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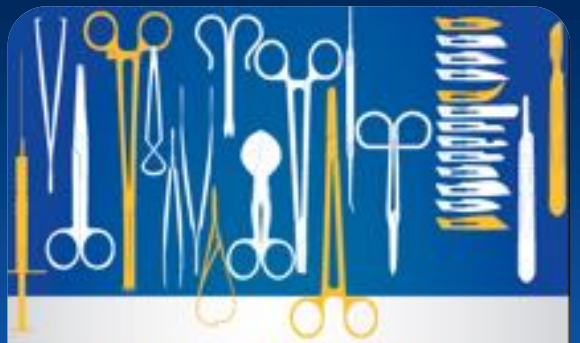


ESTENOSES PANURETRAIS

Leiria, 28 de Novembro de 2015

Centro Hospitalar Cova da Beira, EPE

FACULDADE DE CIÊNCIAS DA SAÚDE
FCS
UBI
Covilhã Portugal

Bruno Jorge Pereira
MD, FEBU, FECSM

Estenoses Panuretrais

DEFINIÇÃO

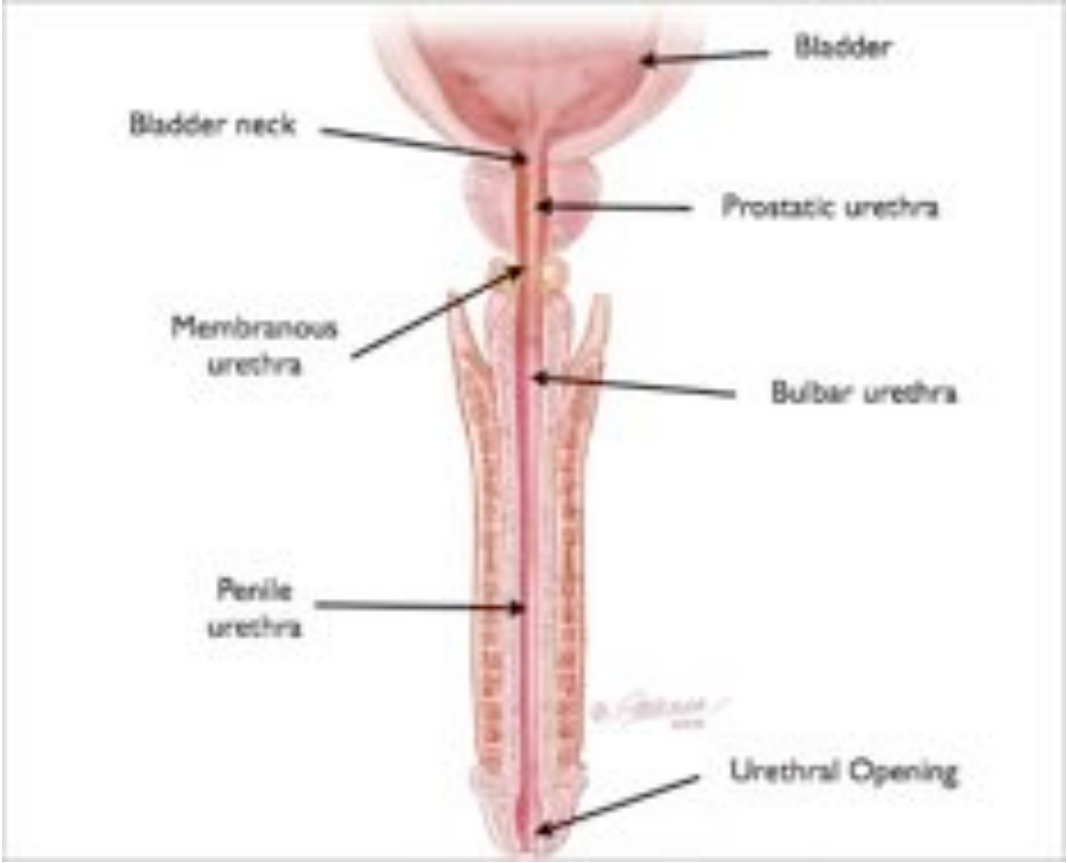
Reconstructive Urology

Management of Complex Anterior Urethral Strictures With Multistage Buccal Mucosa Graft Reconstruction

Spencer J. Kozinn, Niall J. Harty, Leonard Zinman, and Jill C. Buckley

UROLOGY 82 (3), 2013

* > 9 cm de comprimento
* Envolvendo mais do que 1 segmento uretral



Contemporary Urethral Stricture Characteristics in the Developed World

Enzo Palminteri, Elisa Berdondini, Paolo Verze, Cosimo De Nunzio, Antonio Vitarelli, and Luca Carmignani

UROLOGY 81: 191–197, 2013.

Table 1. Urethral stricture characteristics

Variable	Site					
	Penile (n = 439; 30.5%)	Bulbar (n = 675; 46.9%)	Panurethral (n = 142; 9.9%)	Penile Plus Bulbar (n = 71; 4.9%)	Posterior (n = 112; 7.8%)	Total (n = 1439)
Mean age (y)	45.2 ± 17	42.2 ± 16.3	55.6 ± 13.4	47.4 ± 14.5	47.2 ± 18.6	45.1 ± 6.9
Mean length (cm)	3.65 ± 2.4	2.83 ± 1.4	12.19 ± 2.8	6.51 ± 2.8	2.45 ± 1.7	4.15 ± 3.4
Etiology						
Unknown	56 (12.7)	417 (61.8)	32 (22.5)	7 (9.9)	3 (2.7)	515 (35.8)
Trauma	10 (2.3)	59 (8.8)	0	6 (8.5)	81 (72.3)	156 (10.8)
LS	107 (24.4)	0	69 (48.6)	17 (23.9)	0	193 (13.5)
Other*	12 (2.7)	5 (0.7)	1 (0.7)	1 (1.4)	0	19 (1.3)
Iatrogenic	254 (57.9)	194 (28.7)	40 (28.2)	40 (56.3)	28 (25.0)	556 (38.6)
Iatrogenic subgroup						
Catheterization	71/234 (30.4)	117/234 (50)	23/234 (9.8)	20/234 (8.5)	3/234 (1.3)	234/556 (42.1)
TS	43/131 (32.9)	59/131 (45)	10/131 (7.6)	8/131 (6.1)	11/131 (8.4)	131/556 (23.6)
HR	140/176 (79.6)	17/176 (9.6)	7/176 (4)	12/176 (6.8)	0	176/556 31.6)
Other†	0	1/15 (7)	0	0	14/15 (93)	15/556 (2.7)
Previous treatment	349 (79.5)	497 (73.6)	110 (77.5)	58 (81.7)	46 (41.1)	1060 (73.7)

HR, hypospadias repair; LS, lichen sclerosus; TS, transurethral surgery.
Data presented as mean ± standard deviation or n (%).
* Congenital, infection, tumor.
† Radiotherapy, prostate adenomectomy, prostatectomy.

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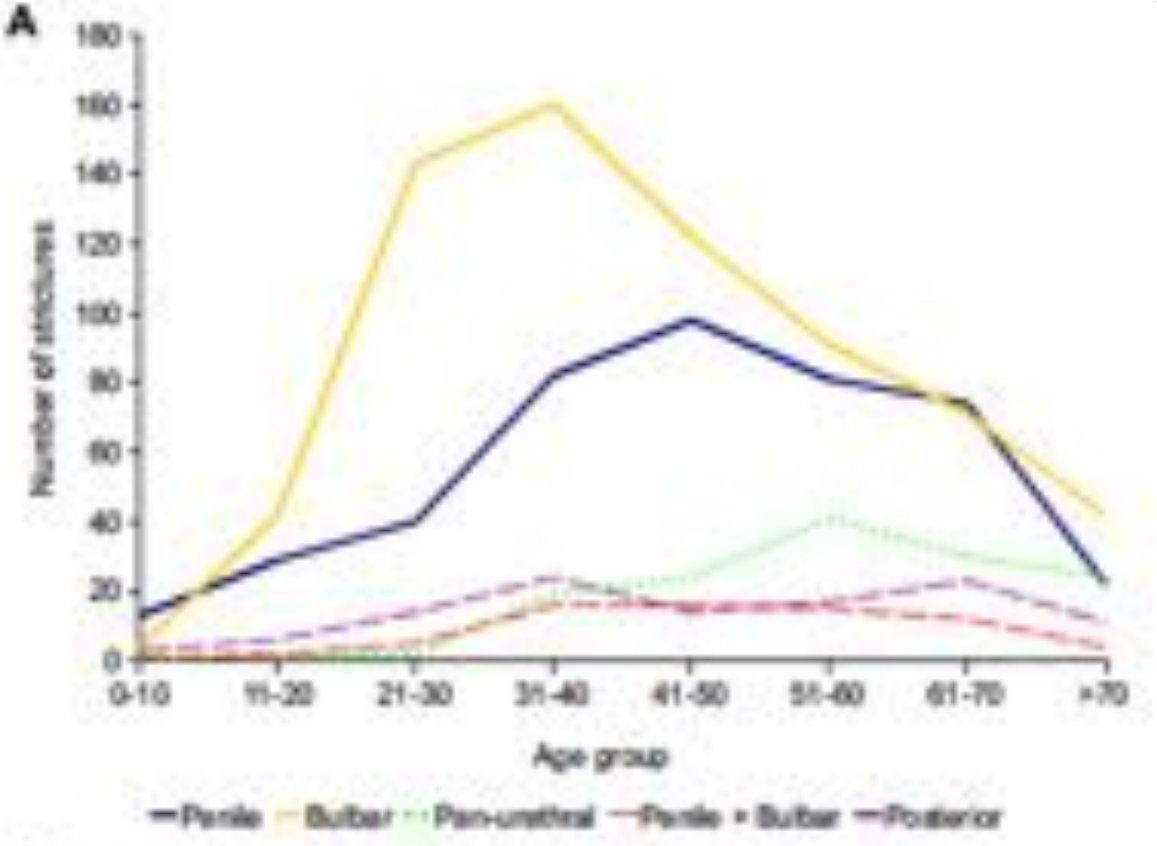
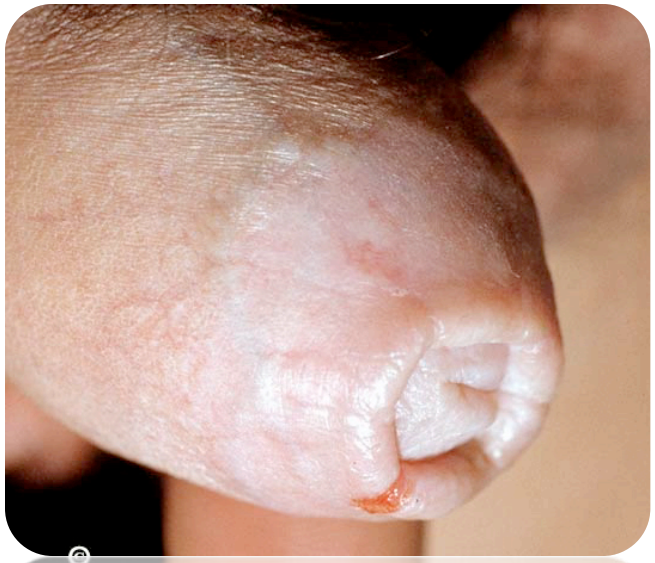


Estenoses Panuretrais

= Estenoses complicadas...

ETIOLOGIA

1. Cirurgia(s) uretral(is) prévia(s)
2. Instrumentação prévia
3. Doença extensa (*Lichen sclerosus*)
4. Radioterapia

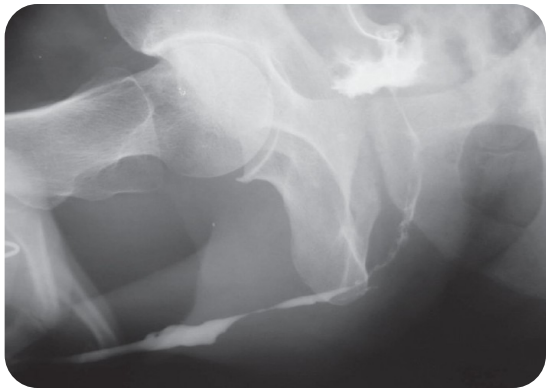


ESPONGIOFIBROSE

Estenoses Panuretrais

TRATAMENTO INDIVIDUALIZADO

1. Etiologia
2. História de cirurgia uretral prévia
3. Disponibilidade tecidular para retalhos locais
4. Disponibilidade de enxertos autólogos
5. Experiência do cirurgião
6. Falência de uretroplastia prévia
7. Qualidade do leito uretral



Apul Goel et al., "Management of Panurethral Strictures." Indian J Urol. 2011 Jul-Sep; 27(3): 378–384.

Estenoses Panuretrais

RETALHOS

1. ***McAninch and Morey flap*** (fasciocutâneo circular peniano) **12-15 cm**
2. ***Q-Flap*** (McAninch com prolongamento ventral longitudinal) **15-24 cm**
3. ***Flap Biaxial Escrotal Epilado***

* ≤ 20 mm de diâmetro
* Vascularização própria
* Utilização "dorsal onlay" superior à tubularização

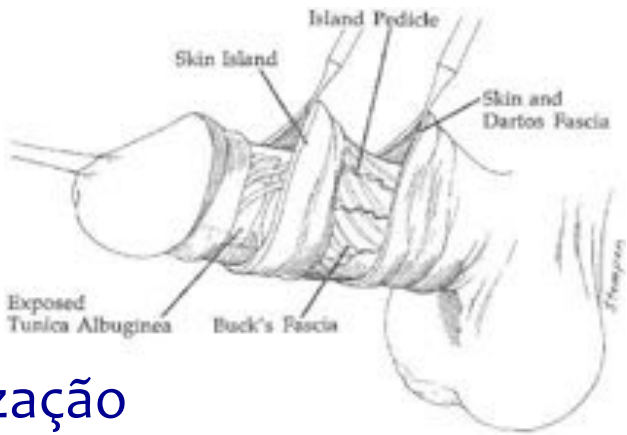


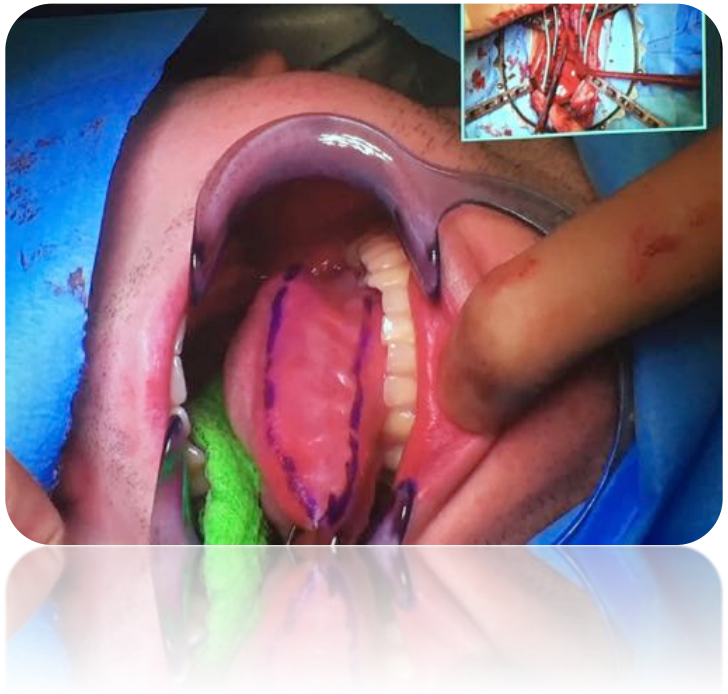
FIG. 14.6. Technique of harvest of the McAninch flap

Apul Goel et al., "Management of Panurethral Strictures." Indian J Urol. 2011 Jul-Sep; 27(3): 378–384.

Estenoses Panuretrais

ENXERTOS

1. *Enxerto de mucosa oral (BMG)*
2. *Mucosa vesical*
3. *Enxerto cutâneo livre (full-thickness)*
4. *Pele retroauricular*
5. *Apêndice ileo-cecal e mucosa do cólon*
6. *Veia safena*
7. *Ureter*



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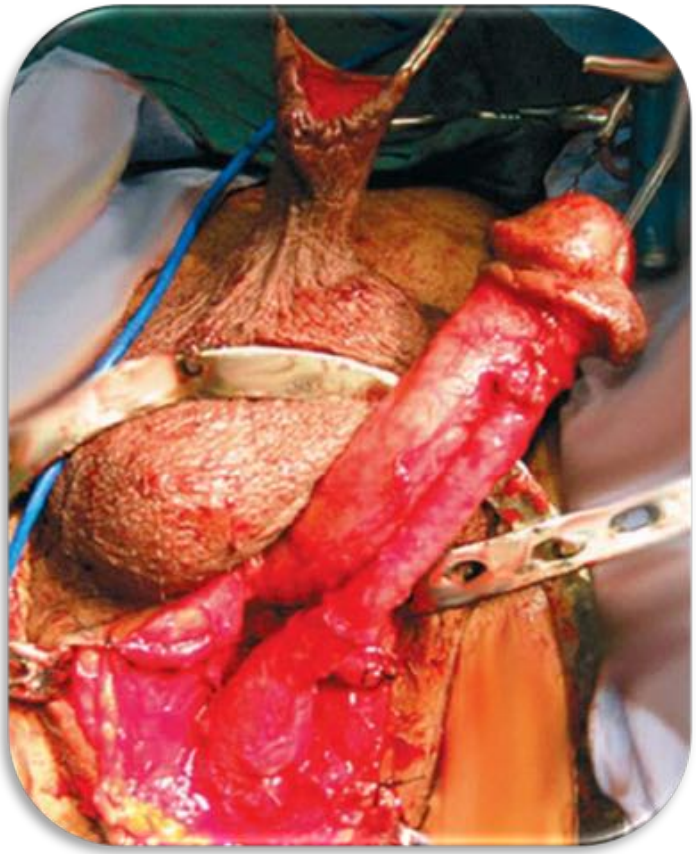
Uretroplastia BMG Dorsal com Incisão Perineal

One-Stage Transperineal Repair of Pan-Urethral Stricture With Dorsally Placed Buccal Mucosal Grafts
Results, Complications, and Surgical Technique

Kamyar Tavakkoli Tabassi,[1] Ehsan Mansourian,[2] Aliasghar Yarmohamadi[2]

Urology Journal | Vol 8 | No 4 | Autumn 2011

1. ***Degloving* e exteriorização perineal**
2. Separação do corpo esponjoso
3. Incisão dorsal longitudinal uretra
4. Enxerto BMG dorsal
5. Tubularização da uretra



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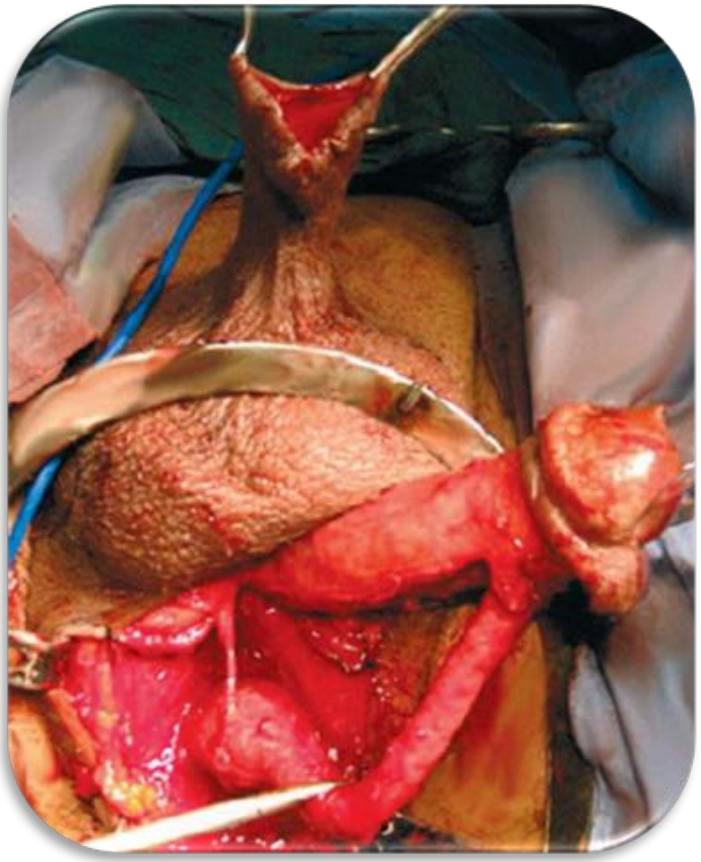

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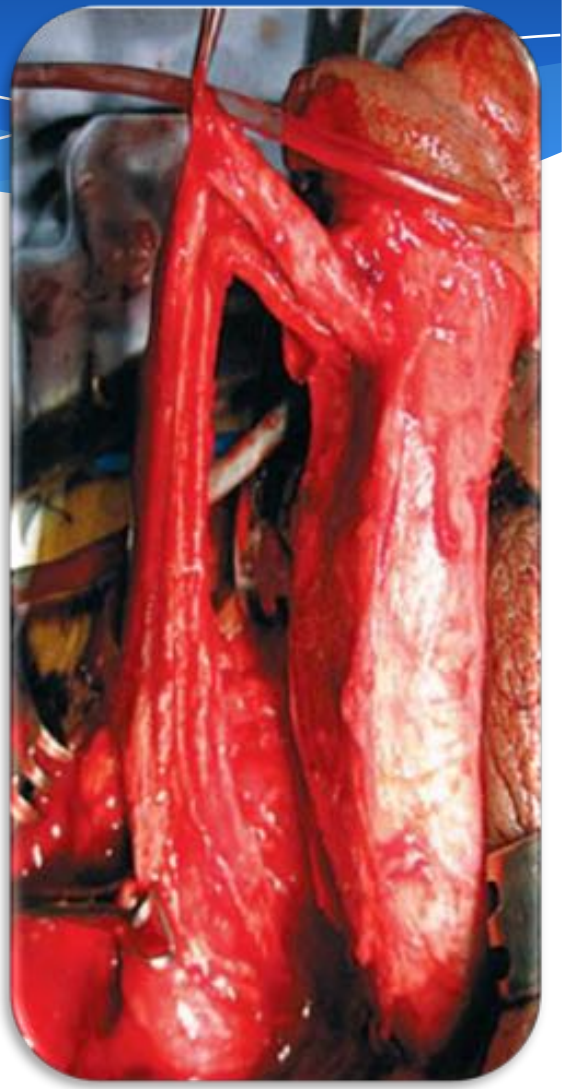

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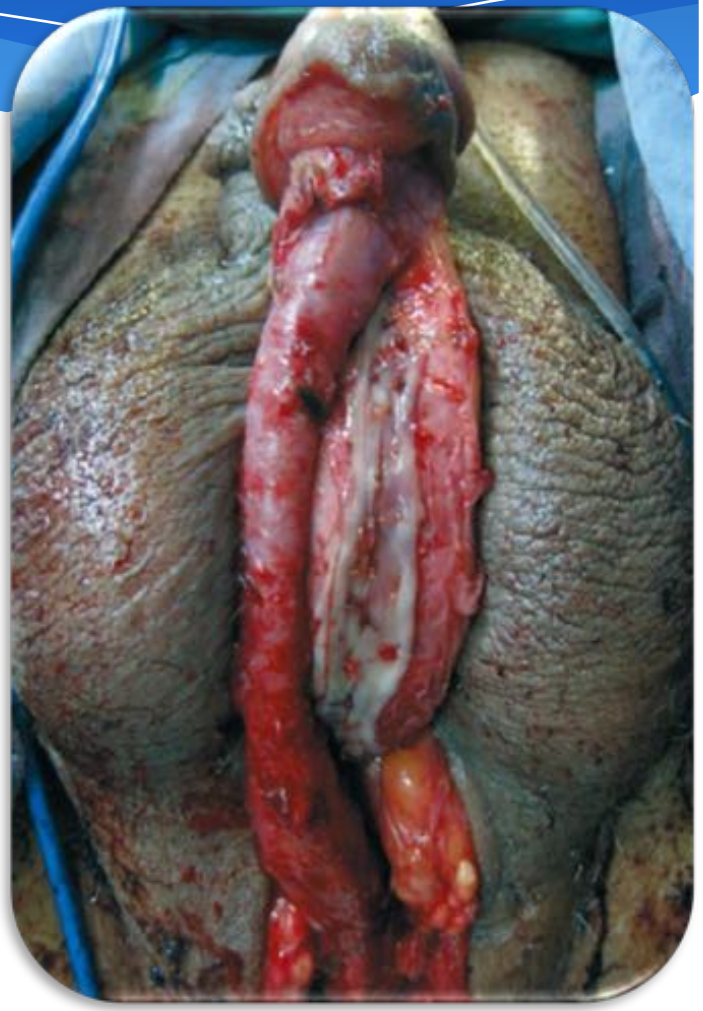

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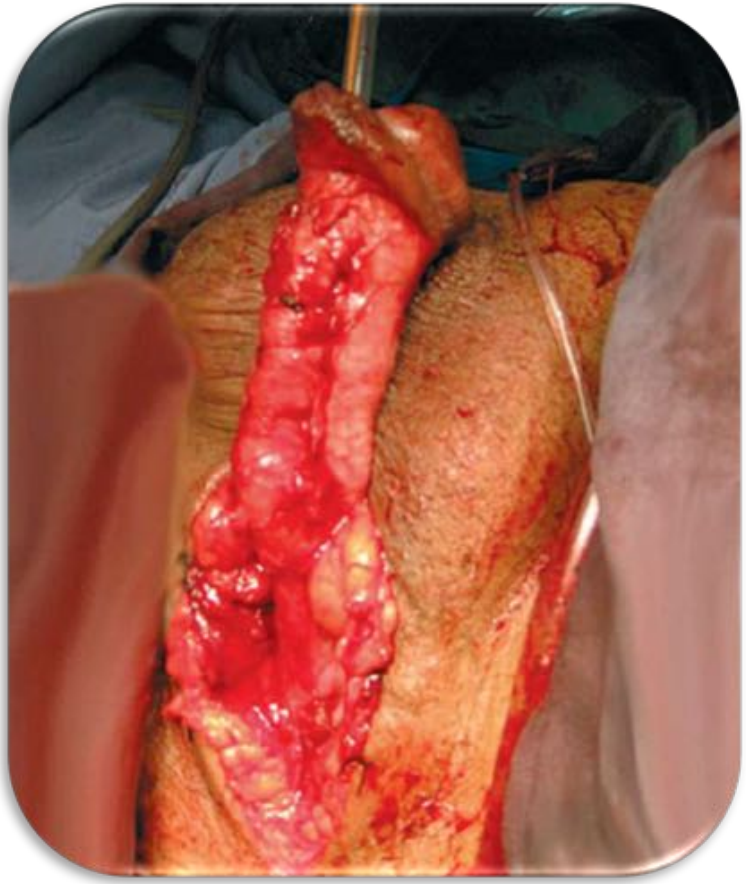

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* n = 17 com estenoses panuretrais (idade média: 43) 20,7 ±4,6 cm
* *Follow-up* médio 8,5 meses → sucesso 88,2%

COMPLICAÇÕES	n	%
Infecção da ferida operatória	2	11,8%
Estenose do meato	1	5,9%
Re-estenose ("ring-shaped")	3	17,7%
TOTAL	6	35,3%

* **Não se verificaram:** hematomas escrotais, *chordee* ou deformidades penianas, disfunção eréctil, incontinência urinária, divertículos uretrais ou disfunção miccional

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Indian J Urol. 2009 Apr-Jun; 25(2): 211–214.
doi: 10.4103/0970-1591.52919

PMCID: PMC2710067

Dorsolateral onlay urethroplasty for anterior urethral strictures by a unilateral urethral mobilization approach

Bhupendra P. Singh, Hemant R. Pathak, and Mukund G. Andankar

* 17 doentes**: 8 com estenoses panuretrais**
* Extensão média: 8,6 cm
* *Follow-up* médio 19 meses: 88% sucesso e taxa de satisfação 94%
* Apenas 1 doente com estenose proximal → uretrotomia interna

Success was defined as a maximum flow rate of ≥15 ml/sec., sterile urine, normal urethral imaging (retrograde urethrogram), and/or urethroscopy (with a 19 fr. sheath).

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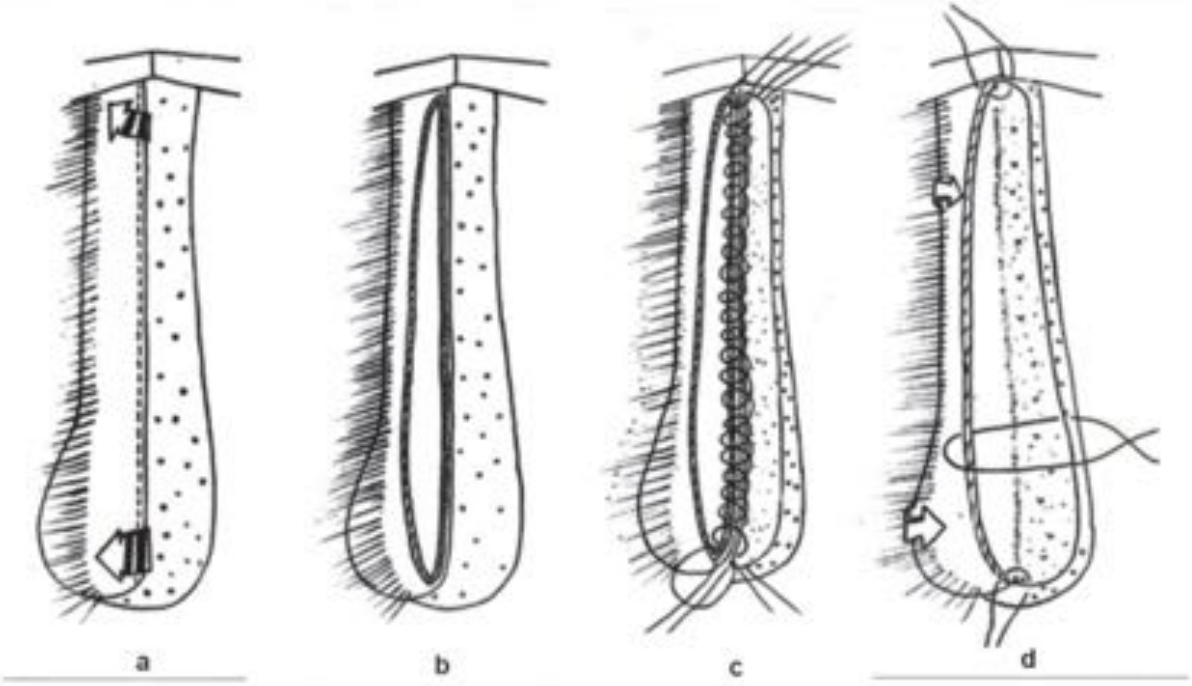
Vascularização

Inervação



(a) Limited urethral mobilization from midline ventrally to beyond midline dorsally, (b) urethral incision at dorsal midline (12 O'clock), (c) graft sutured to medial (right) urethral margin, and (d) graft sutured to lateral (left) urethral margin

Management of Panurethral Stricture Disease in India

Sanjay Balwant Kulkarni, Pankaj M. Joshi and Krishnan Venkatesan

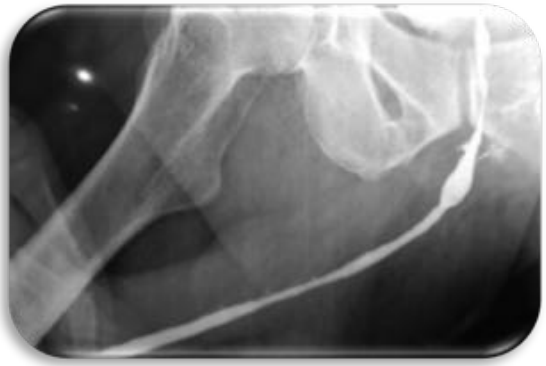
From the Kulkarni Reconstructive Urology Center, Pune, Maharashtra, India

THE JOURNAL of UROLOGY®

Official Journal of the American Urological Association

http://dx.doi.org/10.1016/j.juro.2012.05.020
Vol. 188, 824-830, September 2012

* 10% da prática clínica dos urologistas
* Estenoses panuretrais na Índia: +++ *Lichen sclerosus*
* Estudo retrospectivo: 117 doentes (1998-2010) → 70% LS
* **Uretroplastia 1 tempo com BMG, incisão perineal**
* Dissecção dorsolateral esquerda



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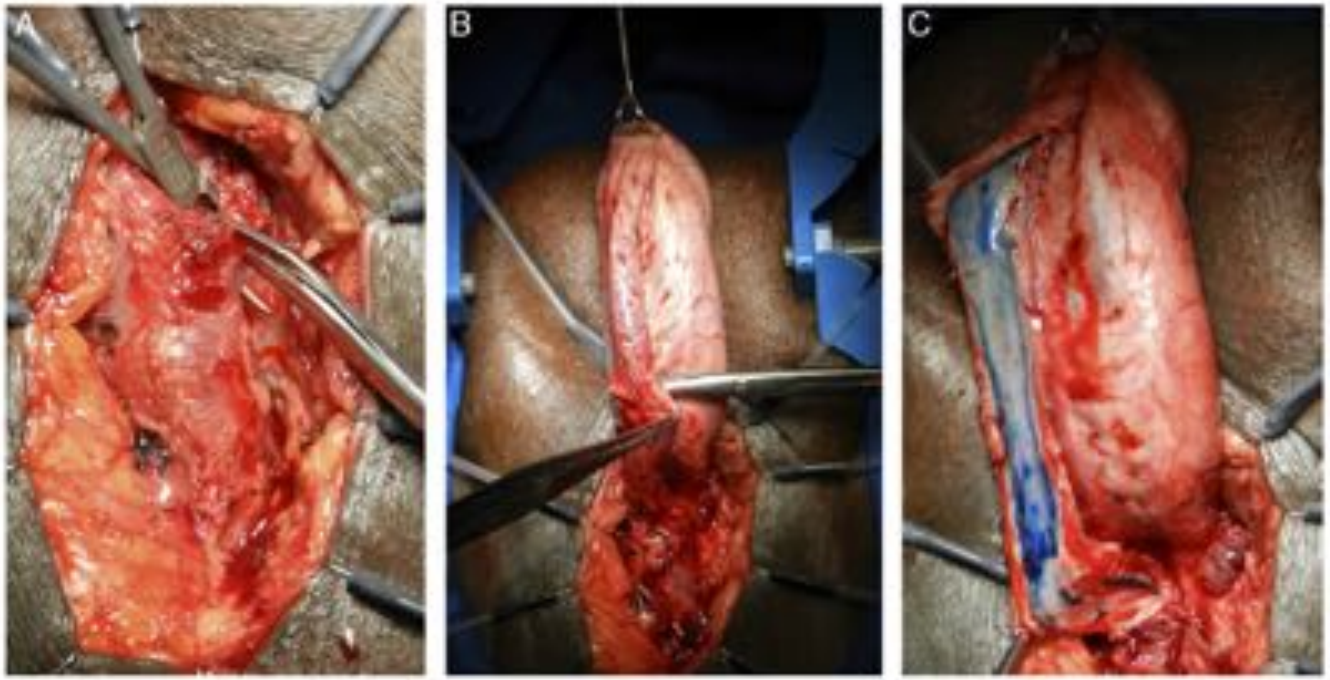

Figure 2. *A*, 1-side dissection of bulbar urethra. Proximal two-thirds of bulbospongiosus remains intact. Distal third of bulbospongiosus, which attaches to corpus cavernosum, is incised. *B*, 1-side dissection of entire anterior urethra. *C*, urethra opened along dorsal aspect longitudinally.

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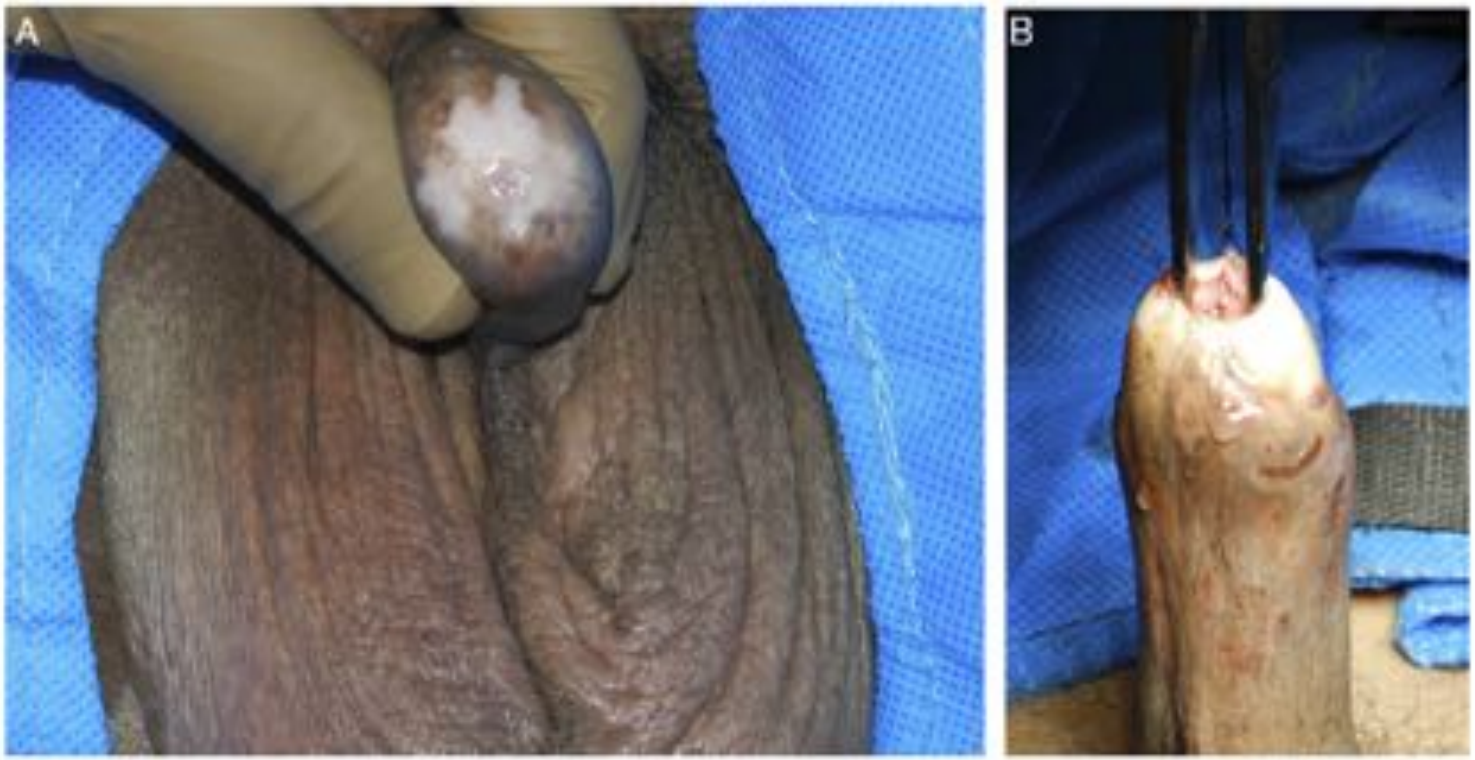

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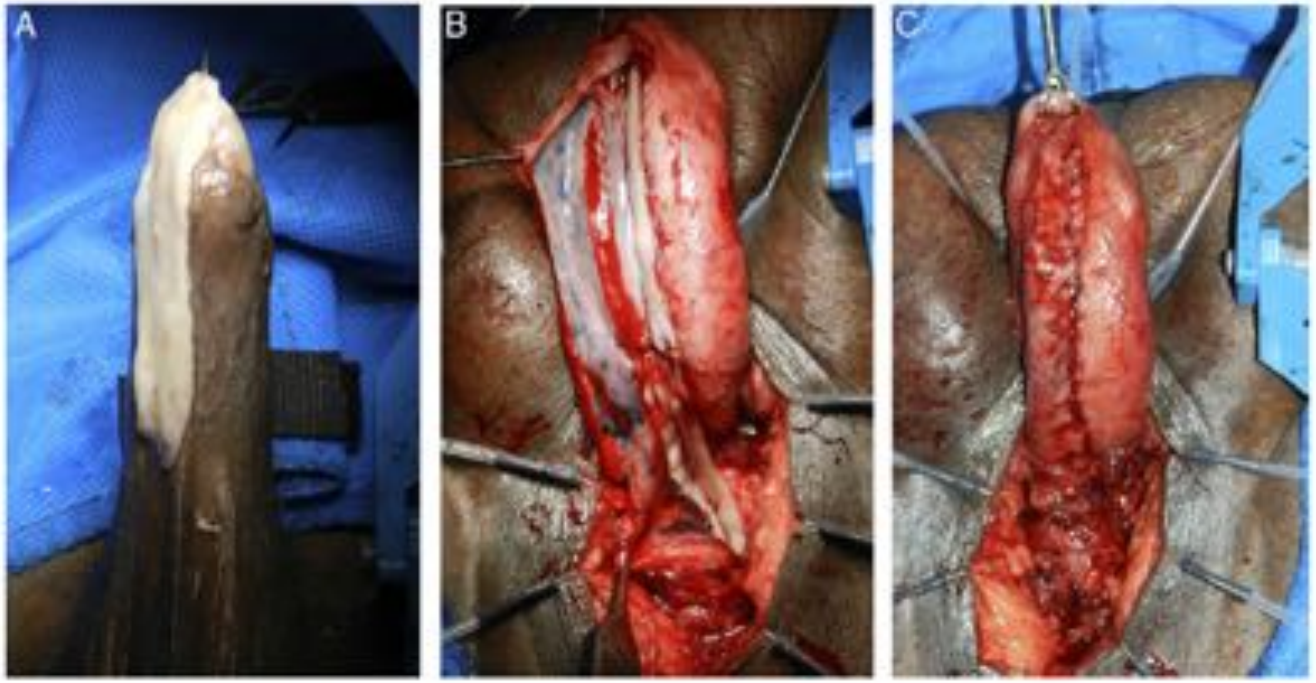

Figure 4. *A*, oral mucosa graft secured to meatal apex. *B*, grafts spread and fixed dorsally. One graft each is placed opposite penile and bulbar urethra. *C*, urethra rotated back into position over grafts.

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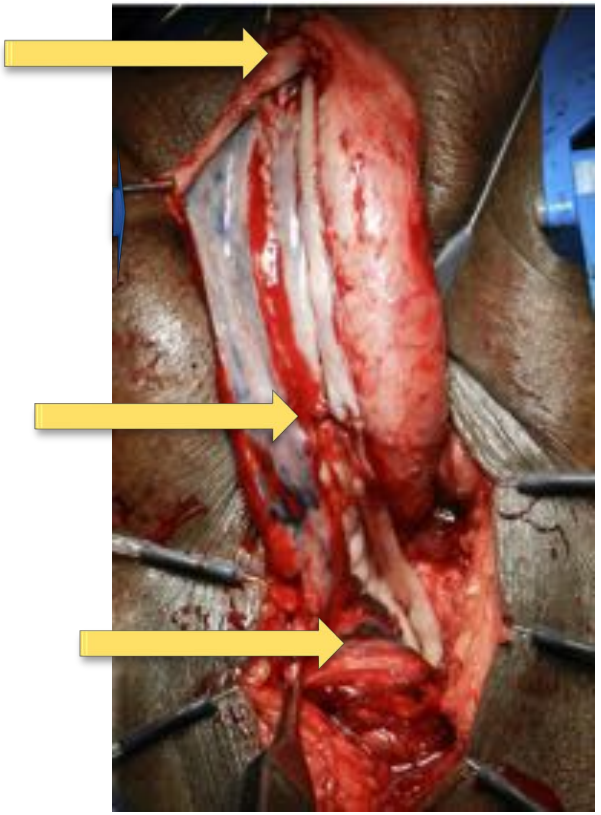
- *Follow-up* médio **59 meses**
- Taxa de sucesso: **83,7%** (n= 98)
- Locais de recidiva (n=19)
  1. Meato uretral
  2. Junção de enxertos
  3. Zona proximal do enxerto (+++)
- **BMG faces laterais da boca ou língua**



Uretroplastia BMG Dorsolateral com Incisão Perineal

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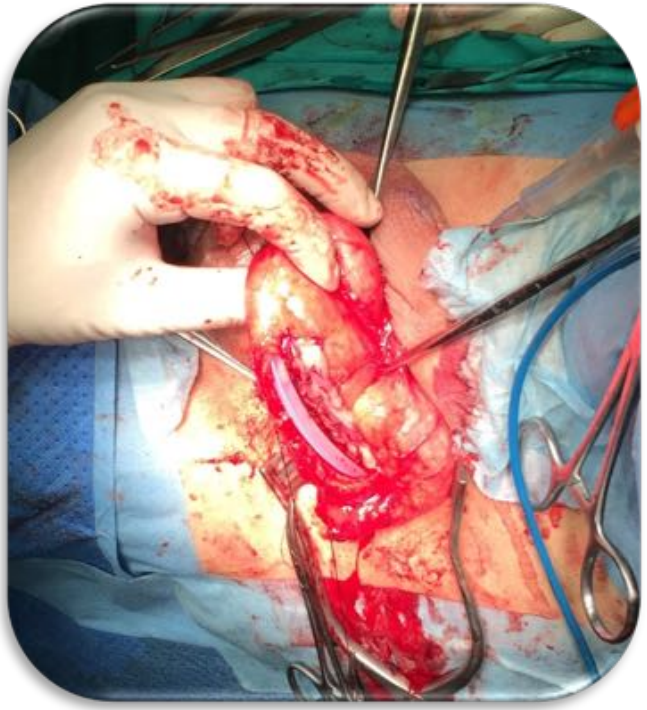
BMG DORSOLATERAL, INCISÃO PERINEAL

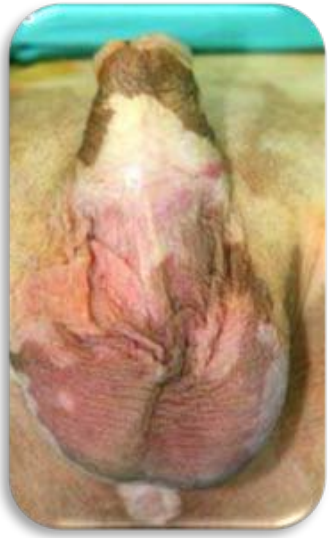
* Evita sutura peniana
* Redução do risco de fístulas uretrocutâneas
* Resultado cosmético melhorado
* Redução da probabilidade de *chordee*
* Preservação neurovascular
* Preservação do musculo bulboesponjoso e do tendão central do períneo

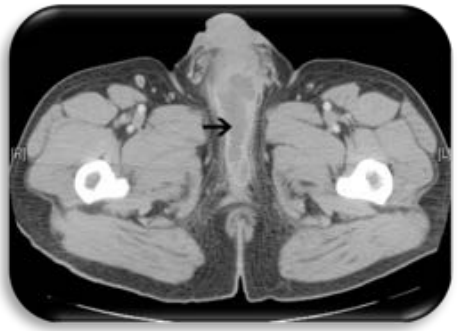


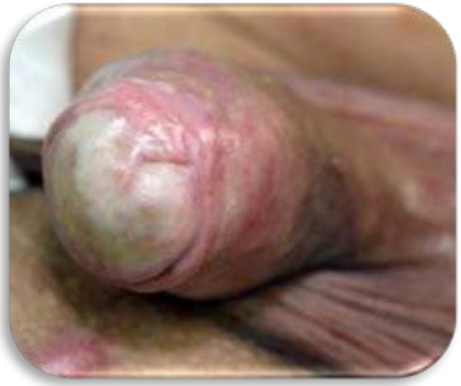
- Menos *dribbling* e compromisso ejaculatório pós-operatório

Uretroplastias "Multistaged"

1. Pele disponível escassa
2. Tecido cicatricial abundante
3. Prato uretral não preservável
4. Uretra com calibre < 6Fr
5. Segmentos obliterados
6. Vascularização pobre / RT prévia
7. Complicações:
    * Infecção periuretral / Abcessos
    * Litíase





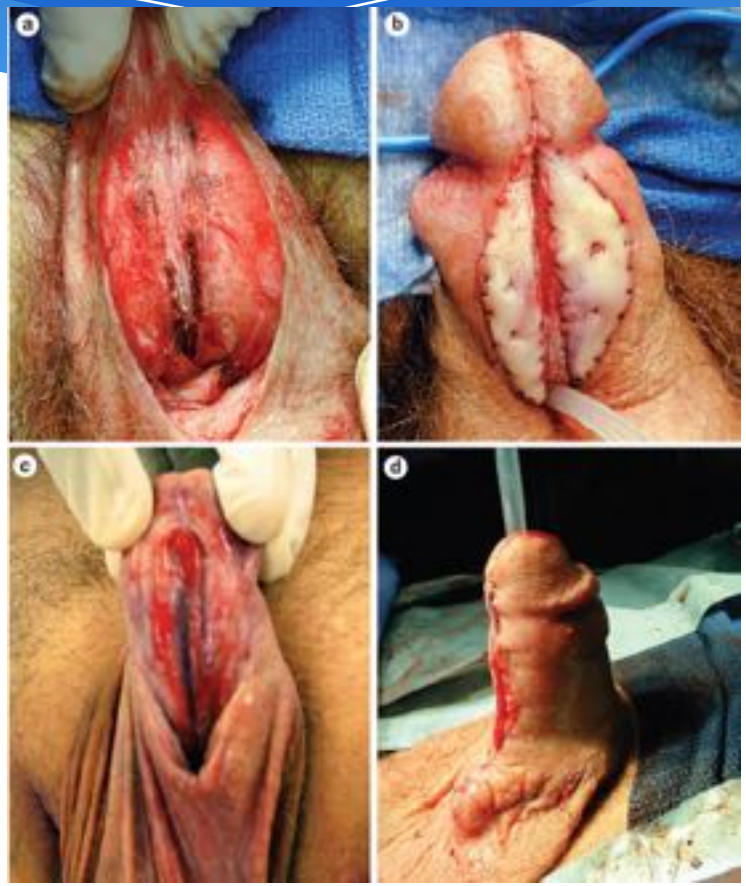


1. Burks & Santucci, "Complicated Urethroplasty: A Guide for Surgeons." Nat. Rev. Urol. 7, 521–528 (2010)
2. Barbagli, De Angelis, Palminteri & Lazzeri, "Failed hypospadias repair presenting in adults". Eur. Urol. 49, 887–894 (2006)

Uretroplastia de Johanson

* Descrita em 1953
* Inicialmente com uso de pele local
* Posteriormente com BMG
* Atualmente, segunda linha

* Utilização de mucosa jugal preferencial
* Manutenção do prato uretral
* Enxerto em localização dorsal
* Megameato



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Tunica Albuginea Urethroplasty for Panurethral Strictures

Raj K Mathur, Adittya Sharma

Urology Journal | Vol 7 | No 2 | Spring 2010

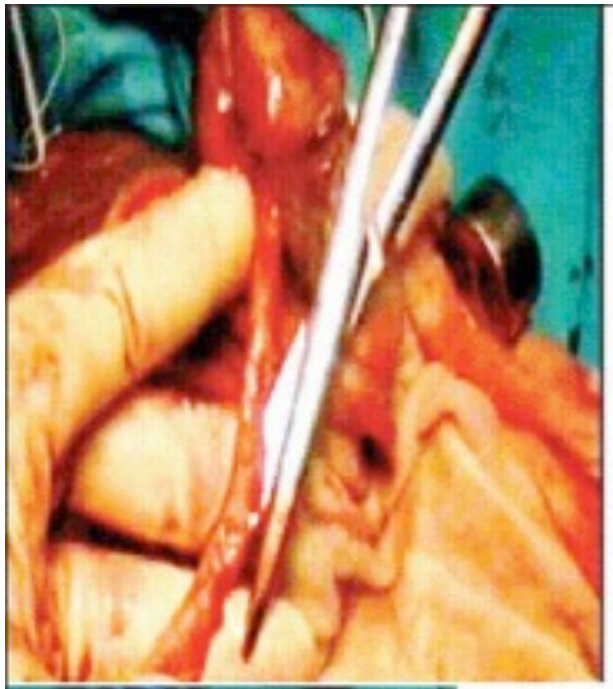
Table 3. Results of urethroplasty at different follow-up periods

Results	6 Months	12 Months	24 Months	36 Months
Good	75 (87.2%)	74 (86.0%)	72 (83.7%)	72 (83.7%)
Fair	07 (8.1%)	06 (7.0%)	06 (7.0%)	05 (5.8%)
Poor	04 (4.7%)	06 (7.0%)	08 (9.3%)	09 (10.5%)

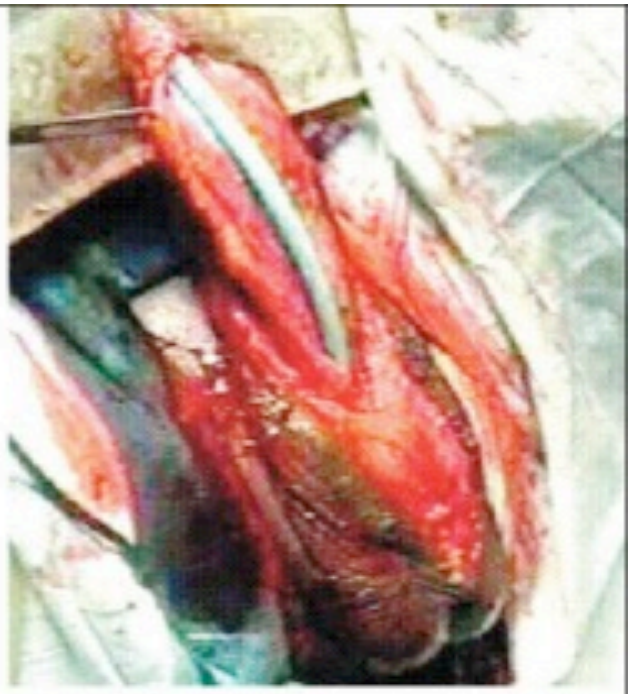
Table 1. Postoperative Result Assessment Criteria

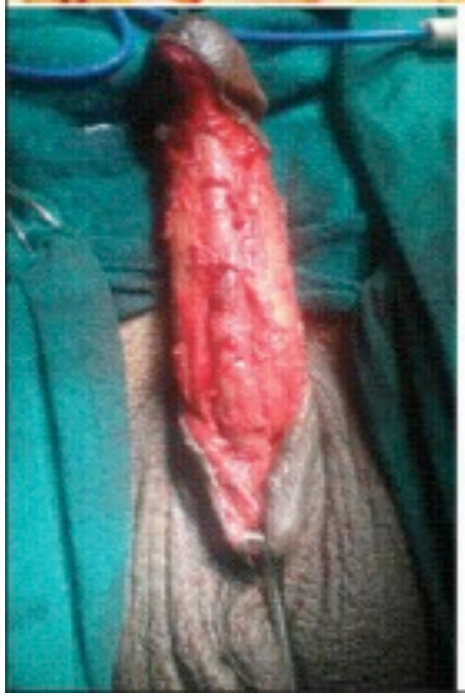
	Good	Fair	Poor
Retrograde urethrography	Good caliber	Partial narrowing at stricture site	Persistent stricture
Urethro-sonography	Patent and distensible lumen	Patent lumen with decreased distensibility	Stricture present
Uroflowmetry	Qmax >20 mL/s	Qmax 15 to 20 mL/s	Qmax <15 mL/s
Patient's satisfaction	Satisfactory voiding, no instrumentation needed	Satisfactory voiding, but Required ≤ 1 dilatation per year	Not satisfied, not voiding or voiding with thin stream, needed multiple dilatations or repeat surgery

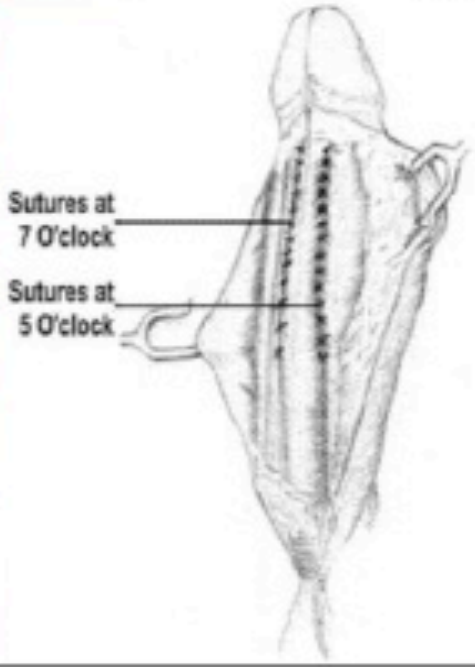
Monseur J. [A new procedure for urethroplasty for urethral stricture: reconstruction of the urethral canal by means of suburethral strips and the subcavernous groove]. J Urol Nephrol (Paris). 1969;75:201-9.

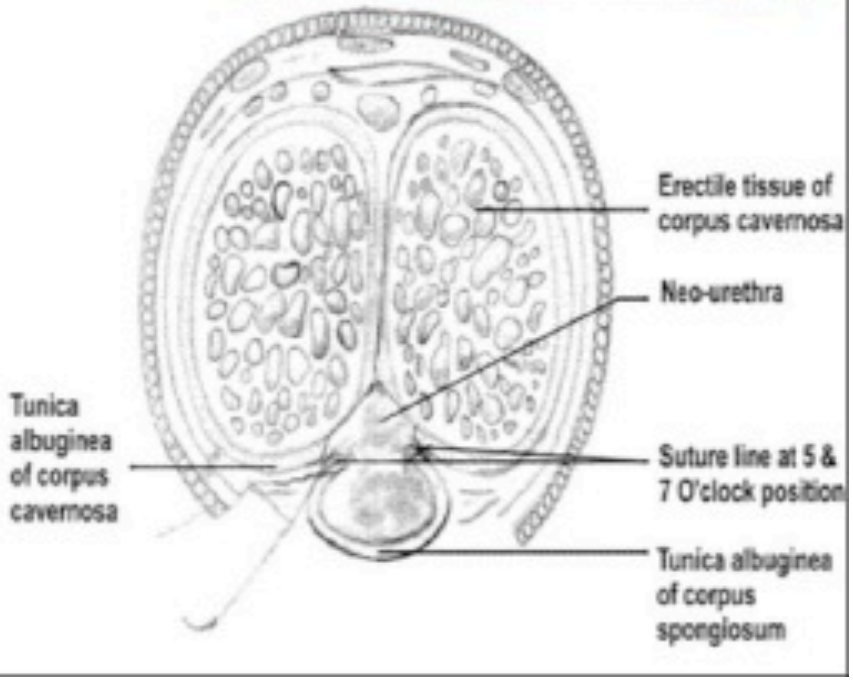



Open urethral lumen






Sutures at 7 O'clock
Sutures at 5 O'clock


Erectile tissue of corpus cavernosa
Neo-urethra
Tunica albuginea of corpus cavernosa
Suture line at 5 & 7 O'clock position
Tunica albuginea of corpus spongiosum

The relationship between erectile function and complex panurethral stricture: a preliminary investigative and descriptive study

Asian Journal of Andrology (2015) **17**, 315–318

Hong Xie, Yue-Min Xu, Qiang Fu, Ying-Long Sa, Yong Qiao

Table 2: Comparison of the Q_{max}, QoLQ, and IIEF-5 scores before and after urethroplasty in 55 patients with panurethral stricture

	Before surgery	3 months after surgery	6 months after surgery	12 months after surgery
Qmax (ml s^{-1})	2.49±1.23	21.38±4.83*	21.94±4.61	20.32±3.17
Anterior urethral strictures (*n*=36)	5.63±2.53	23.07±5.80*	23.67±5.38	23.94±4.52
Multi-site strictures (*n*=29)	2.49±1.25	19.37±1.96*	19.80±1.93	19.46±2.86
QoL score	5.73±0.68	1.72±0.58*	2.05±0.84	1.88±0.39
Anterior urethral strictures (*n*=36)	5.48±059	1.68±0.57*	2.19±0.97	2.25±0.43
Multi-site urethral strictures (*n*=29)	6.05±0.65	1.77±0.60*	1.87±0.40	1.81±0.52
IIEF-5 score	13.48±6.83	11.81±6.79	12.34±6.87	12.34±6.87
Anterior urethral strictures (*n*=36)	12.47±5.69	15.64±8.64	16.41±5.21	16.38±4.93
Multi-site urethral strictures (*n*=29)	15.27±7.73	4.38±3.73*	9.45±1.84[#]	10.67±1.72

*Comparison of the preoperative and 3 months postoperative conditions ($P<0.05$); [#]Comparison of the 3 and 6 months postoperative conditions ($P<0.05$). QoL: quality of life; QoLQ: quality of life questionnaire; IIEF-5: International Index of Erectile Function-5

Uretrostomia Perineal "de Resgate"

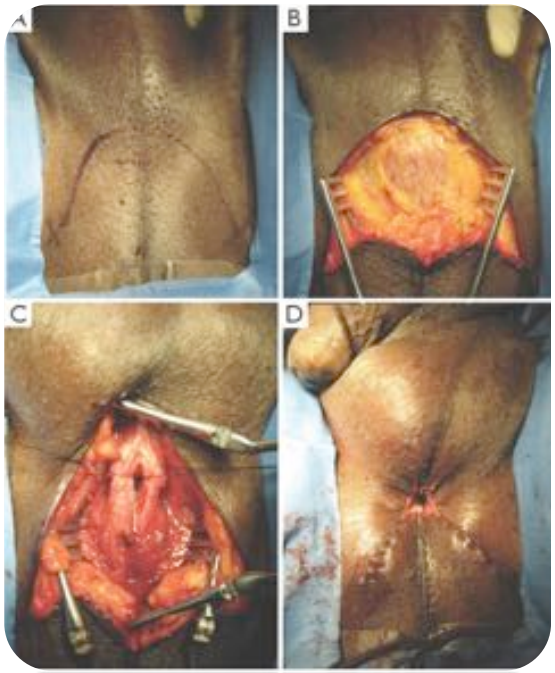
HEROIC MEASURES MAY NOT ALWAYS BE JUSTIFIED IN EXTENSIVE URETHRAL STRICTURE DUE TO LICHEN SCLEROSUS (BALANITIS XEROTICA OBLITERANS)

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

UROLOGY 64 (3), 2004

Le meglio è l'inimico del bene

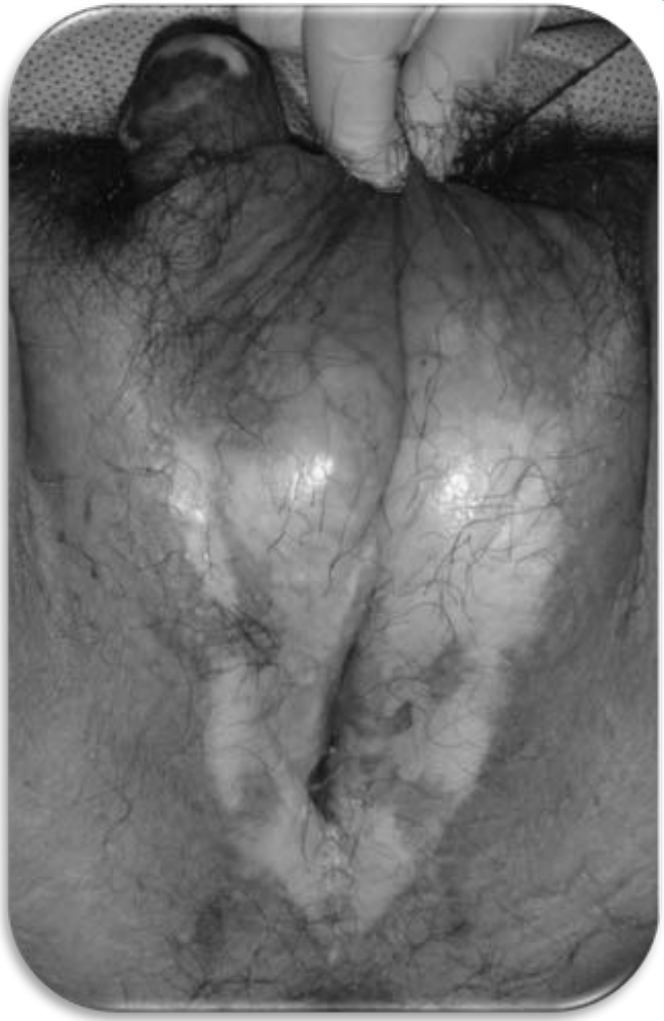
Voltaire *in* Dictionnaire Philosophique, 1770



* Doentes com estenoses extensas, complexas
* Leito uretral significativamente atrofiado
* Após falência de procedimentos múltiplos
* Comorbilidades
* Opção do doente
* **Qualidade de vida aceitável**

Burks & Santucci, "Complicated Urethroplasty: A Guide for Surgeons." Nat. Rev. Urol. 7, 521–528 (2010)

Uretrostomia Perineal "de Resgate"



CURRENT OPINION

Urethral reconstruction in lichen sclerosus

Enzo Palminteri[a], *Steven B. Brandes*[b], *and Miroslav Djordjevic*[c]

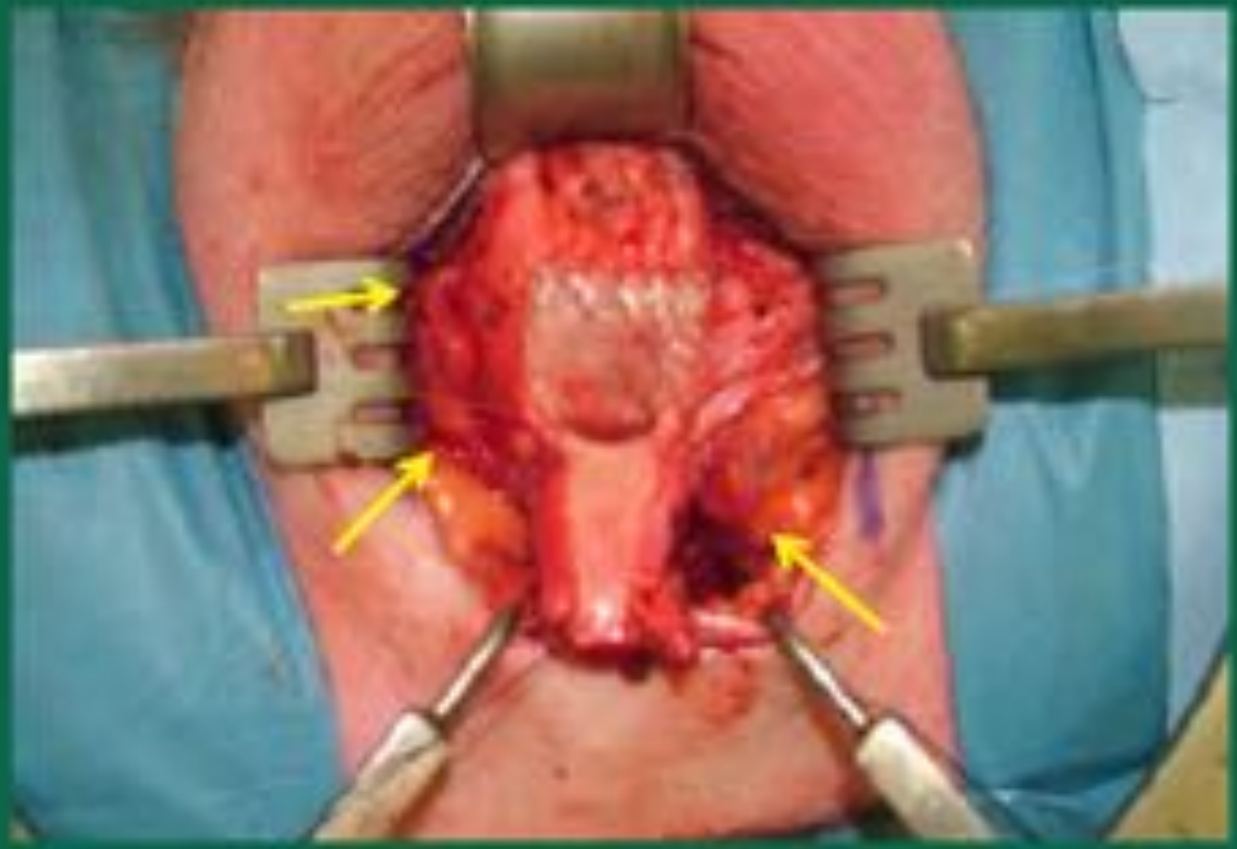
Volume 22 • Number 6 • November 2012

URETHROSTOMY for Lichen Sclerosus (LS) related PAN-URETHRAL stricture

- Patients with LS and complex urethral stricture treated **with a urethrostomy enjoy an excellent quality of life** (>97%) (Peterson et al, 2004, Barbagli et al., 2009)
- **BUT: Patency rates** of urethrostomies in LS are sub-optimal (~70%) (Kulkarni et al., 2008, Barbagli et al., 2009)

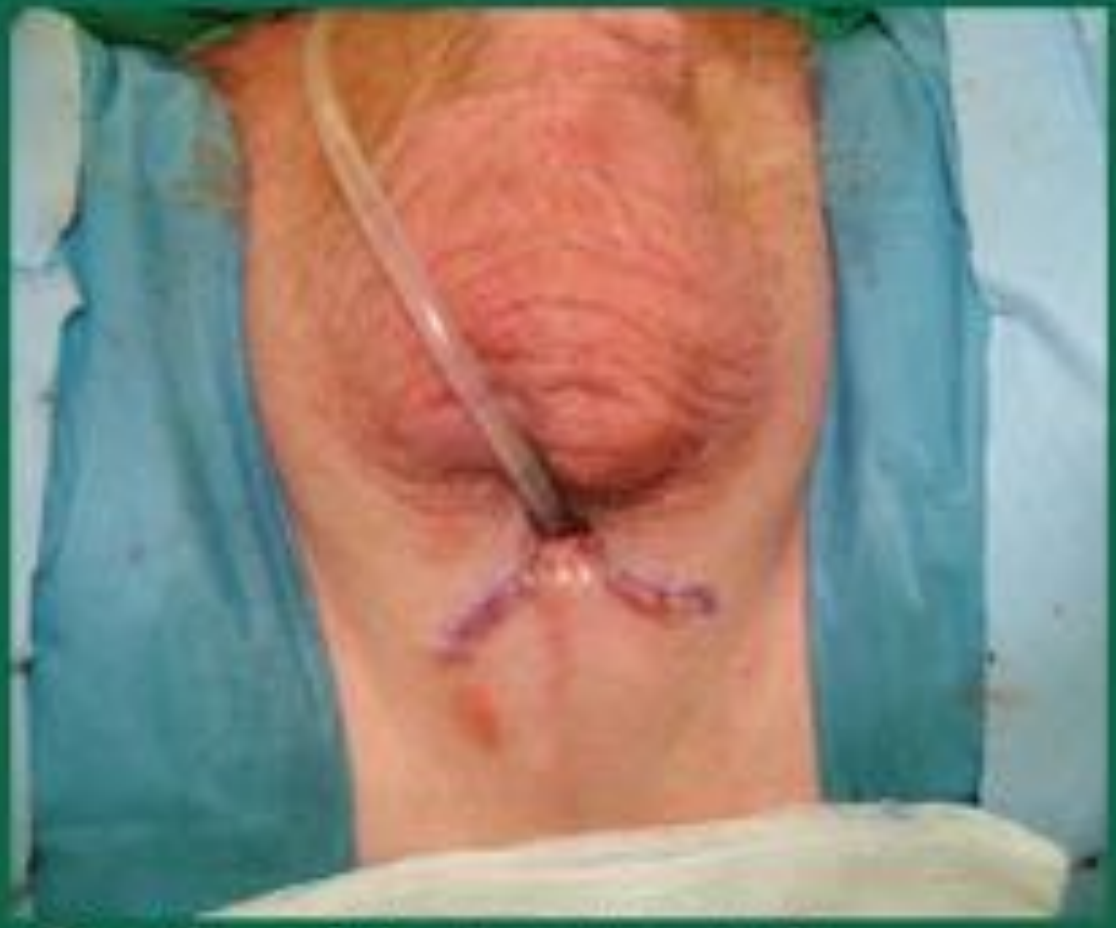
WHY NOT *use* ***buccal mucosa as an onlay to reconstruct a urethrostomy*** *in patients with LS-related pan-urethral stricture?*

The "Augmented Urethrostomy"



Transection of bulbar urethra and dorsal onlay grafting with buccal mucosa.

The "Augmented Urethrostomy"

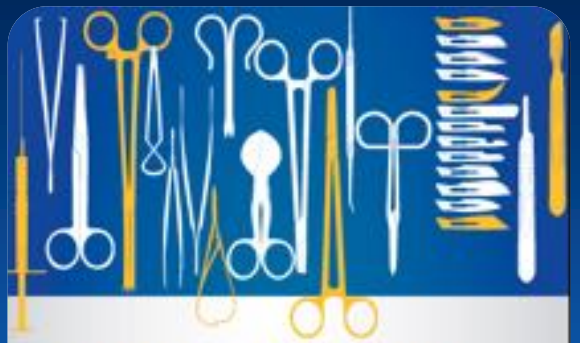


Creation of the "augmented urethrostomy" by advancing skin flaps to urethra and buccal mucosa

Take Home Messages

1. Estenoses panuretrais = **doença complexa**
2. Nenhuma técnica é universal → **tratamento individualizado**
3. **Uretroplastias em tempo único** são opção de primeira linha nas estenoses panuretrais
4. Como doença cutânea genital que é, **não devem** ser usados retalhos (enxertos) cutâneos no tratamento de estenoses por *Lichen sclerosus*
5. O dogma *Lichen sclerosus* = **Uretroplastia *multistaged* é relativo**
6. **Uretrostomia perineal** é sempre uma opção (…inicial ou de recurso)
7. O tratamento das estenoses (pan)uretrais tem, genericamente, **pouco impacto na função eréctil**

SOCIEDADE PORTUGUESA DE ANDROLOGIA



ESTENOSES PANURETRAIS

Leiria, 28 de Novembro de 2015

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