerosus and Urethral stricture

Bulbar urethral mucosa

Transition from normal stratified cylindrical epithelium (left) through squamous nonkeratinizing metaplastic epithelium to keratinizing squamous metaplastic hyperplasia (right)
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.
Lichen sclerosus and Urethral stricture

• Involvement of external urinary meatus is a prognostic factor for spread Lichen sclerosus through the navicularis and penile tracts.

• More than 10 years are required to Lichen sclerosus progress.

• It is possible to document Lichen sclerosus in navicularis and penile urethral mucosa by histology.

• It is not possible do document Lichen sclerosus in bulbar urethral mucosa.

J Urol 2011; 185: 2171-2176
Lichen sclerosus

Treatment
 Patients with urethral stricture disease due to *lichen sclerosus* 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.
How to select the surgical procedure

- **Patient:** age, co-morbidity, quality of life, request and expectation

- **Disease:** site, extension, histology, aggressiveness
Pre-operative investigations

- Multiple biopsies
- Retrograde and voiding urethrography
- Urethroscopy
41% of patients with genital LS showed pan-urethral strictures
Lichen sclerosus: Extensive circumcision
Lichen sclerosus: circumcision

43 patients – median age 45 years – median follow-up 88 months

<table>
<thead>
<tr>
<th>success</th>
<th>43 (100%)</th>
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<tbody>
<tr>
<td>failure</td>
<td>/</td>
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</table>

Up-to-date: December 31, 2011
Lichen sclerosus: Circumcision and meatotomy
Lichen sclerosus: circumcision and meatotomy
11 patients – median age 48 years – median follow-up 94 months

<table>
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<tr>
<th>success</th>
<th>11 (100%)</th>
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<tr>
<td>failure</td>
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Up-to-date: December 31, 2011
Lichen sclerosus: wide meatotomy
Lichen sclerosus: meatotomy

27 patients – median age 42 years – median follow-up 69 months

<table>
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<tr>
<th>success</th>
<th>19 (70.4%)</th>
</tr>
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<tbody>
<tr>
<td>failure</td>
<td>8 (29.6%)</td>
</tr>
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Up-to-date: December 31, 2011
Lichen sclerosus: penile two-stage urethroplasty
Lichen sclerosus: penile two-stage urethroplasty
Lichen sclerosus: penile one-stage urethroplasty
Lichen sclerosus: penile urethroplasty

Number of operations

22 patients – median age 53 years – median follow-up 46 months

Up-to-date: December 31, 2011
Lichen sclerosus: penile urethroplasty

22 patients – median age 53 years – median follow-up 46 months

Up-to-date: December 31, 2011
Lichen sclerosus: panurethral stricture
Lichen sclerosus: panurethral stricture

Number of prior operations

57 patients – median age 57 years – median follow-up 73 months

Up-to-date: December 31, 2011
Lichen sclerosus: panurethral stricture

Type of repair

- 89.1% perineostomy
- 5.5% oral mucosa
- 1.8% meatotomy
- 1.8% two-stage urethroplasty
- 1.8% urethrotomy

57 patients – median age 57 years – meadian follow-up 73 months

Up-to-date: December 31, 2011
One-stage Kulkarni’s urethroplasty

Pune - India
Kulkarni urethroplasty

Full length dorsal buccal mucosal onlay graft urethroplasty
Lichen Sclerosis of the Male Genitalia and Urethra: Surgical Options and Results in a Multicenter International Experience with 215 Patients

Sanjay Kulkarni\textsuperscript{a, c}, Guido Barbagli\textsuperscript{b}, Deepak Kirpekar\textsuperscript{c}, Francesco Mirri\textsuperscript{d}, Massimo Lazzeri\textsuperscript{e, *}
Definitive perineal urethrostomy
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
Lichen sclerosus: panurethral stricture

57 patients – median age 57 years – meadian follow-up 73 months

Up-to-date: December 31, 2011
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; 64: 565-586
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

Urology 2004; 64: 565-586
Perineal urethrostomy diverts urine from diseased tissues
One-stage or multi-stage repair?
<table>
<thead>
<tr>
<th>Age</th>
<th>One-stage repair</th>
<th>Multi-stage repair</th>
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<tbody>
<tr>
<td>young</td>
<td></td>
<td>old</td>
</tr>
<tr>
<td>Clinical History</td>
<td>Primary repair</td>
<td>Previous failed repair</td>
</tr>
<tr>
<td>Clinical Status</td>
<td>Decreased urinary flow</td>
<td>• Urinary retention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• UTI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Catheter or suprapubic tube in place</td>
</tr>
<tr>
<td>Histology</td>
<td>• Slight or moderate disease</td>
<td>• Severe disease</td>
</tr>
<tr>
<td></td>
<td>• No pre-cancerous lesions</td>
<td>• Pre-cancerous changes</td>
</tr>
<tr>
<td>Disease Extension</td>
<td>Focal involvement of the glans, meatus, penile skin</td>
<td>Full involvement of the glans, meatus, penile skin</td>
</tr>
<tr>
<td>Urethral Plate</td>
<td>Viable or salvageable</td>
<td>Scarred with focally dense segment</td>
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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 sclerosus is and what stenosis is in a patient affected with genital lichen sclerosus 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!
Sava Perovic Memorial

September 14-15, 2012
Centro Galvagni Toscano
Via dei Lecchi, 22
Arezzo, Italy

2nd Conference on Failed Hypospadias Repair
Live Surgery

4th Surgical Workshop of CUGRS
(Complex Uro-Genital, Reconstructive Urological Surgery)

Organizing Committee:
Center for Reconstructive Urological Surgery - Sava Perovic Foundation

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Websites: www.uretra.it

Workshop Registration
Registration Fee: Before 1 August: € 300.00
After 1 August: € 400.00
Residents: € 50.00

Registration includes official dinner, lunches and coffee/tea break.

Payment Method: Bank Transfer to DAFNE SRL
Banco di Napoli, Agenzia di Siena (RC)
85144 Siena (RC), Italy
IBAN: IT 7960 0108 591 100000004778
BIC: IBSPITRA

Official language: English.

WEB-ON

Please submit your Abstract (in English) at:
email: salvatore.sansalvatore@icloud.com

Scientific secretary:
G. Barbagli, R. D'Onofrio,
G. Romano, S. Sansalvatore

Workshop Registration
Registration Fee: Before 1 August: € 150.00
Residents: € 50.00

Registration includes five surgeries and all presentations.

For more information: http://www.web-on.org

Payment Method: Bank Transfer to DAFNE SRL
Banco di Napoli - Agenzia di Siena (RC)
85144 Siena (RC), Italy
IBAN: IT 7960 0108 591 100000004778
BIC: IBSPITRA

Official language: English.
www.urethralcenter.it
www.uretra.it

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

Thank you!