

Guido Barbagli

Center for Reconstructive Urethral Surgery

Arezzo - Italy

E-mail: guido@rdn.it

Website: www.urethralcenter.it

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Segovia - Spain



Center for Reconstructive Urethral Surgery



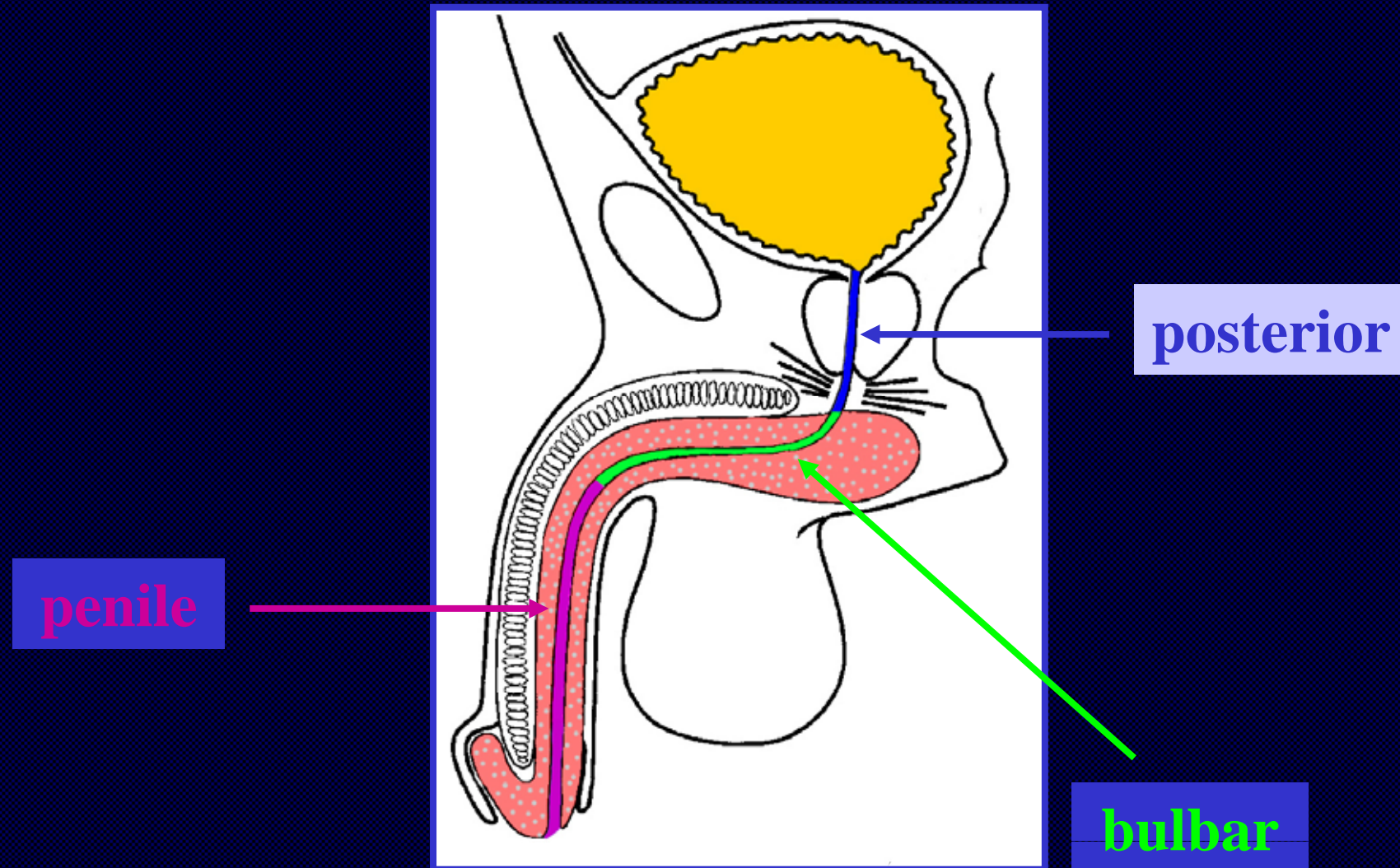
Urethral Surgery in Urology of the XXI Century



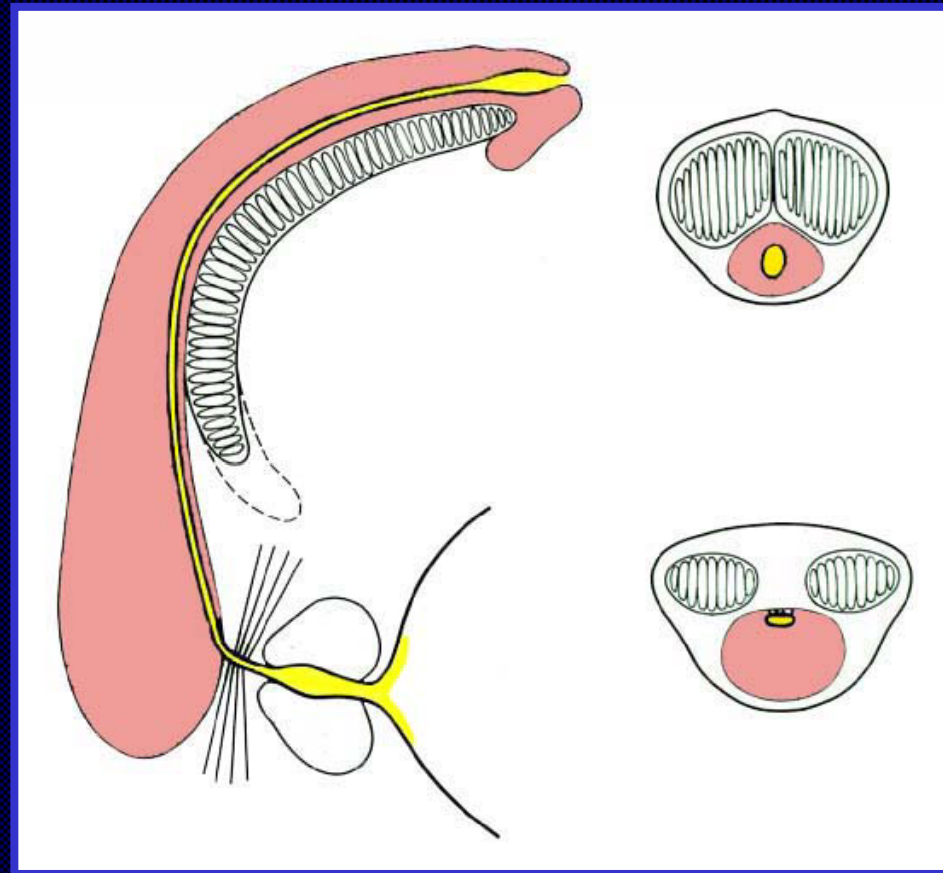
Center for Reconstructive Urethral Surgery



Anatomy of the male urethra



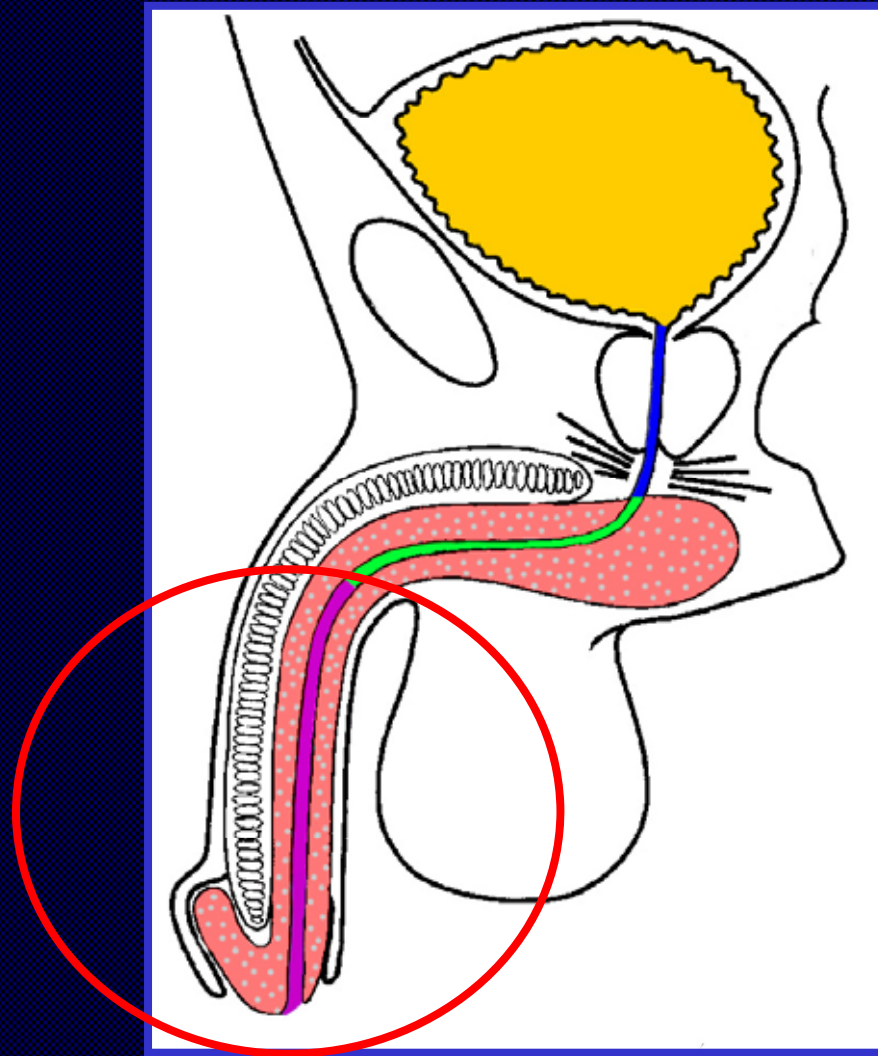
Anatomy of the male urethra



spongiosum tissue wrap the entire anterior mucosal urethra



Surgery of the penile urethra



Penile urethroplasty may be required in two different types of patients:



penis is normal



penis is abnormal

Penis is normal



glans
penile skin



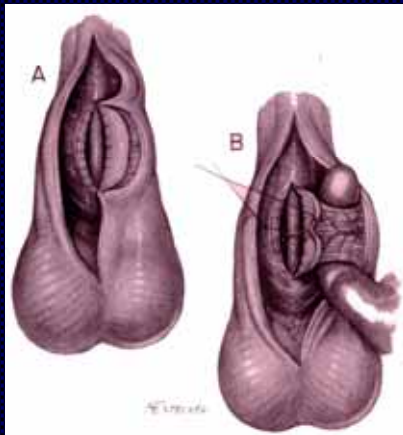
dartos fascia



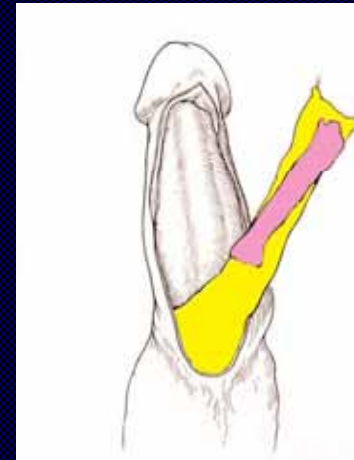
corpus spongiosum



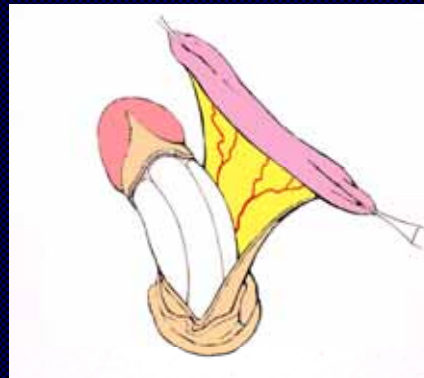
One-stage urethroplasty using dartos fascial flap with skin island



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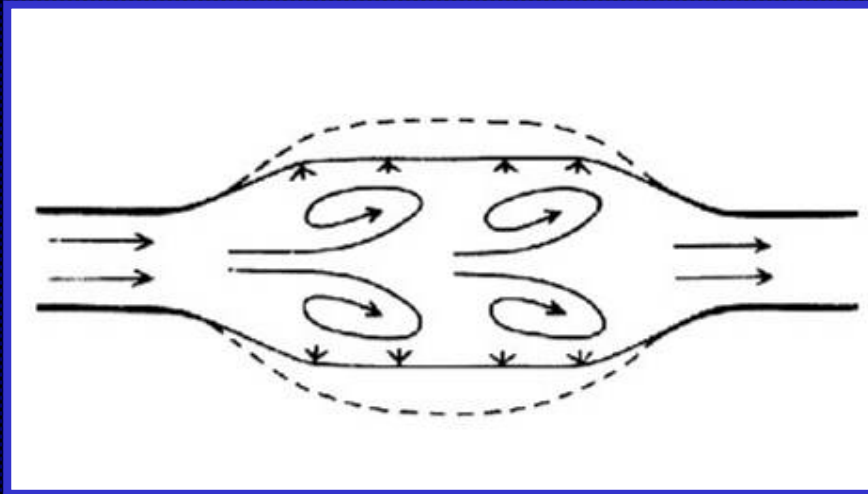


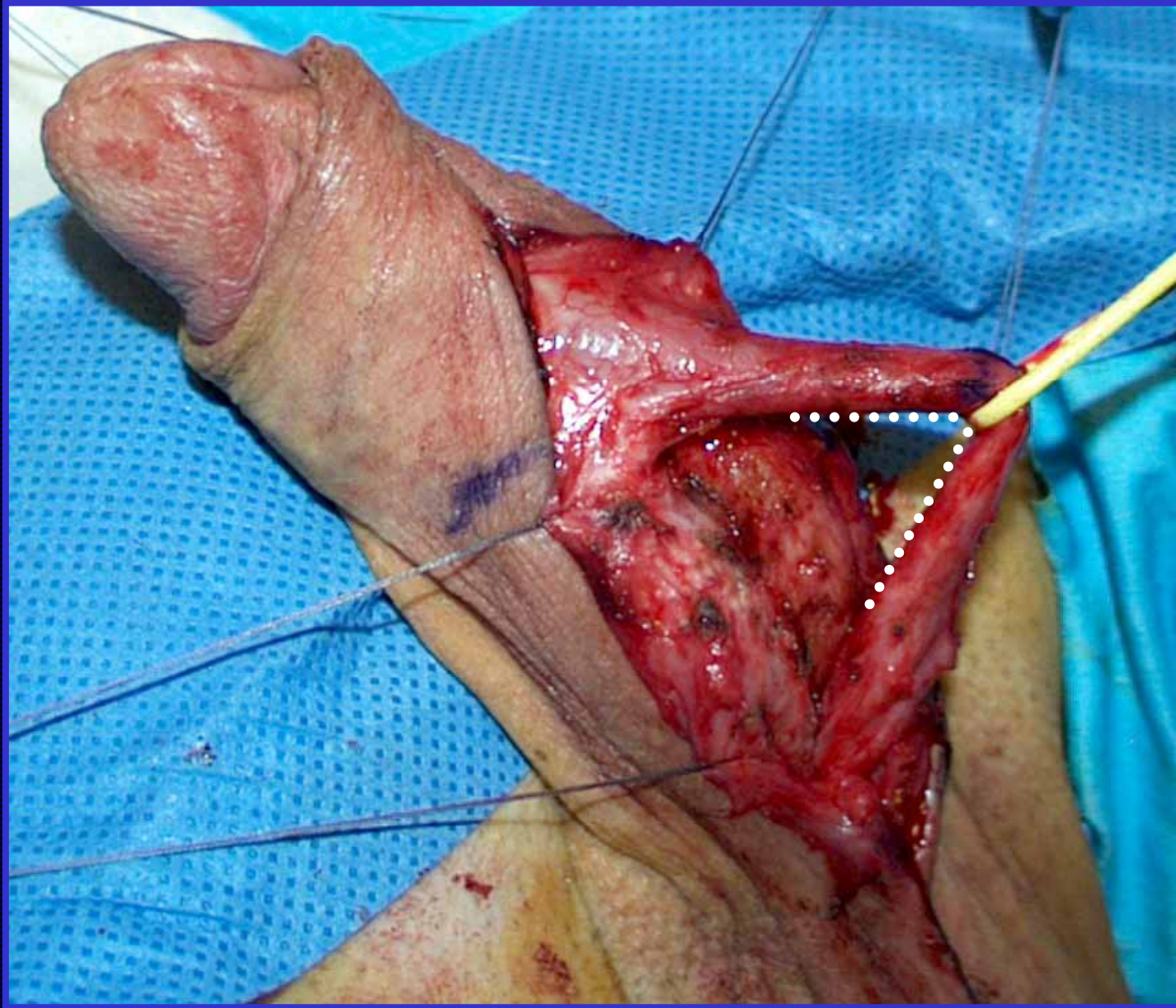
McANINCH

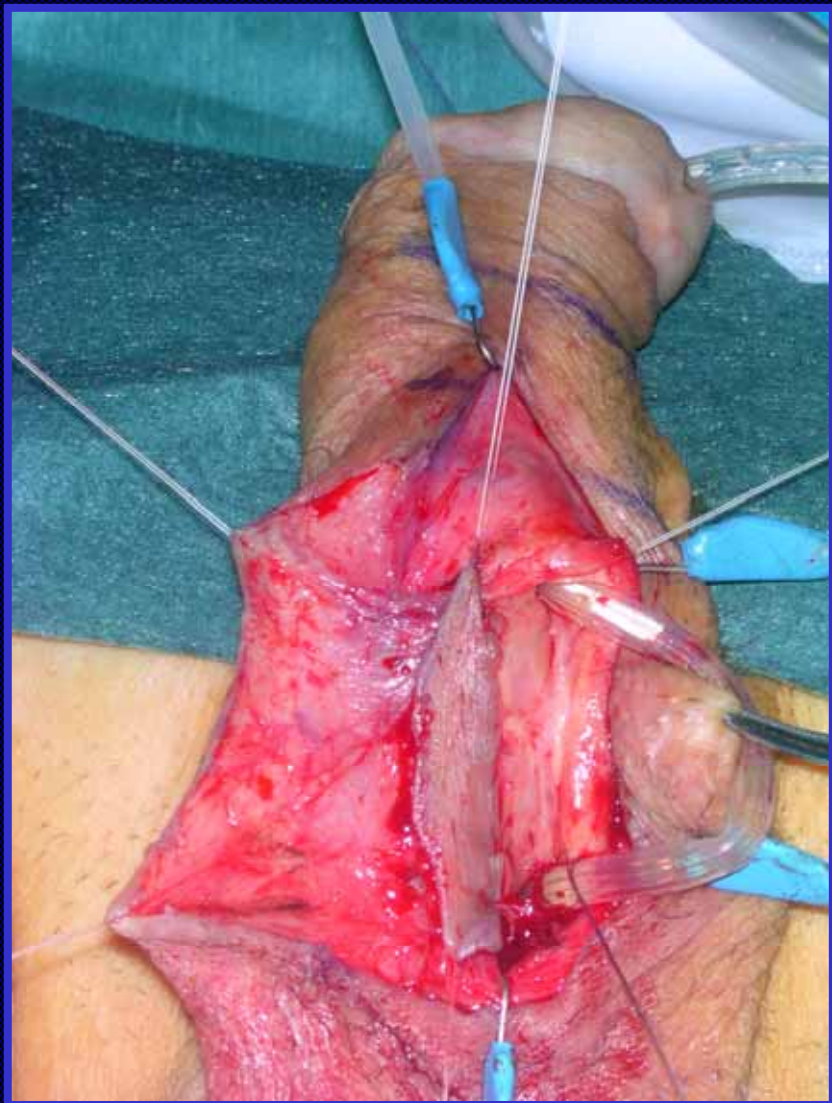
Orandi



Result





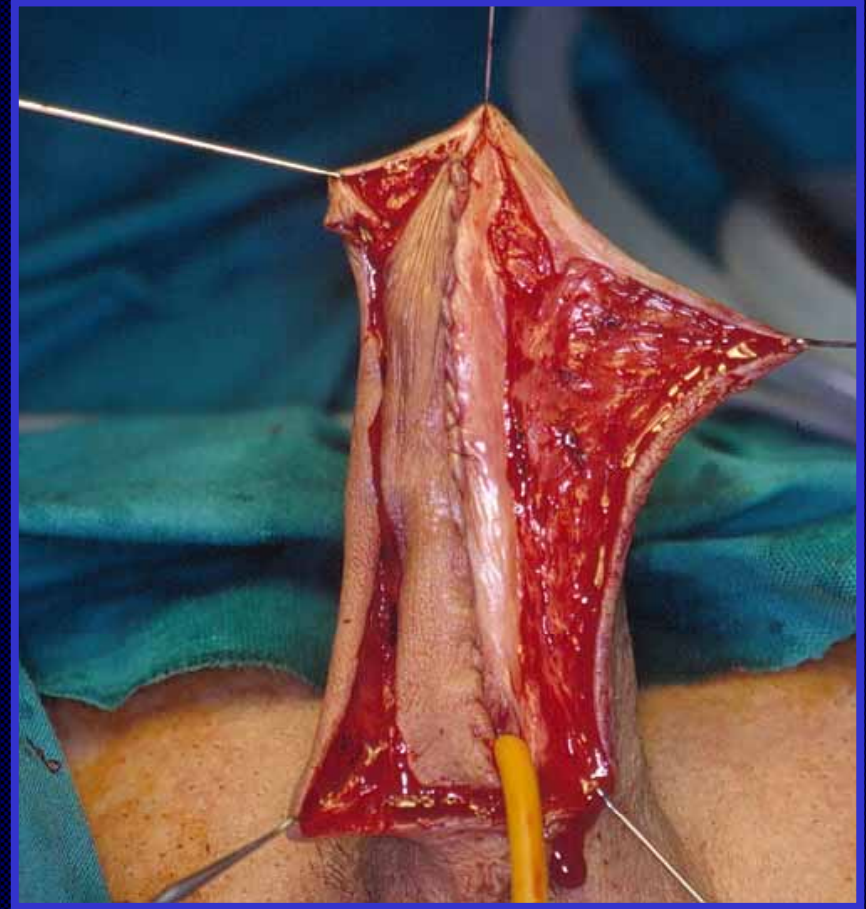
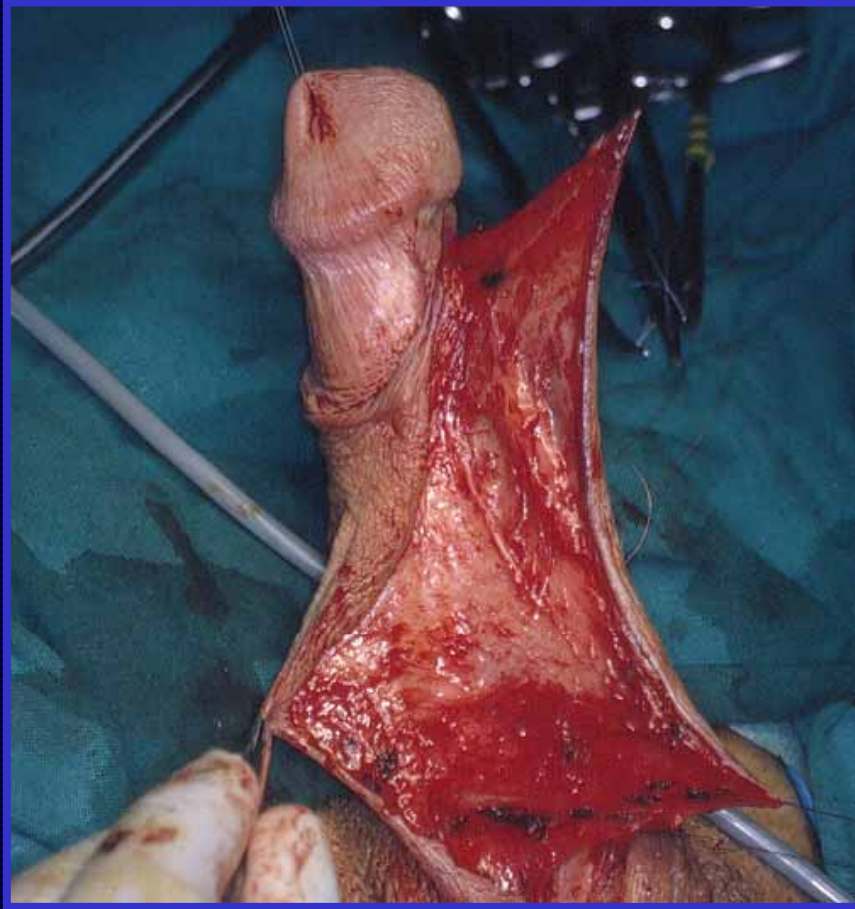




Jordan



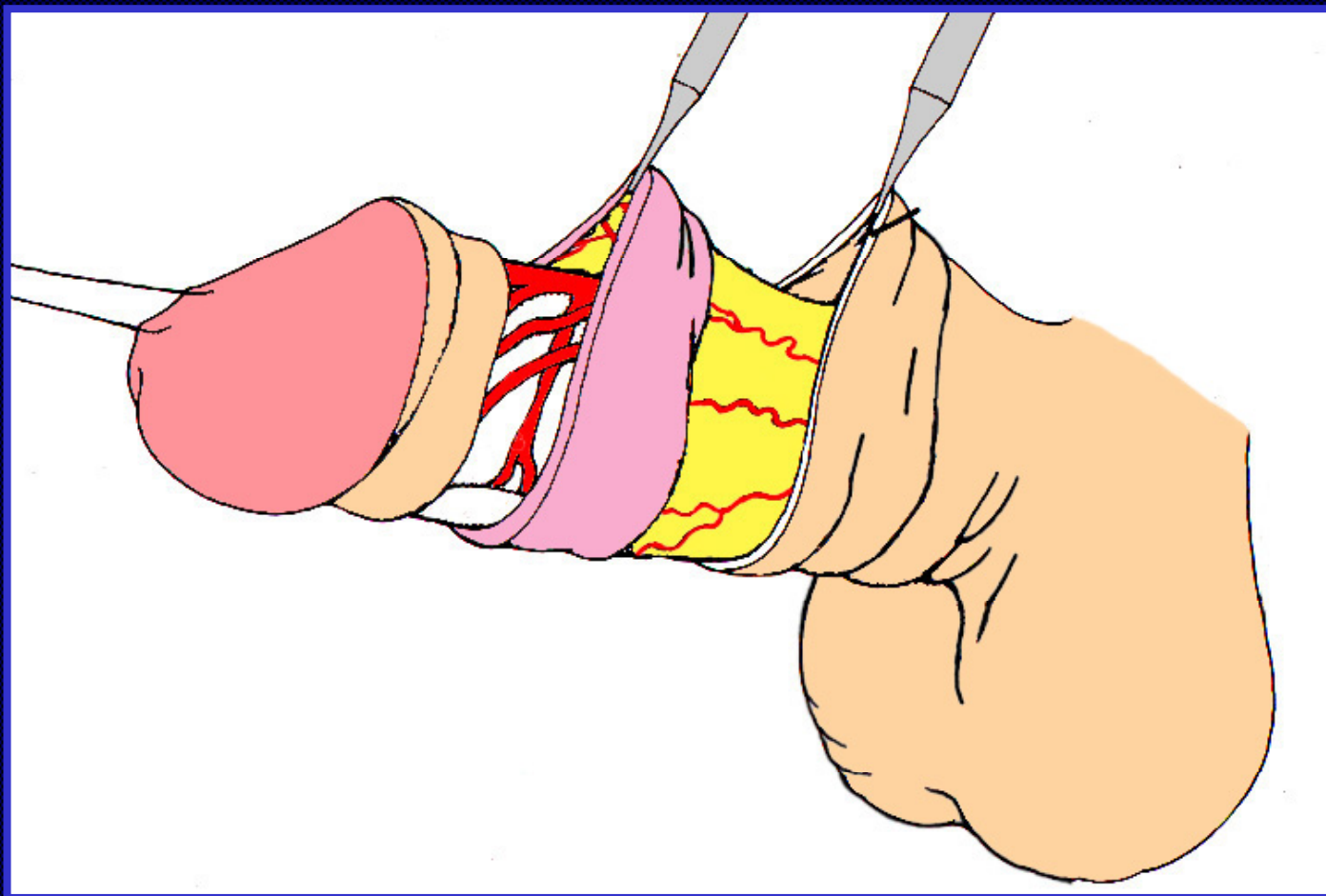
Jordan



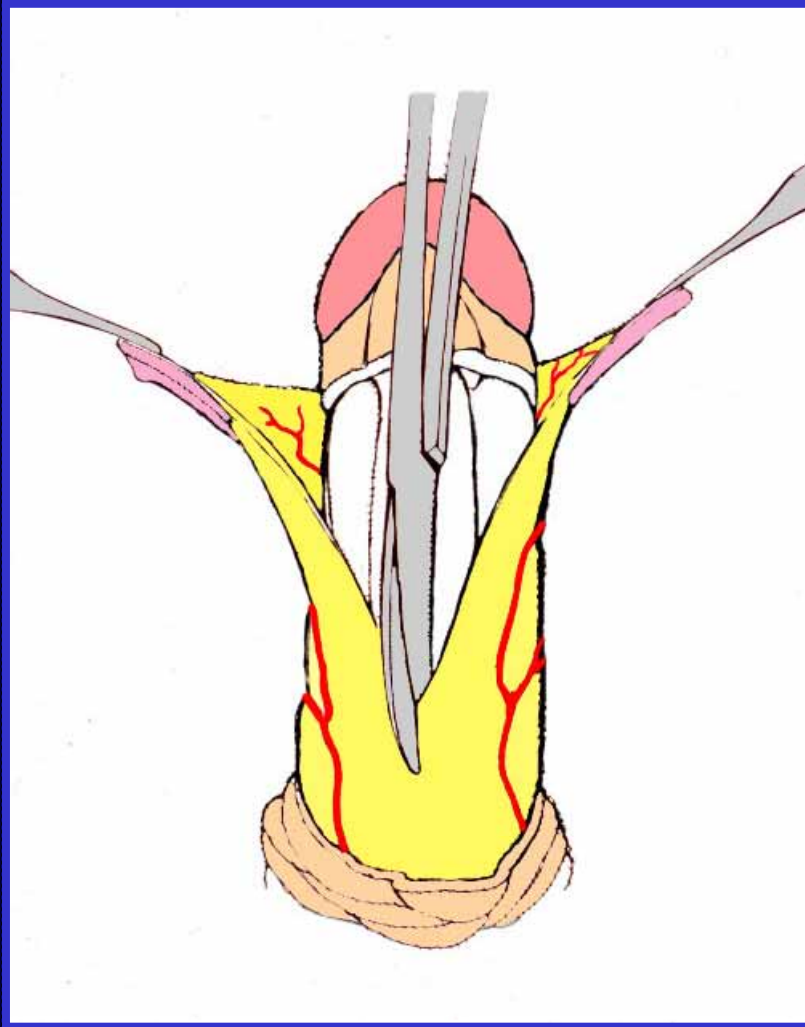
Jordan



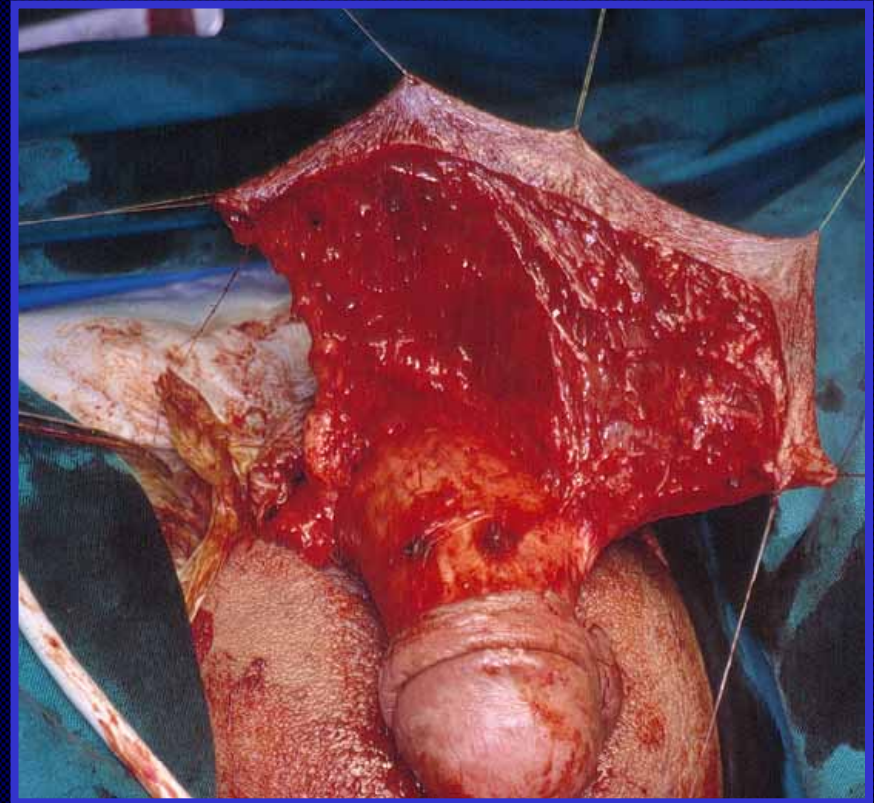
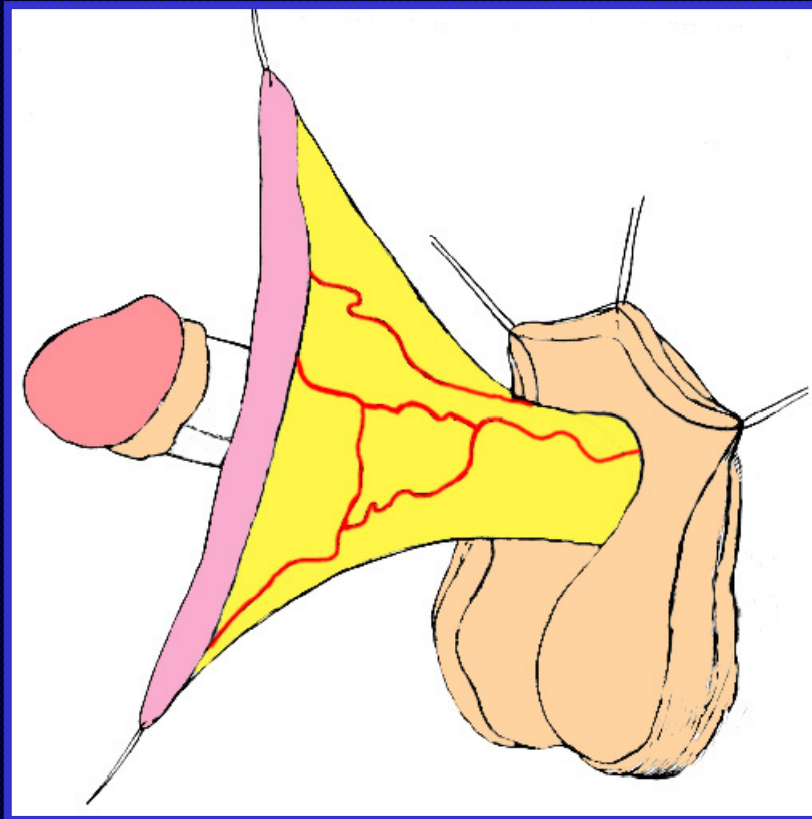
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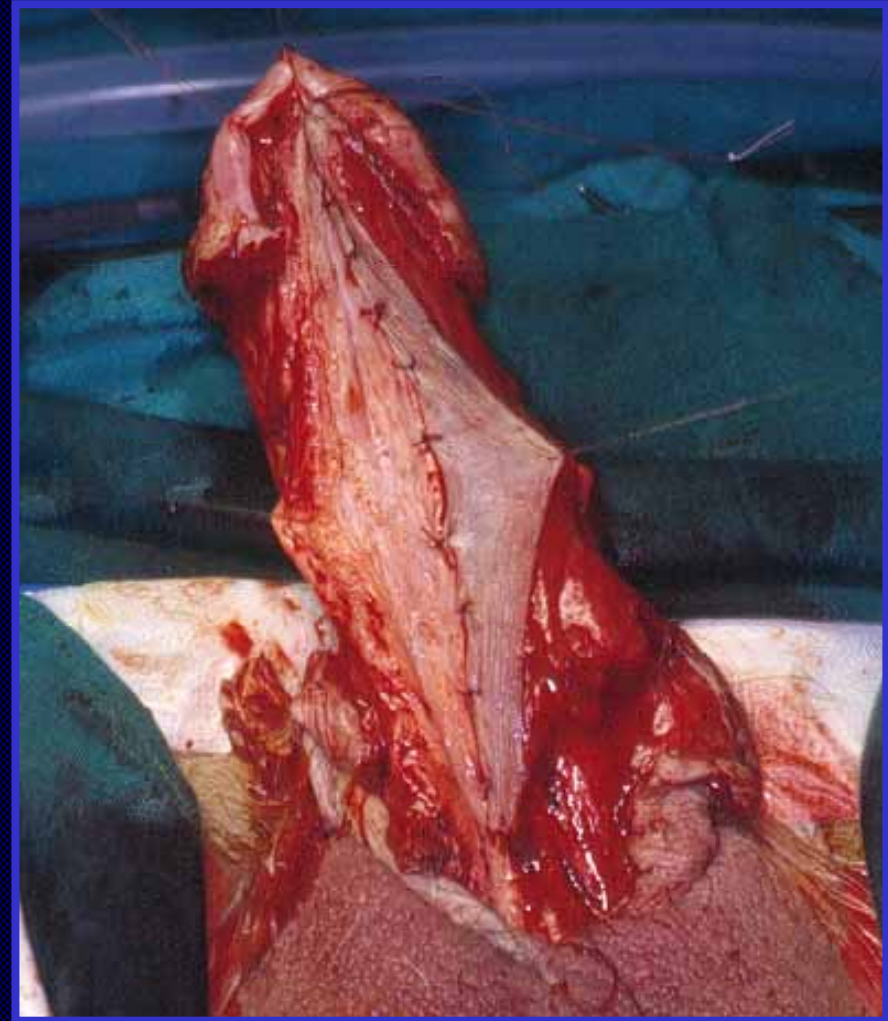
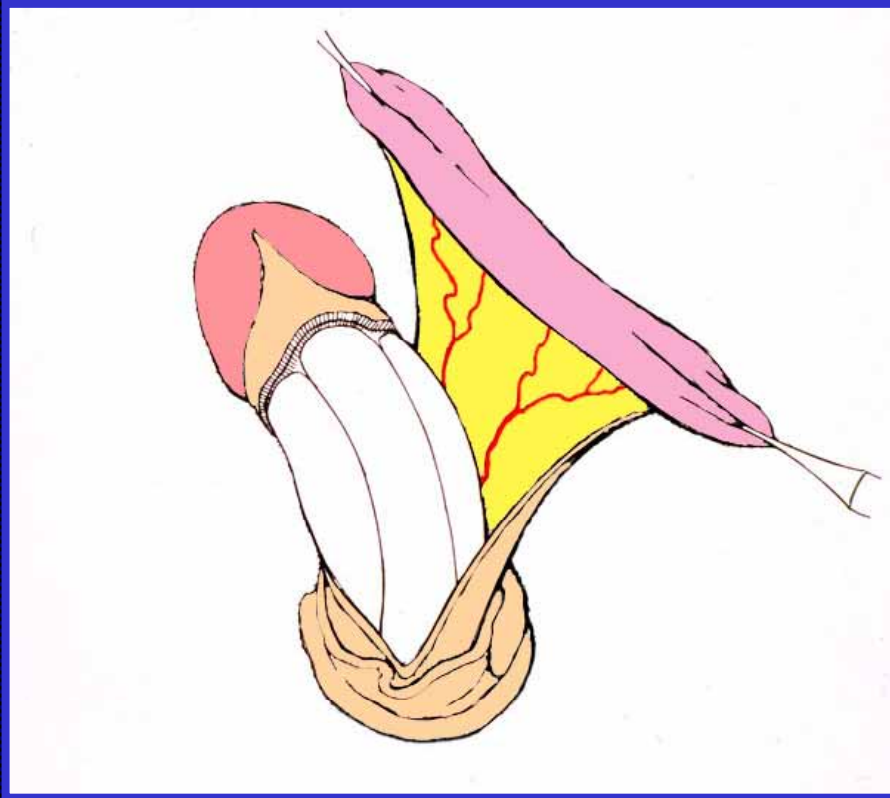
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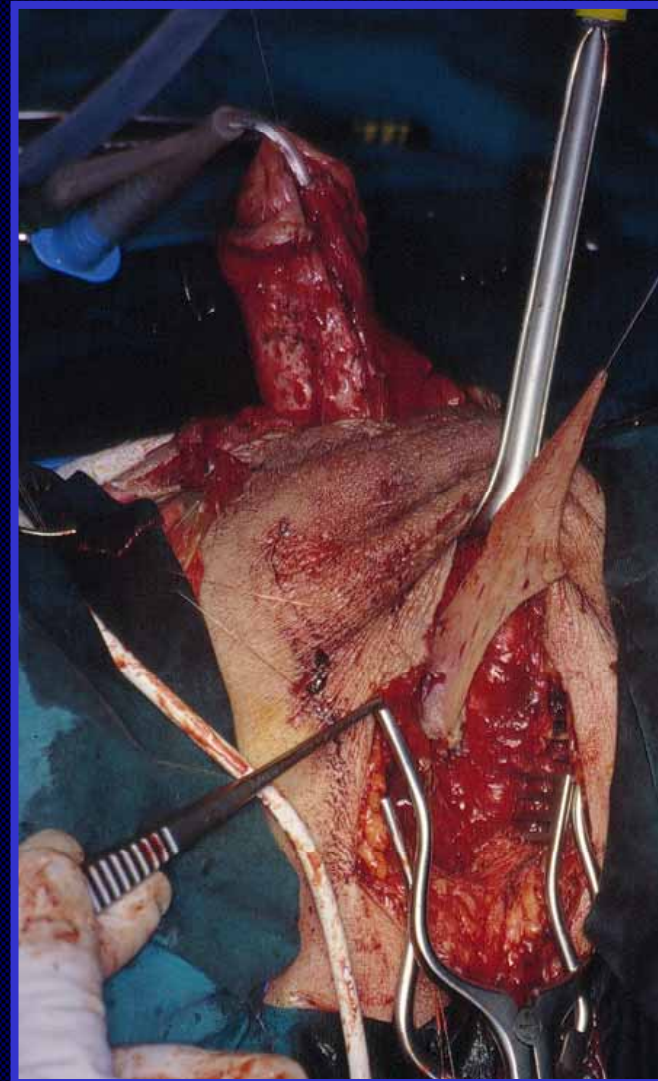
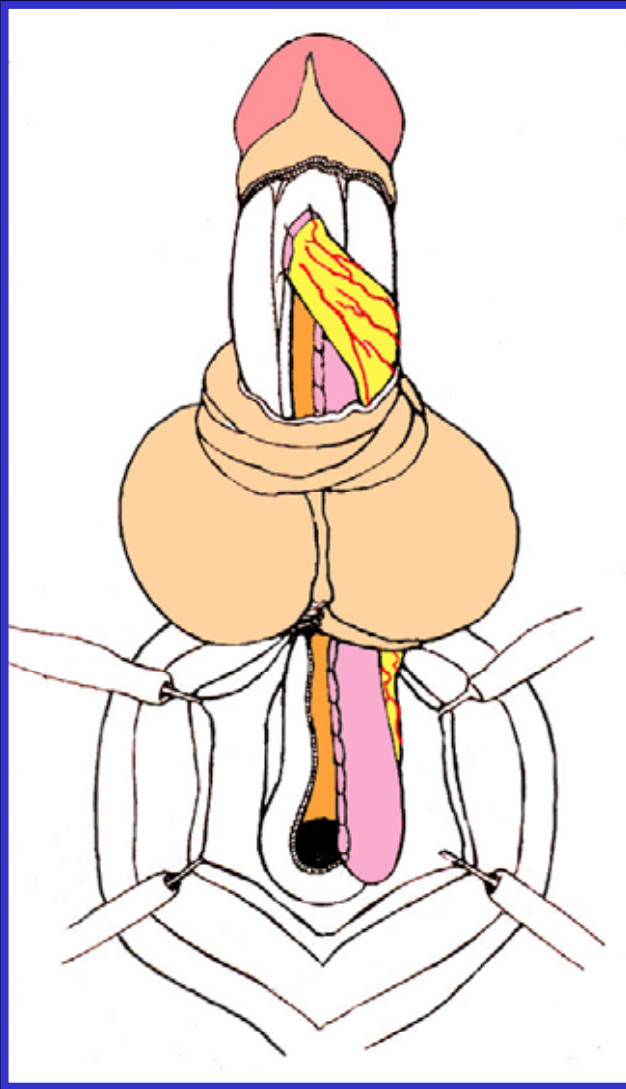
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McAninch



McAninch



Complications following flap urethroplasty



penile hematoma



skin necrosis



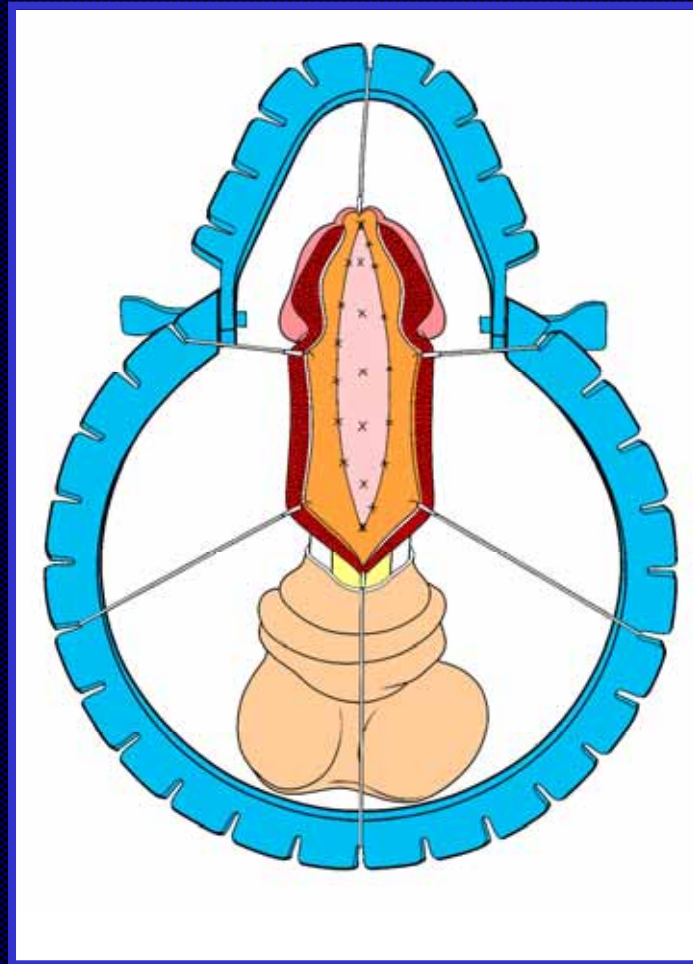
fistula

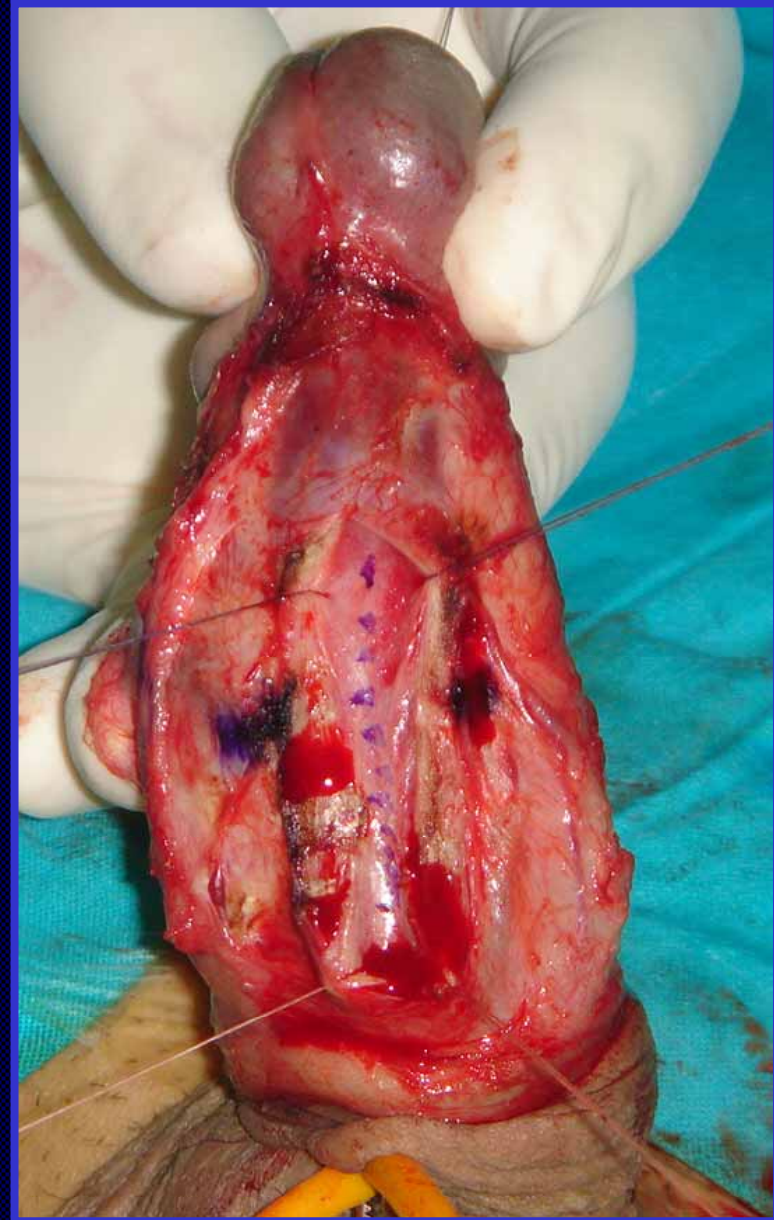


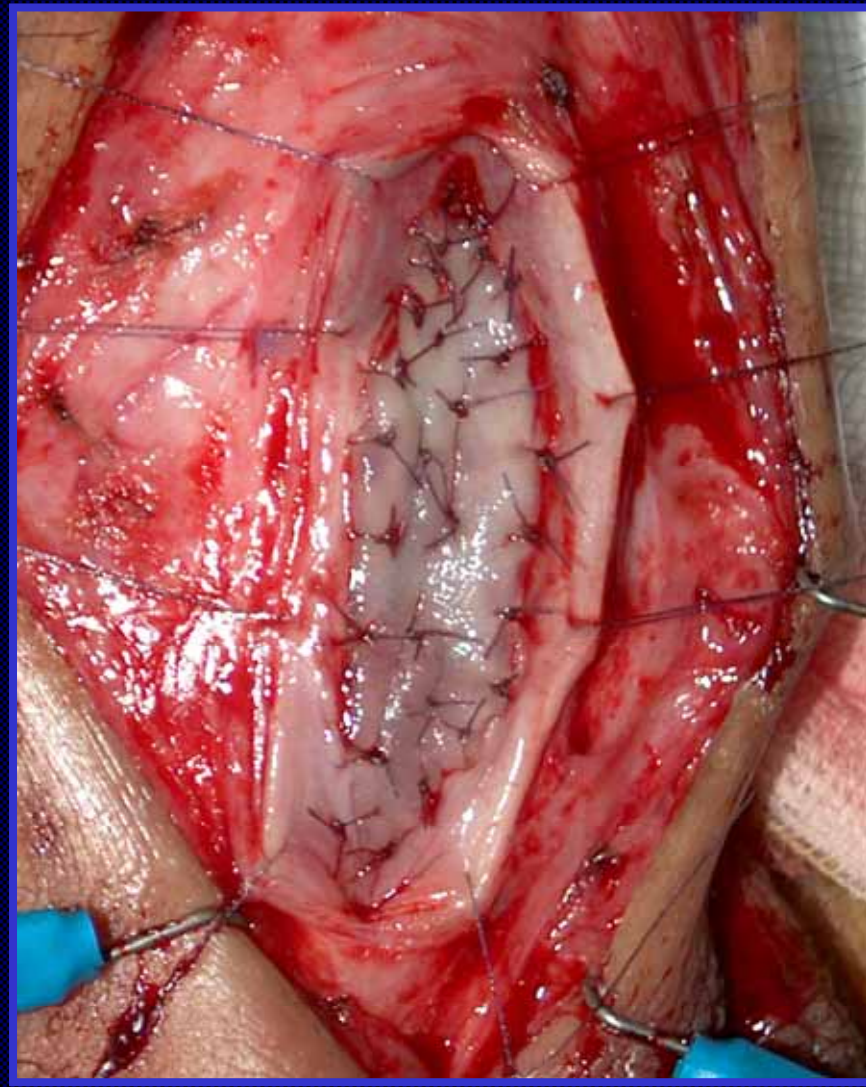
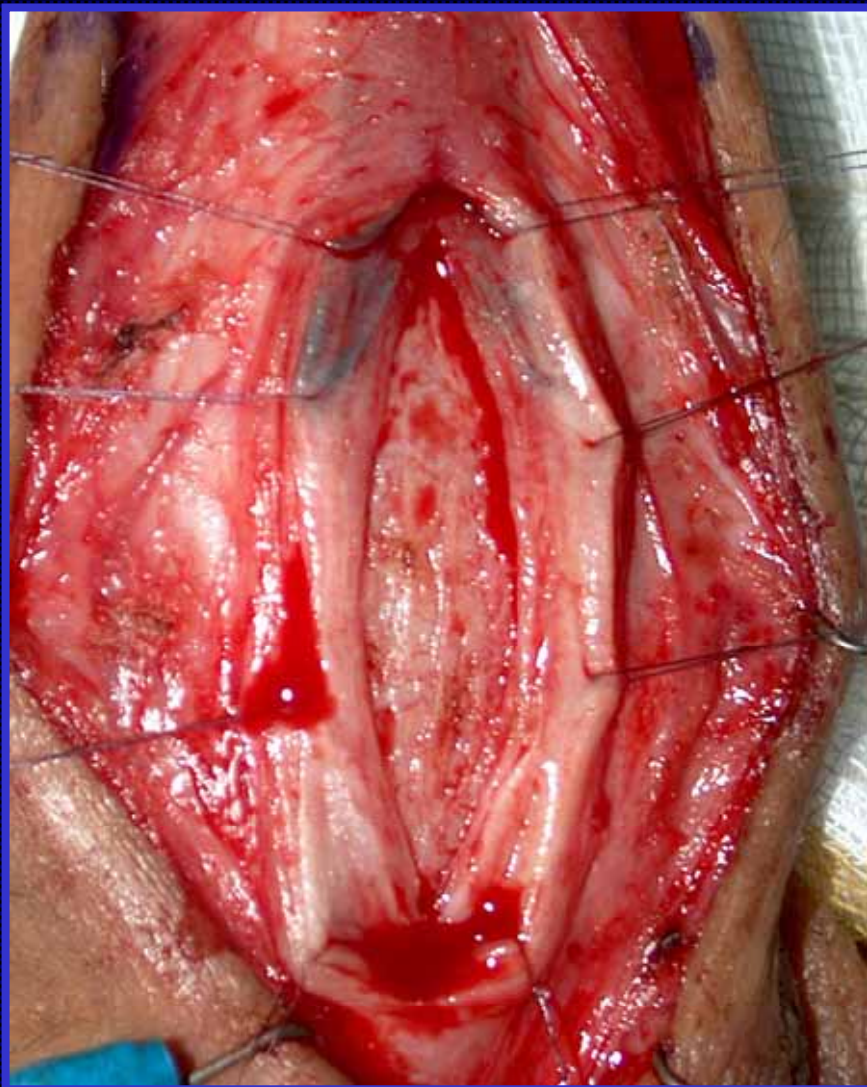
penile-glans torsion



One-stage urethroplasty using dorsal inlay buccal mucosal graft









Complications following graft urethroplasty



infection



meatal stenosis

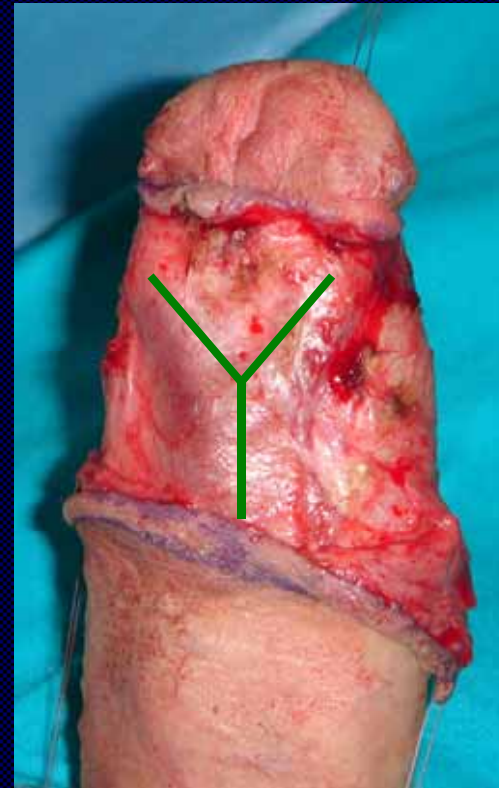


fistula

Penis in patients with hypospadias or failed hypospadias repair



No glans
No penile skin



No corpus spongiosum



Penis in patient with lichen sclerosus

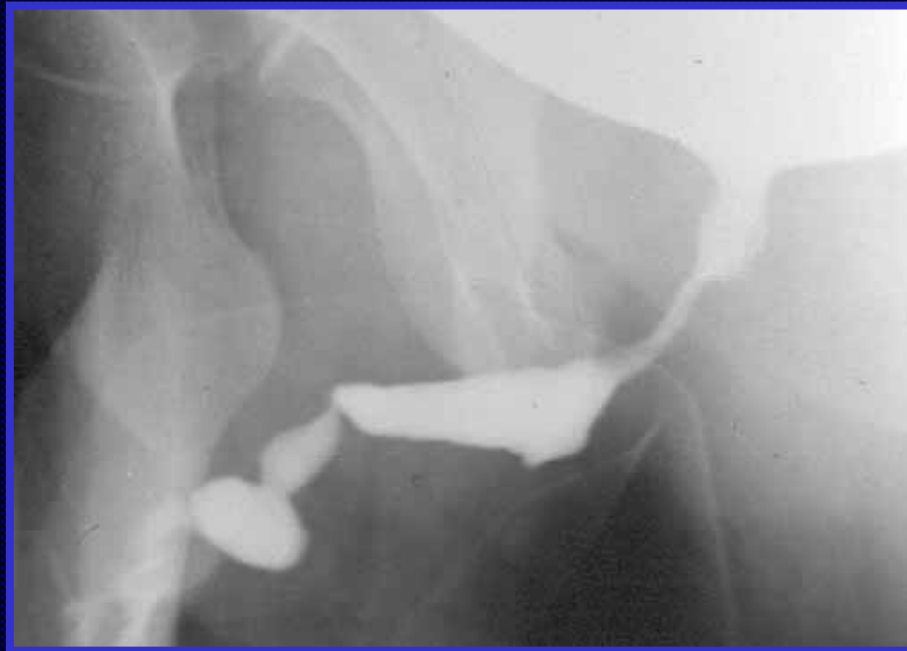


Glans and penile skin are fully involved in the disease

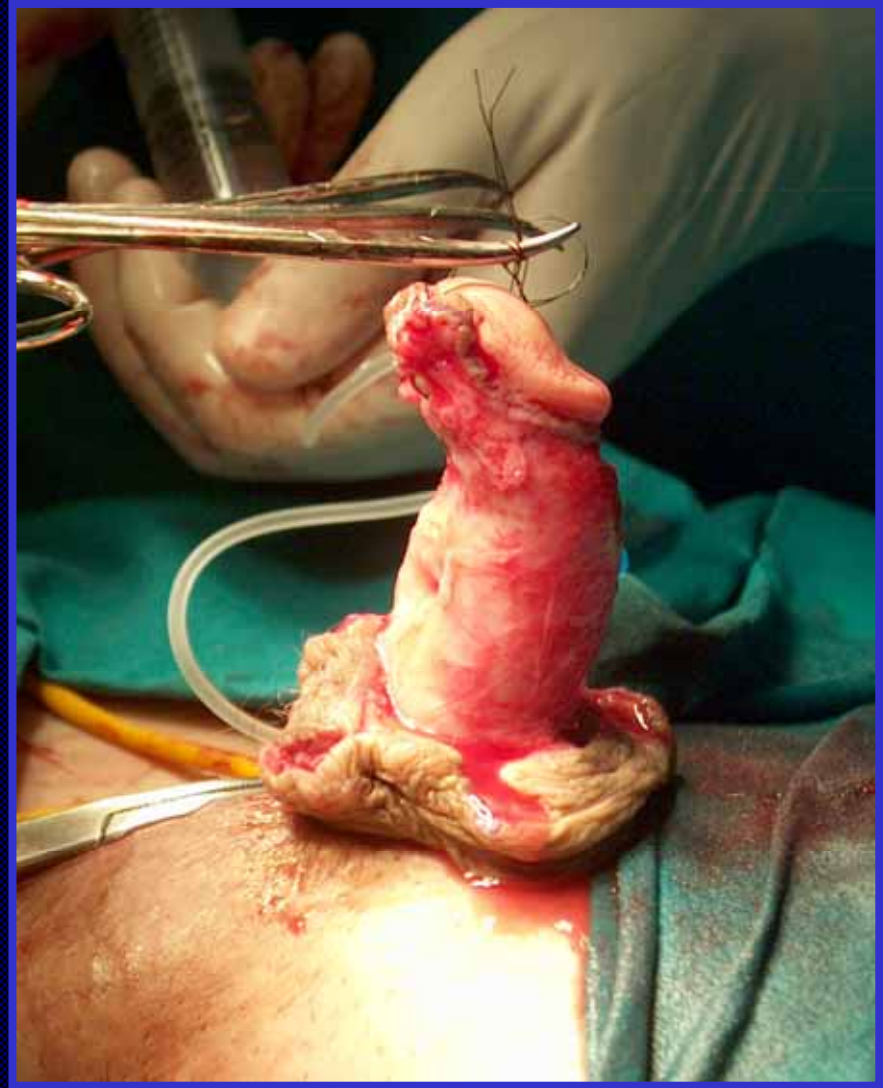


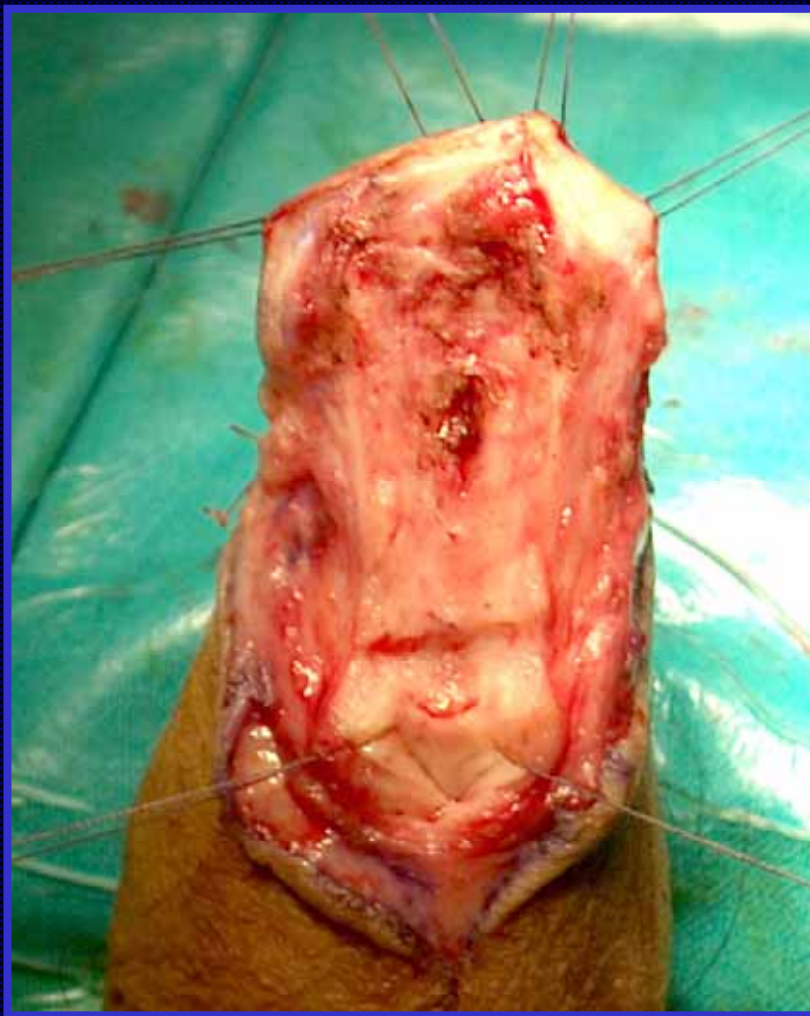
Corpus spongiosum and dartos fascia are fully involved in the disease

Multi-stage urethroplasty using buccal mucosal graft



First stage







Complications following the first stage of urethroplasty



10-39% of patients showed contracture or scarring of the initial graft, requiring new grafting procedures

These repeated surgical revisions might have a tremendous psychological impact on the patient

Barbagli et al., Eur Urol, 2006



Second stage







Complications following the second stage of urethroplasty



fistula



glans dehiscence



meatal stenosis

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

Barbagli et al., Eur Urol, 2006

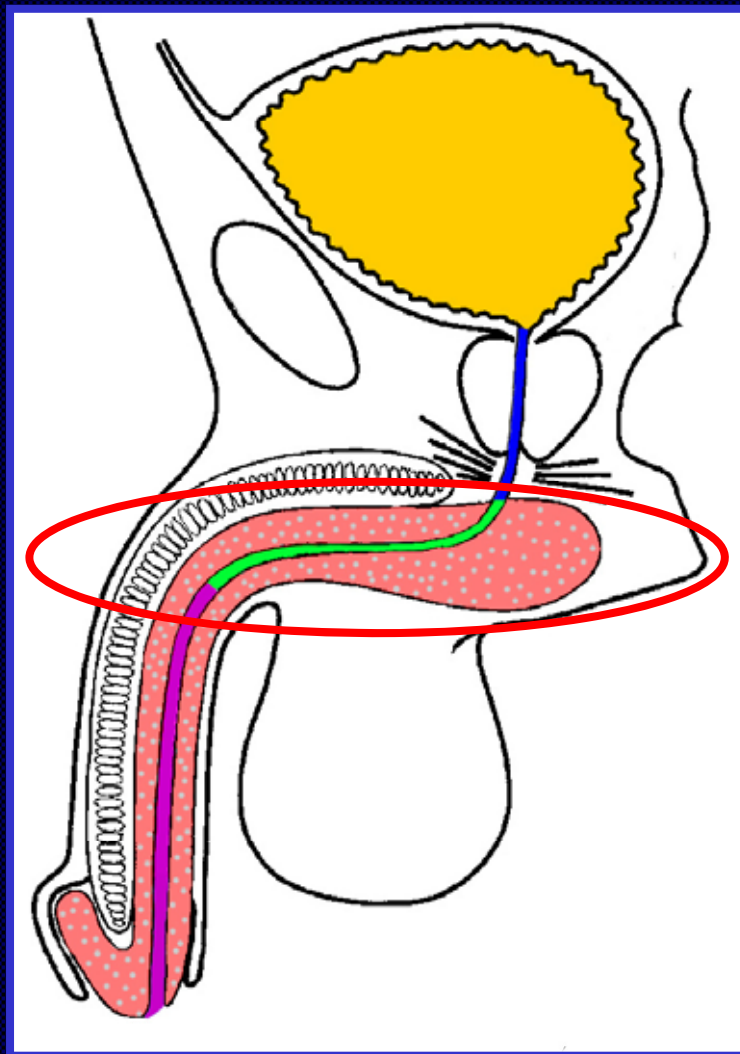


Evaluation of surgical outcome

- Patients with penile urethral stricture disease 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 topic is still terribly confused and does not furnish reliable interpretation of the available data



Surgery of the bulbar urethra



End-to-end anastomosis

Augmented anastomotic repair:

- **dorsal skin graft**
- **dorsal buccal mucosal graft**
- **ventral buccal mucosal graft**

Onlay graft urethroplasty:

- **ventral onlay (BM)**
- **dorsal onlay (BM)**
- **lateral onlay (BM)**
- **circumferential substitution onlay (BM)**
- **dorsal onlay (skin)**



Success rate of 375 one-stage bulbar urethroplasties

surgical technique	success
end-to-end anastomosis	90.9%
onlay graft urethroplasty	81.8%
augmented anastomotic repair	60%



Success rate based on the substitute material

substitute material	success rate
buccal mucosa	82.8%
penile skin	59.6%

Ejaculation dysfunctions following end-to-end anastomosis in 60 patients

- 12 patients (20%): **decreased force of the ejaculation jet**
- 2 patients (3.3%): **ejaculation was possible only by manually compressing the perineum at the level of the urethral bulb**

G.Barbagli and M. Lazzeri: data submitted for publication, 2007



Penile neuro-vascular dysfunctions following end-to-end anastomosis in 60 patients

- 11 patients (18.3%): showed decreased sensitivity to the glans or distal penile shaft
- 7 patients (11.6%): showed a glans that was neither full nor swollen during erection
- 1 patient (1.6%): showed a cold glans during erection

G.Barbagli and M. Lazzeri: data submitted for publication, 2007

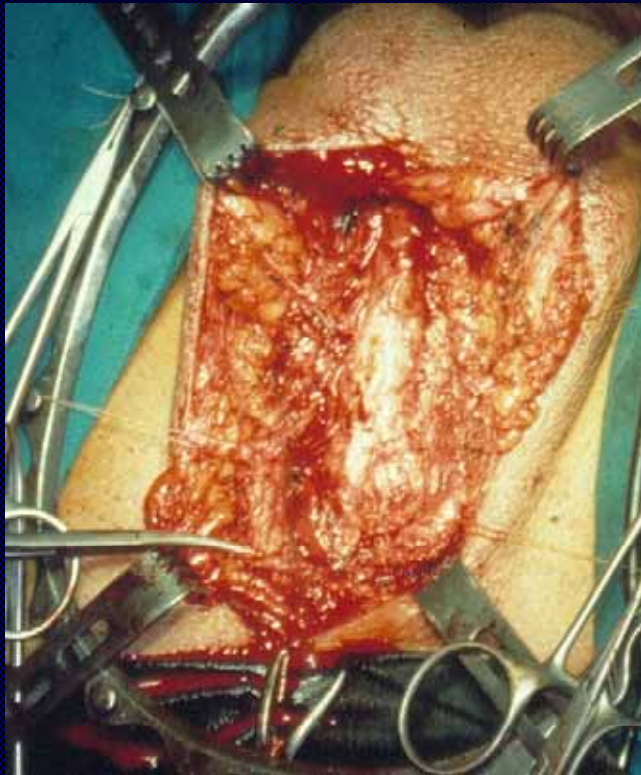


Two-stage urethroplasty

When and how



Local adverse conditions

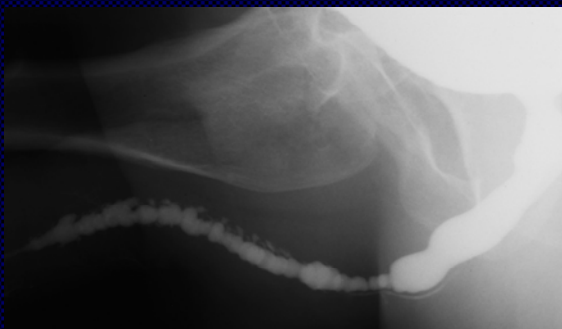


Previous failed urethroplasty



Fistulas and abscess

Local adverse conditions



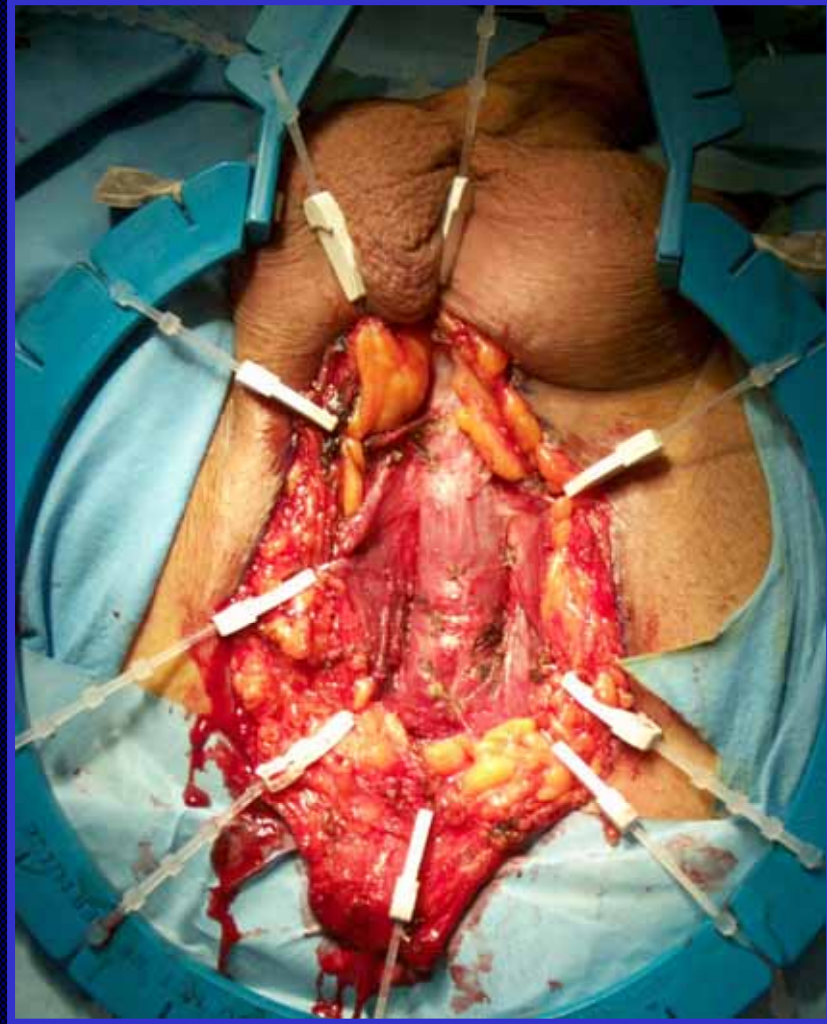
Panurethral stricture with lichen sclerosis

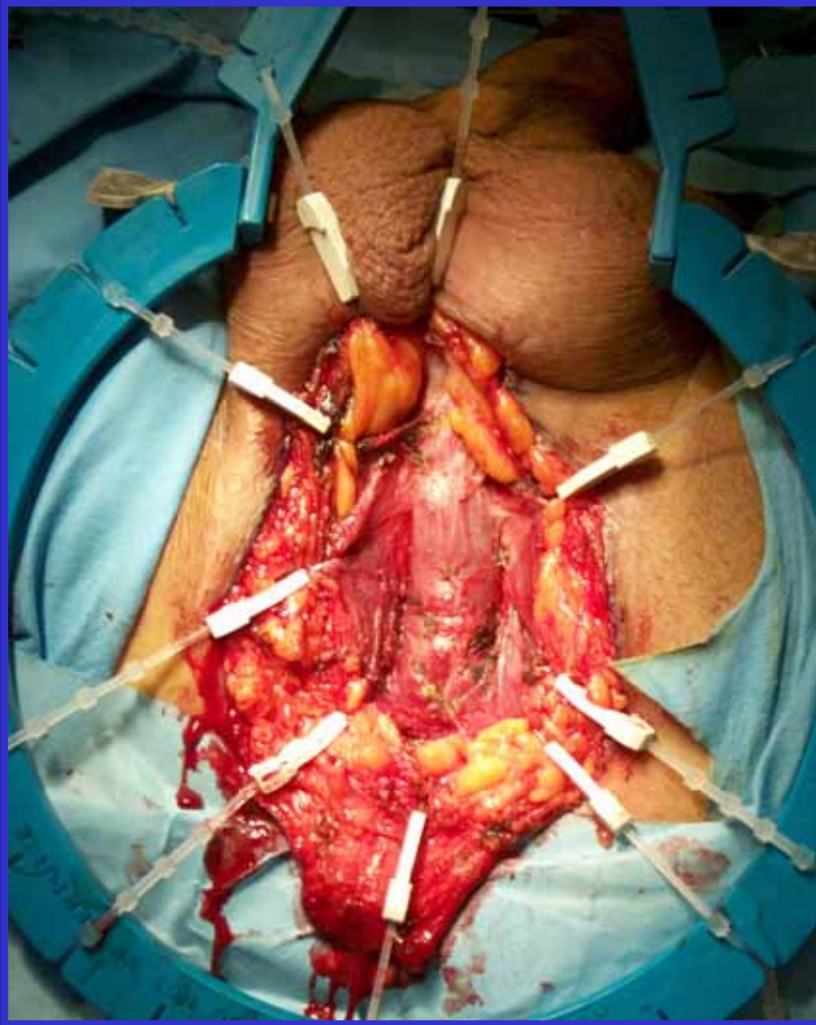


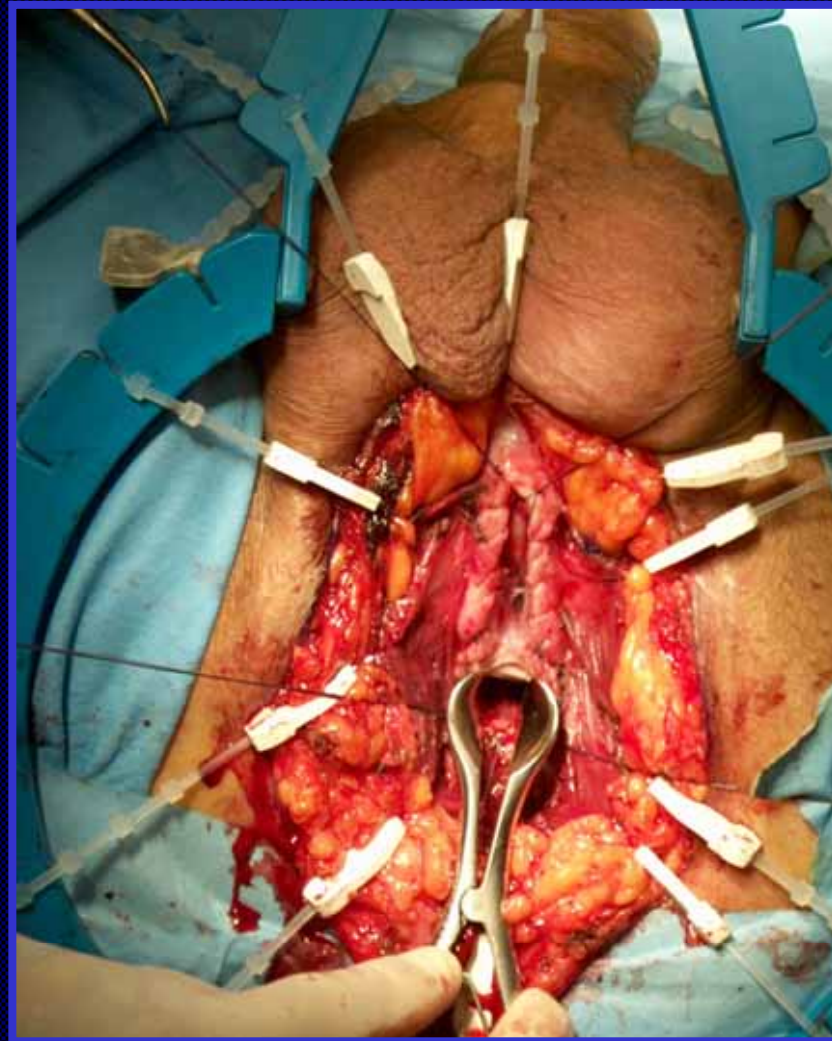
Urethral stent

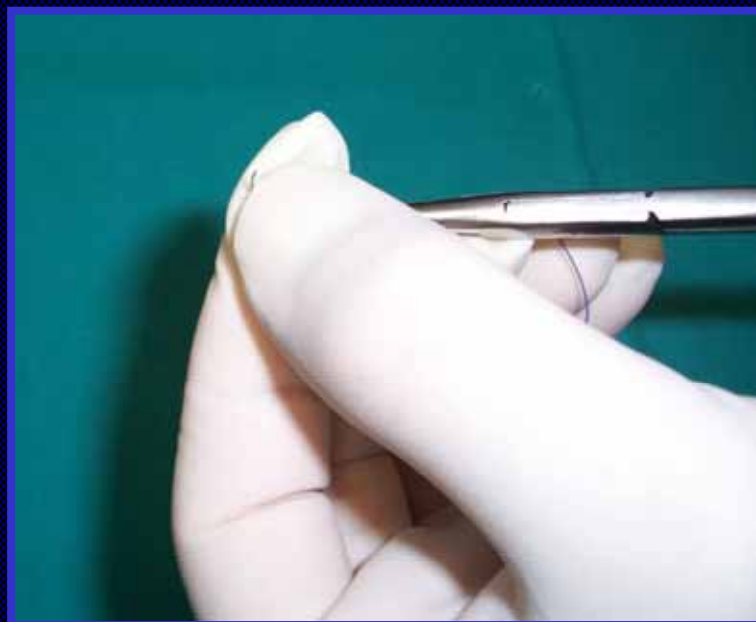


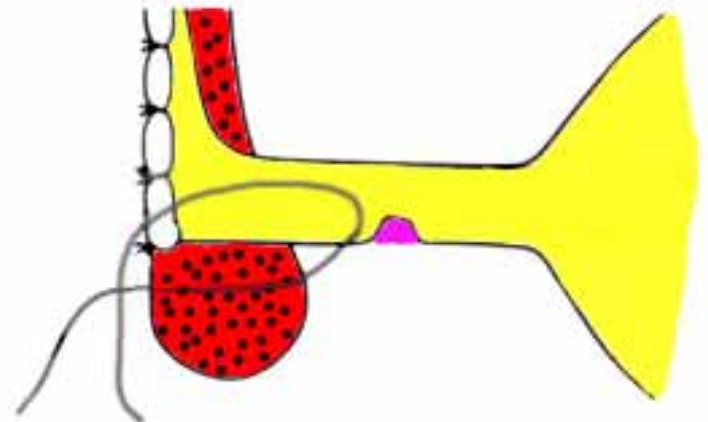
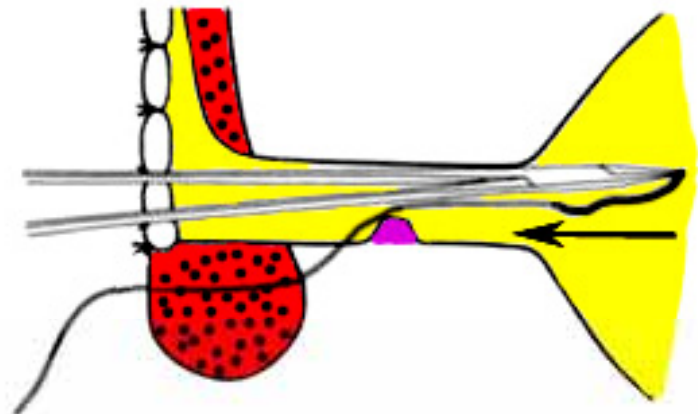
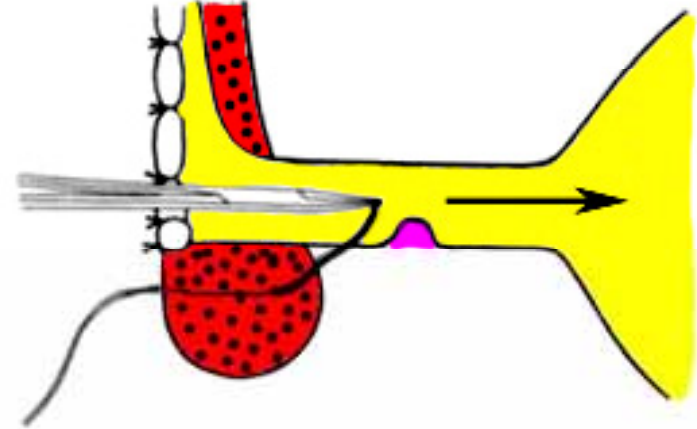
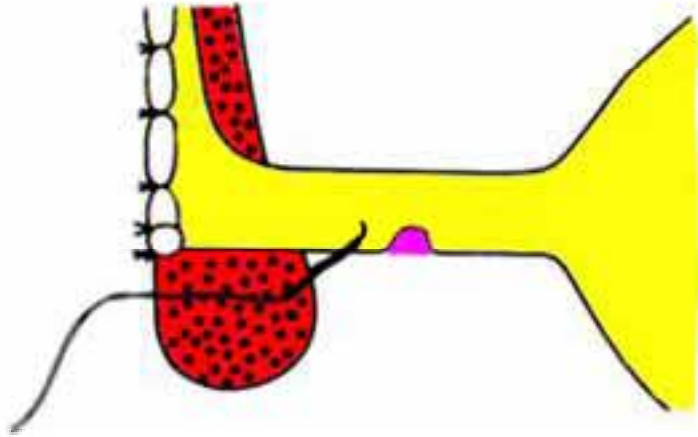
First stage

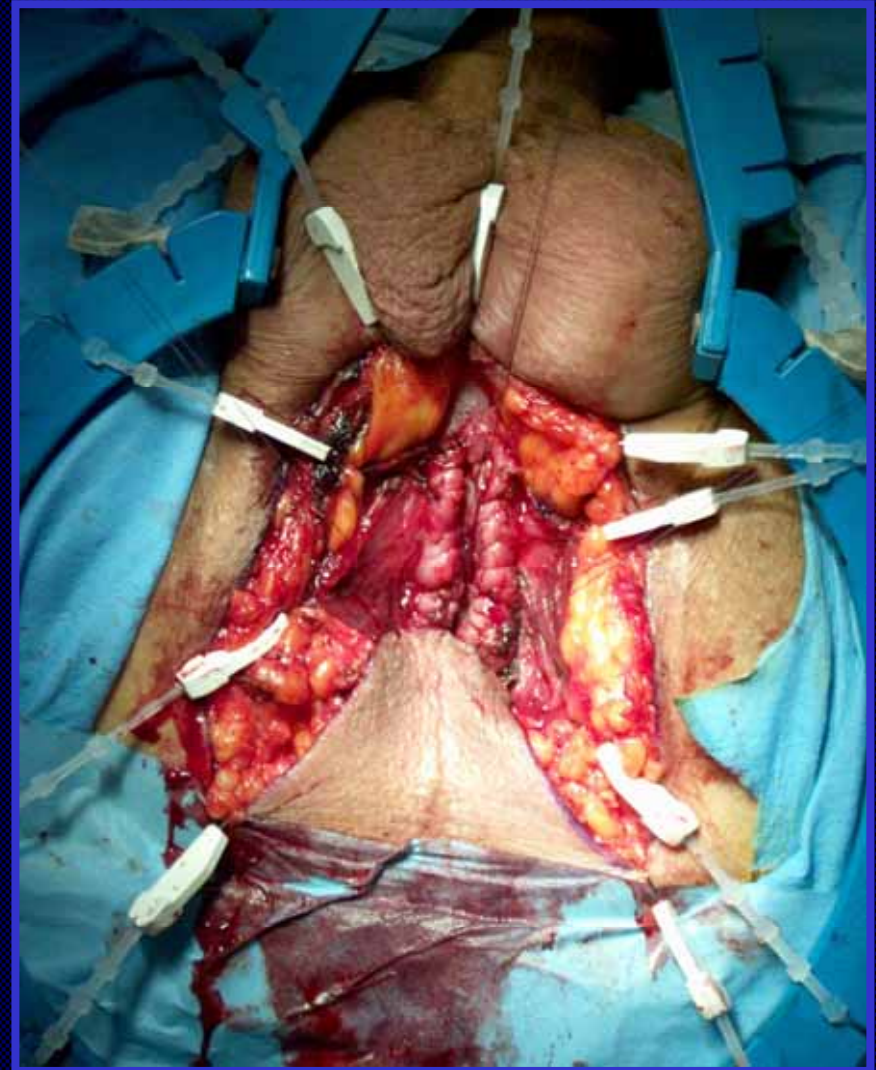
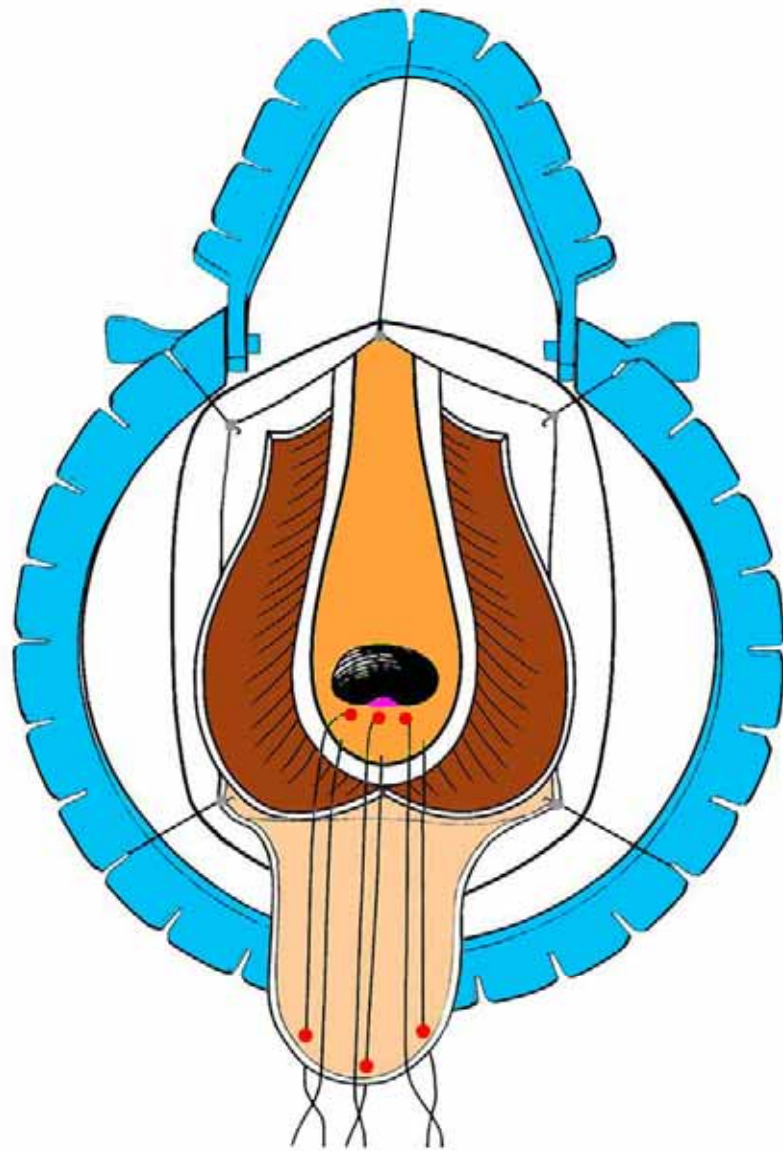










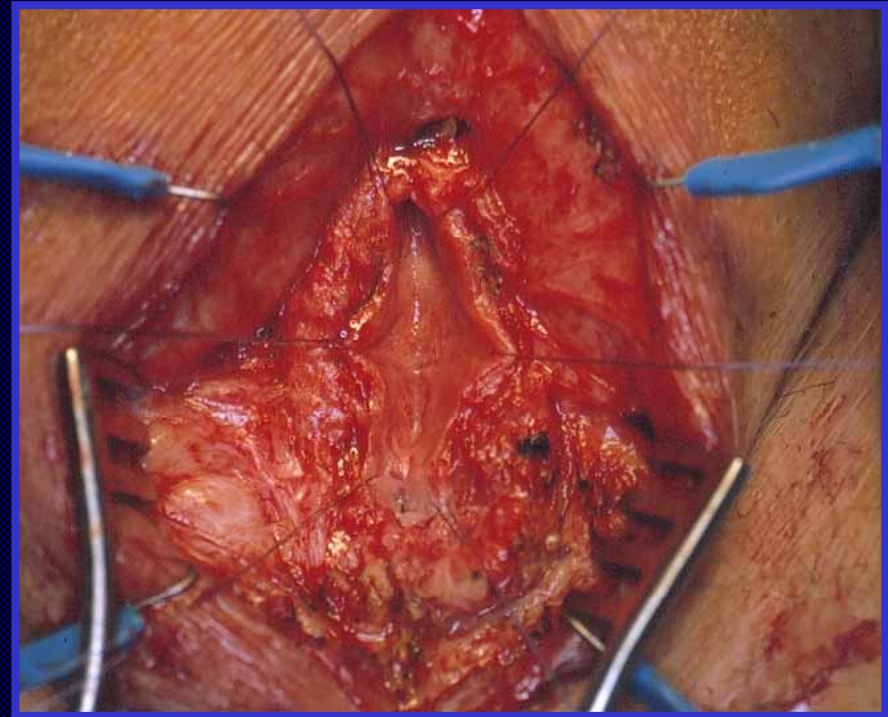


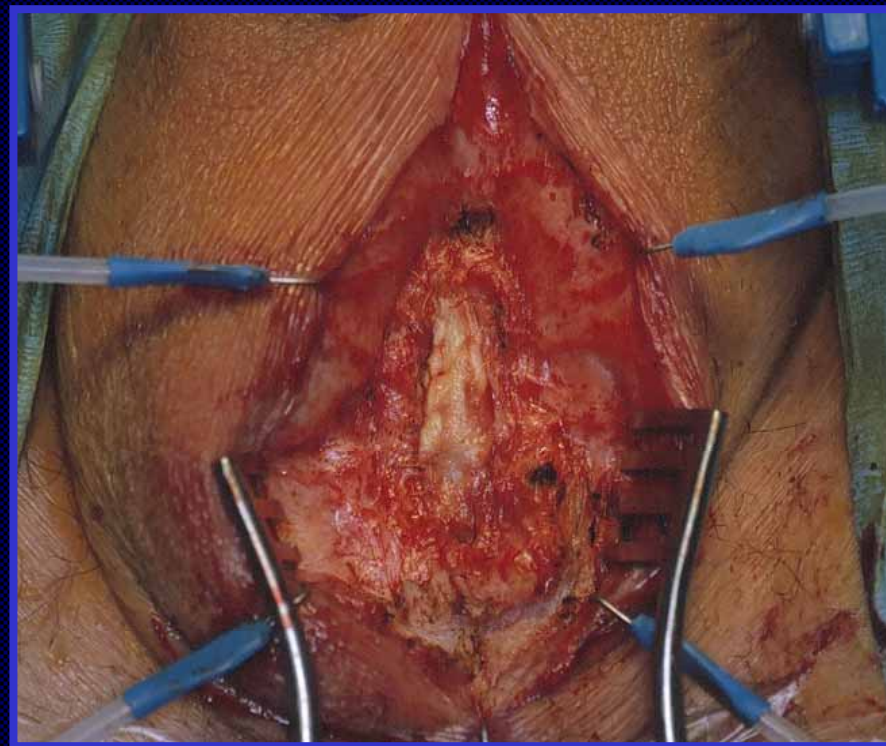
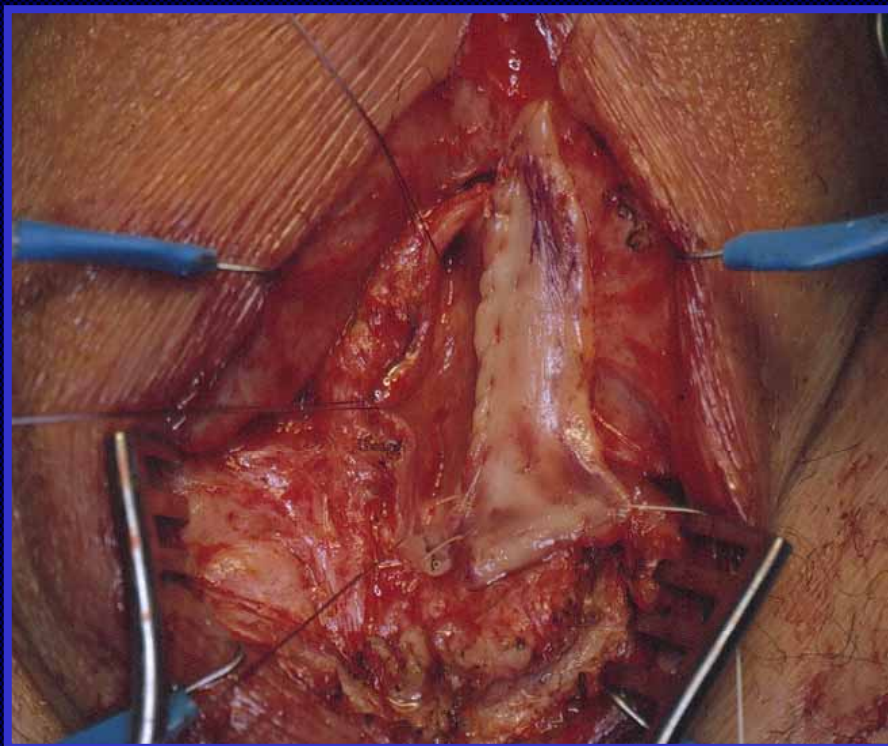


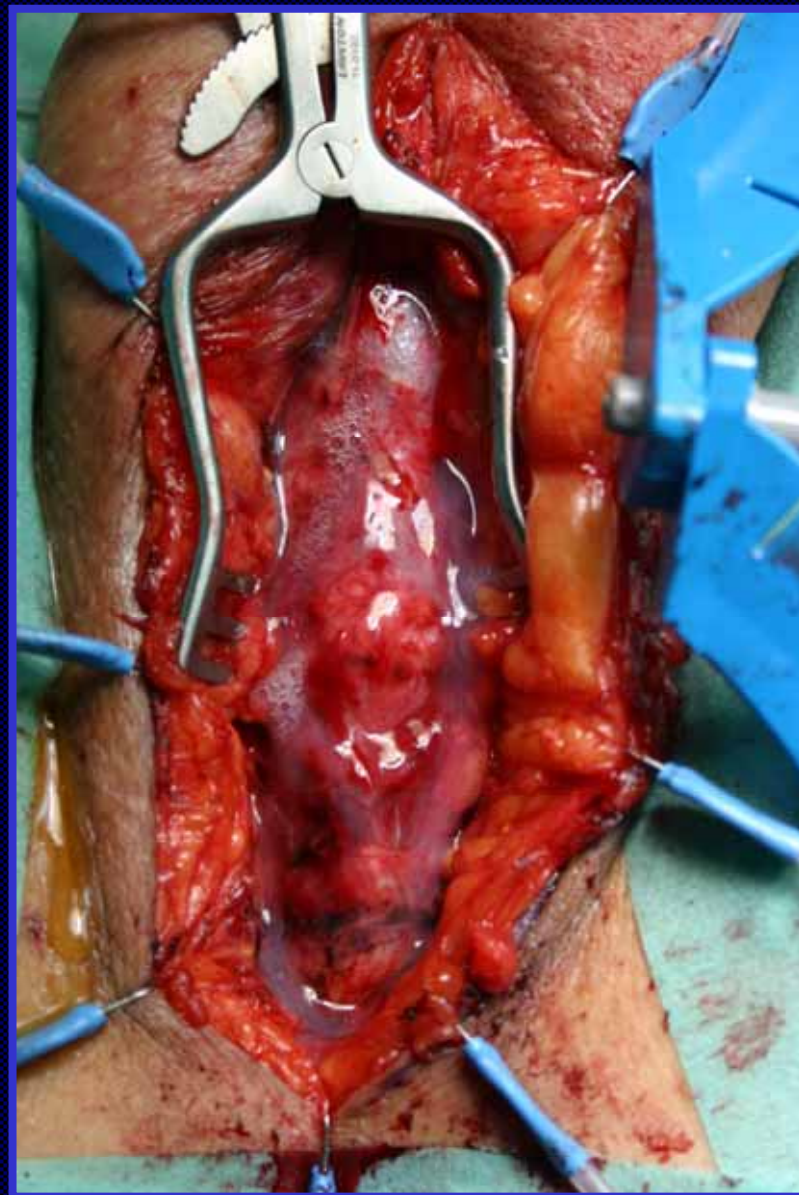


Second stage

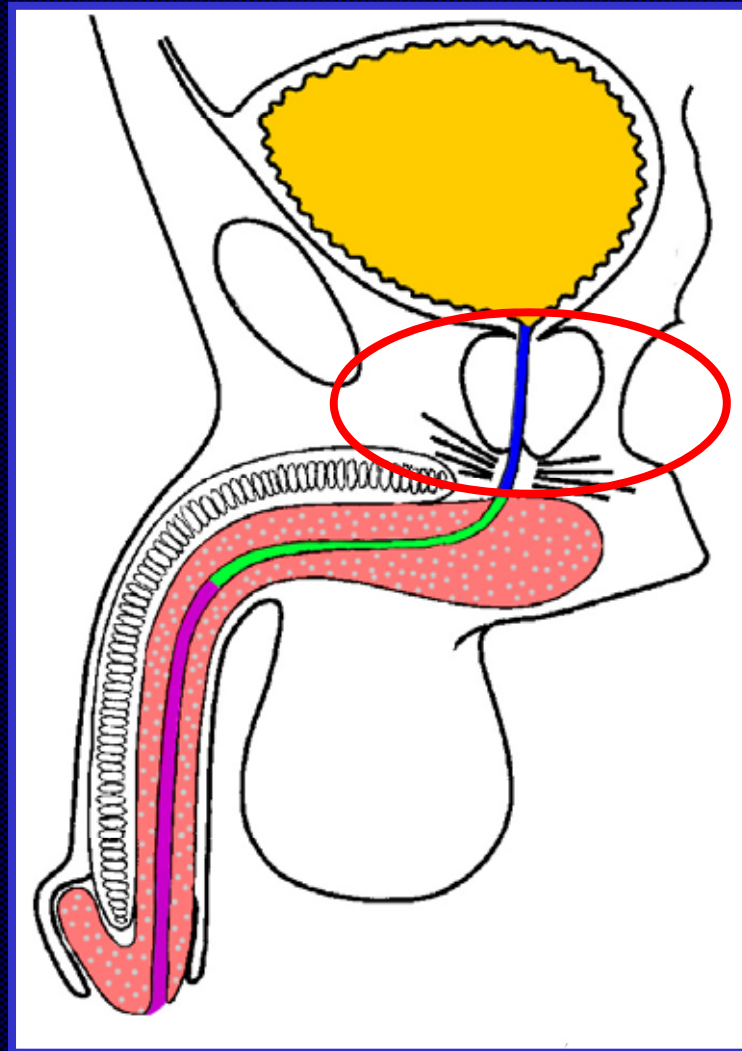








Surgery of the posterior urethra



Surgery of the posterior urethra



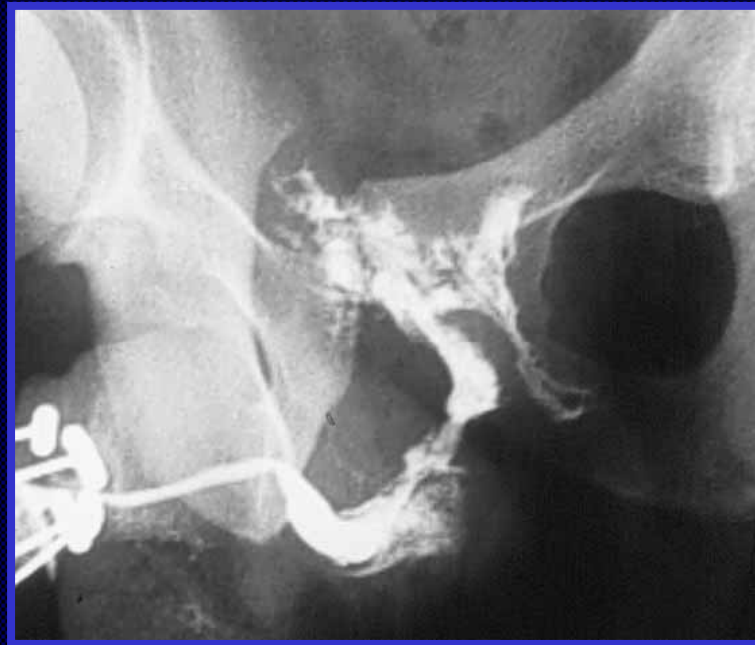
trauma



stricture



Goal of surgery of the posterior urethra



Repair the urethral disruption or defect preserving urinary continence and sexual function



Emergency treatment of posterior urethral trauma

- suprapubic urinary diversion

immediate

- endoscopic realignment

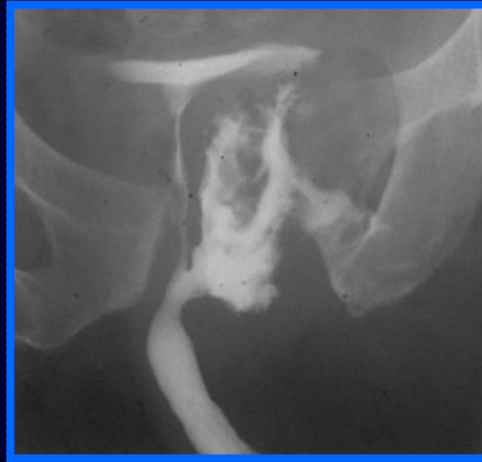
7 – 15 days following trauma

- delayed urethroplasty

4 months following trauma



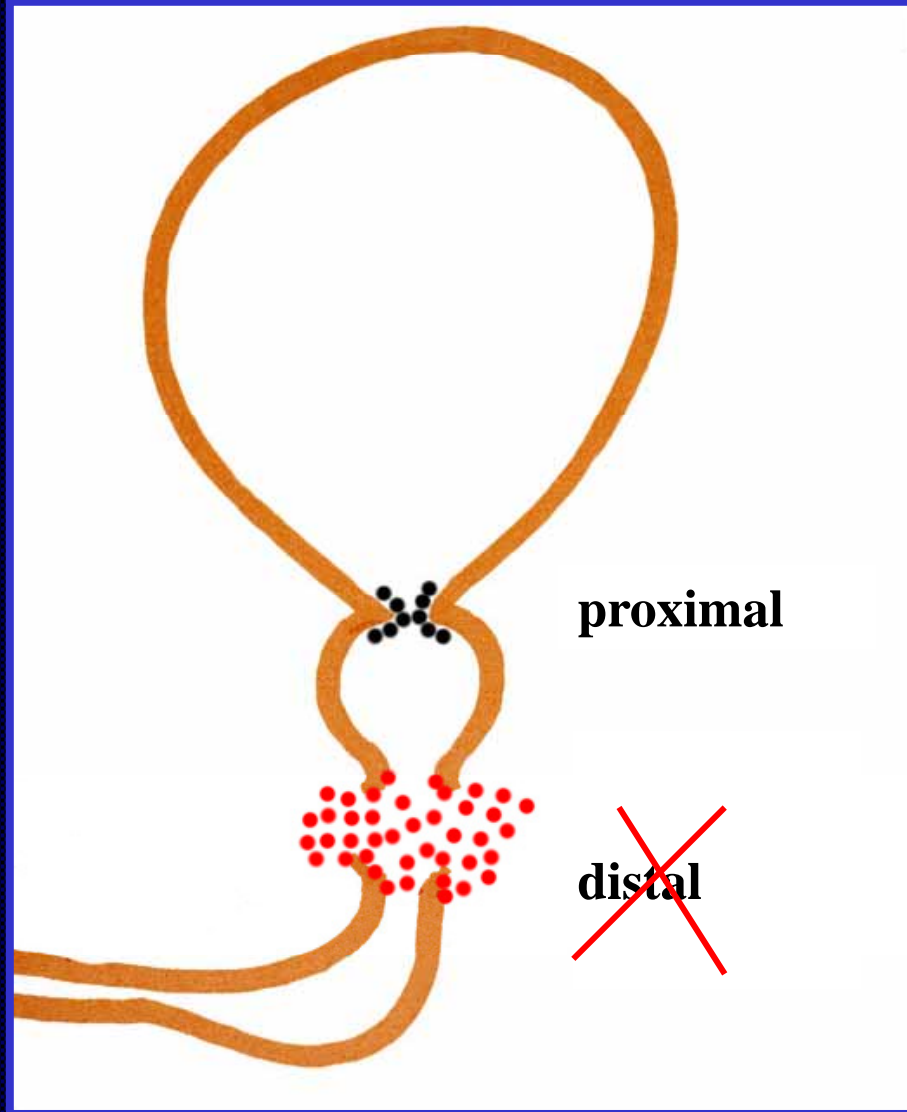
Suprapubic urinary diversion



Endoscopic realignment

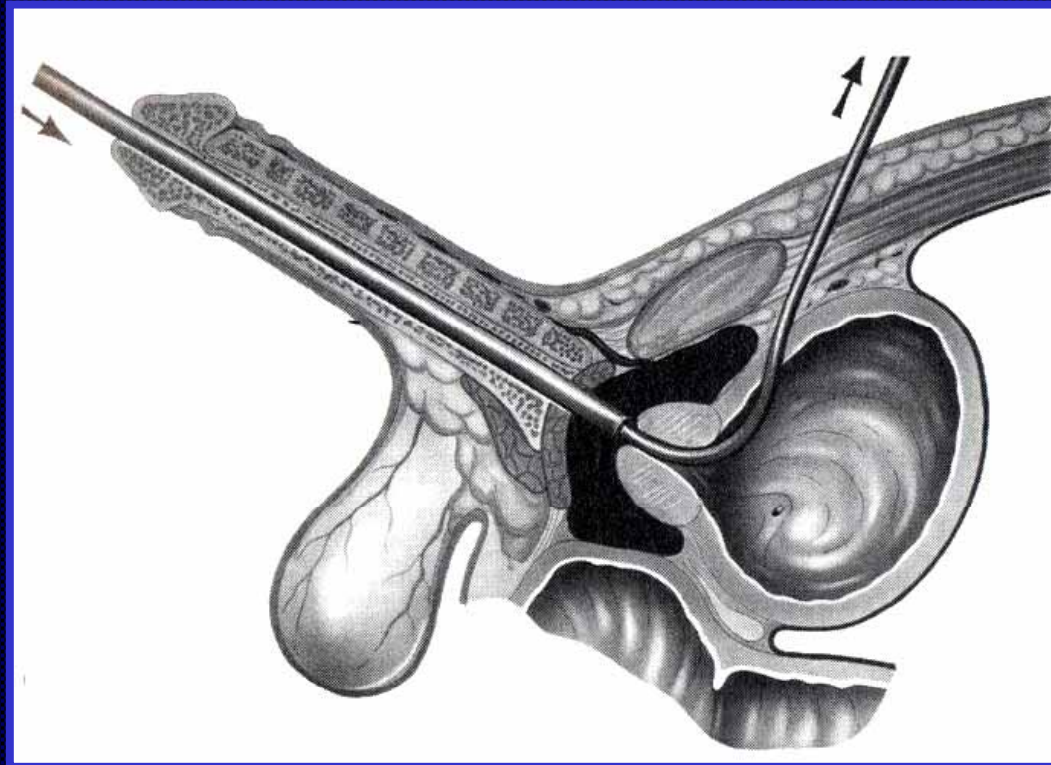
- adequate operative room
- adequate instruments
- adequate surgeon
- adequate patient

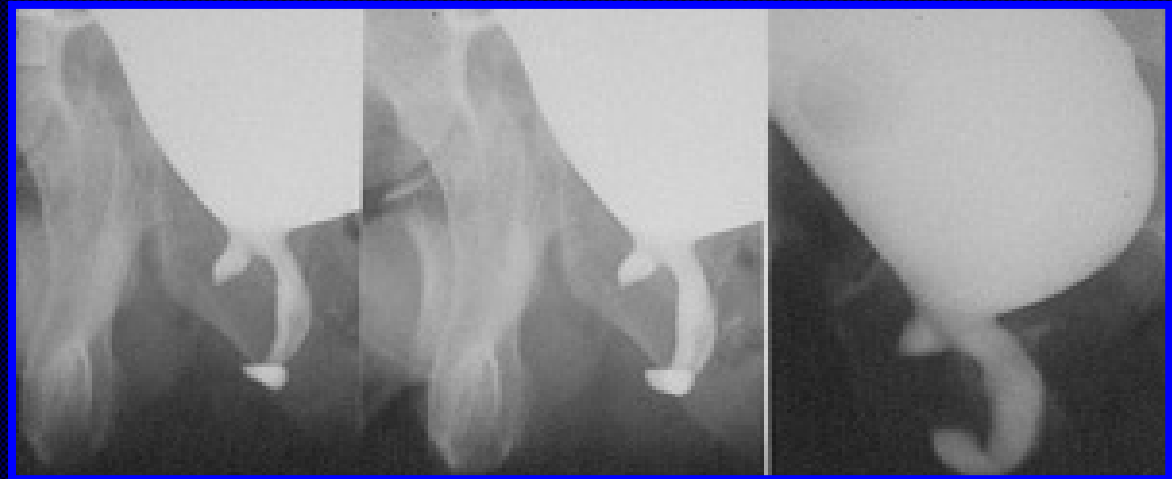


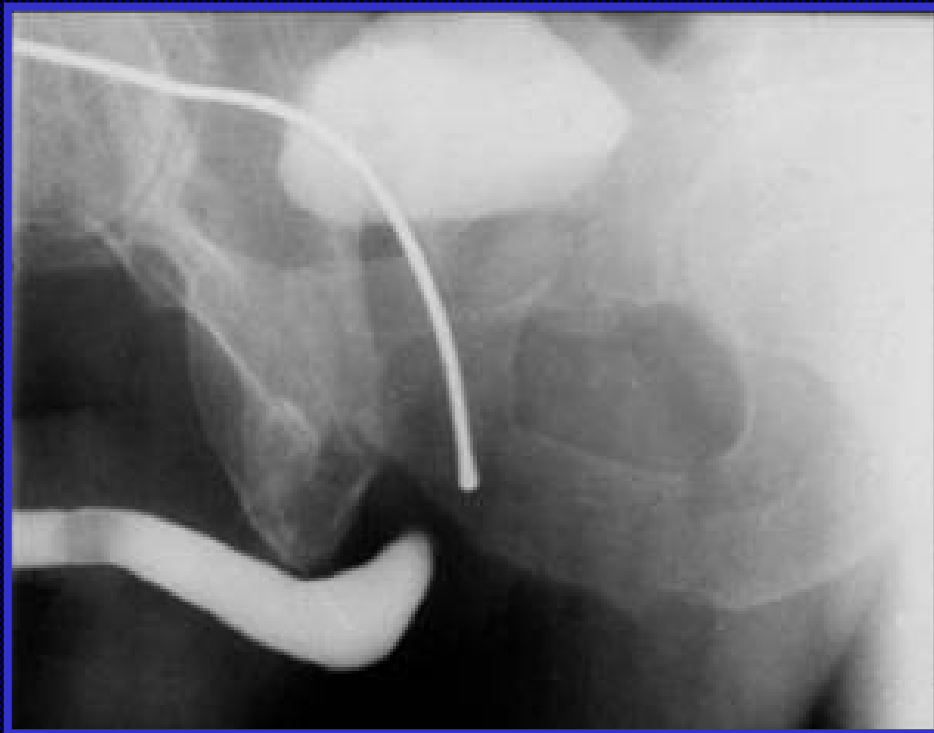




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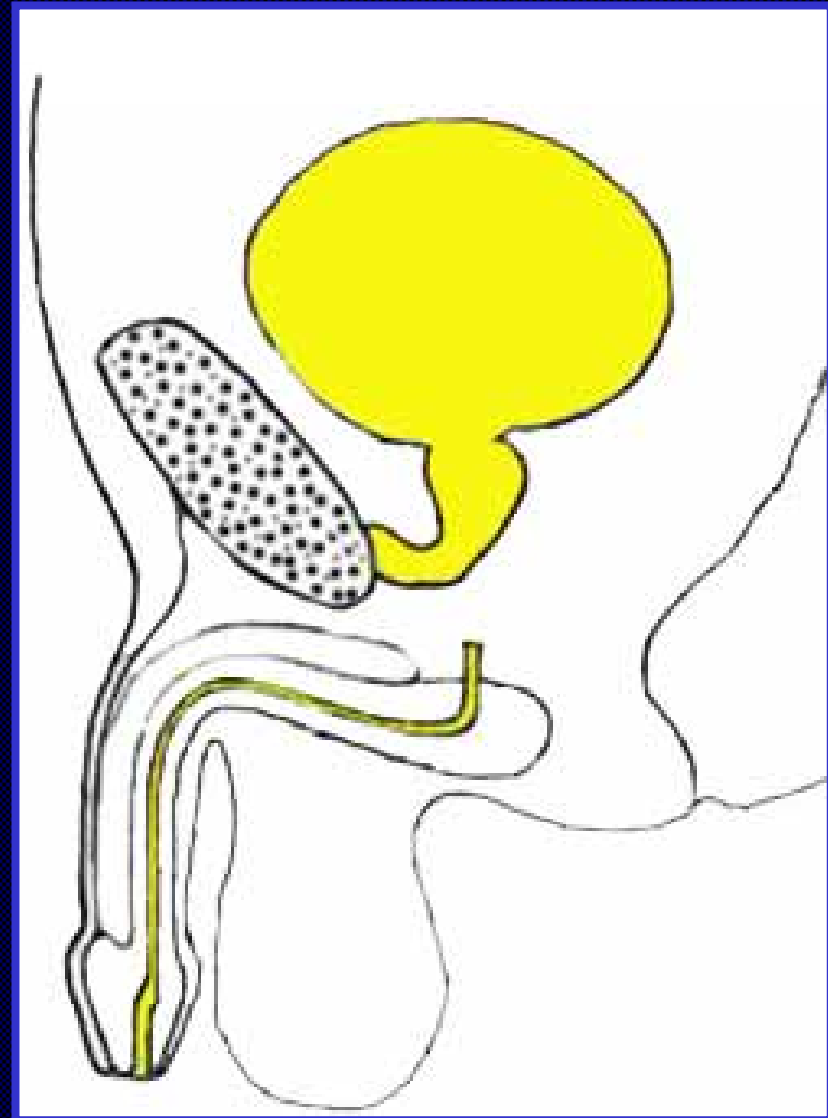
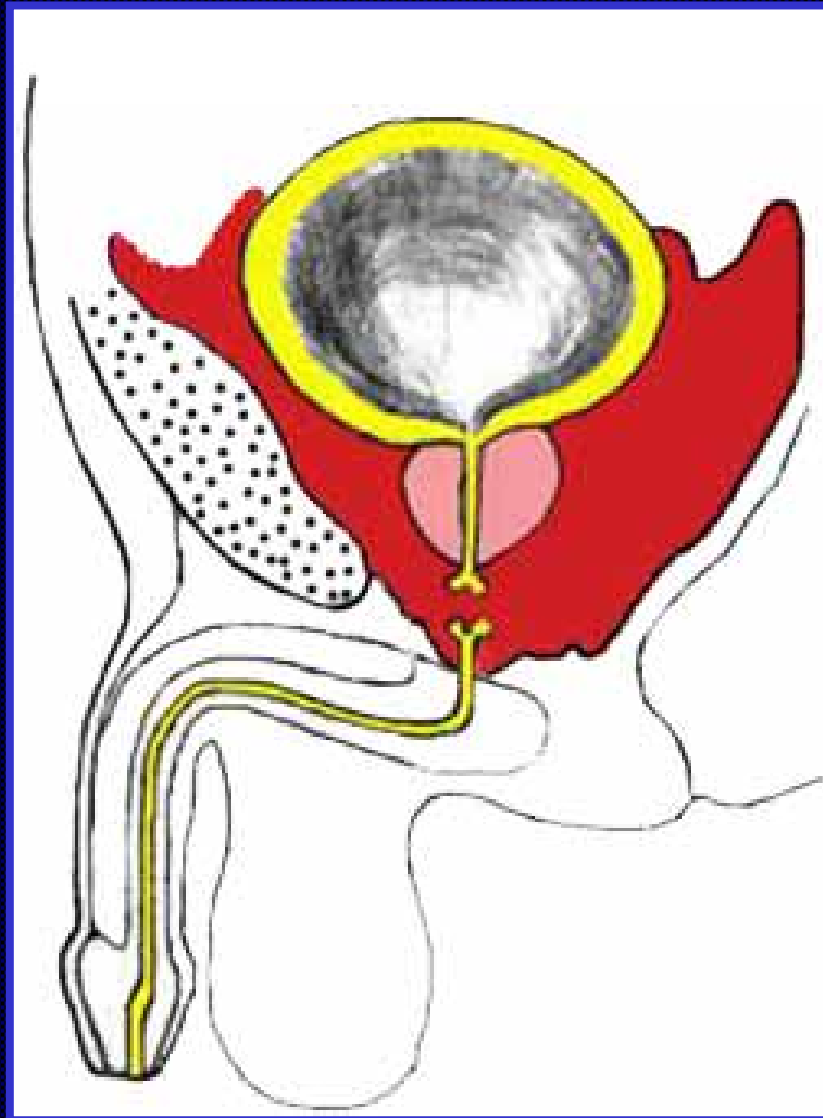






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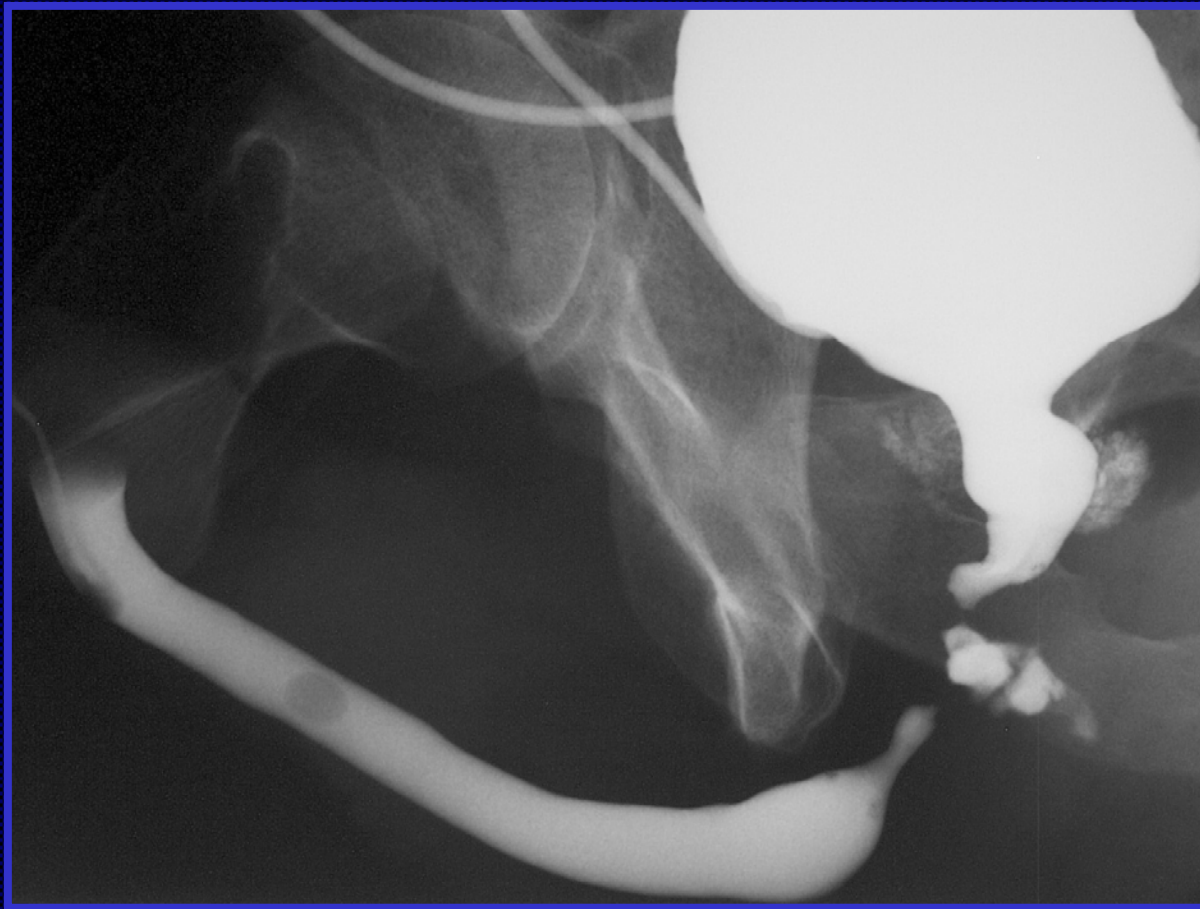




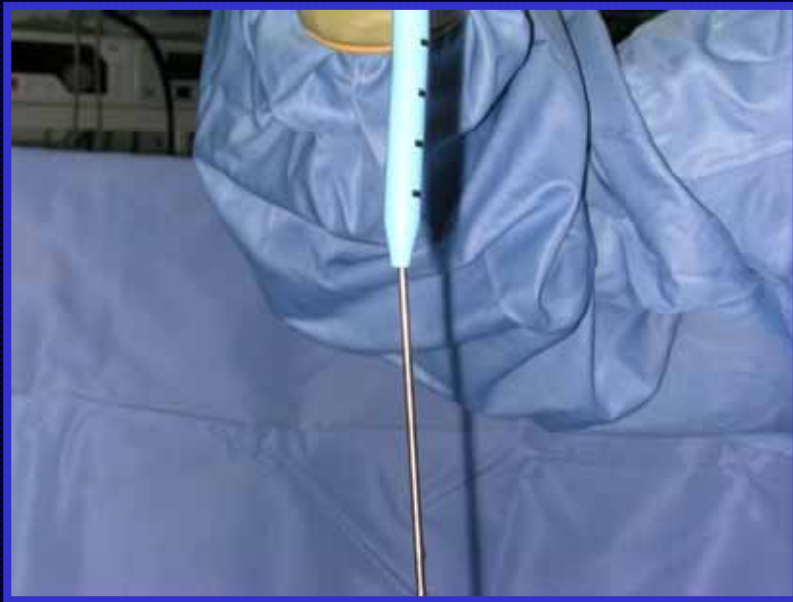




Posterior urethroplasty using a combined endoscopic and surgical approach









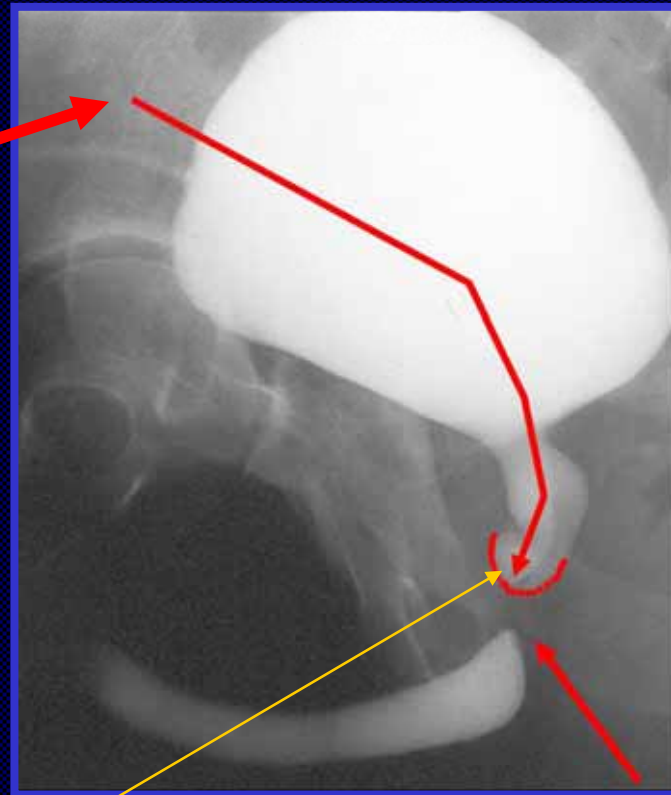
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**suprapubic
endoscopic
approach**

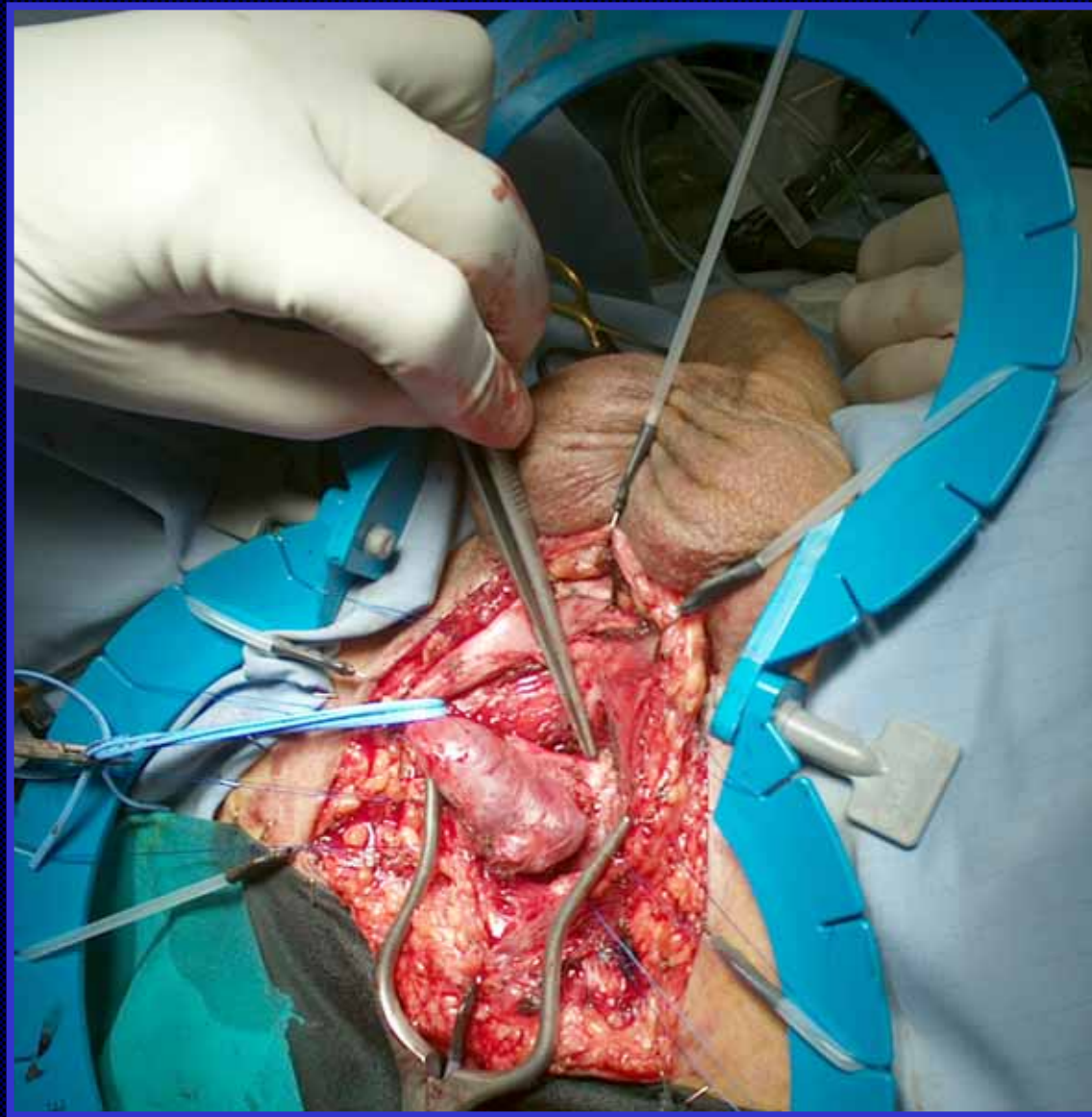


light



perineal surgical approach





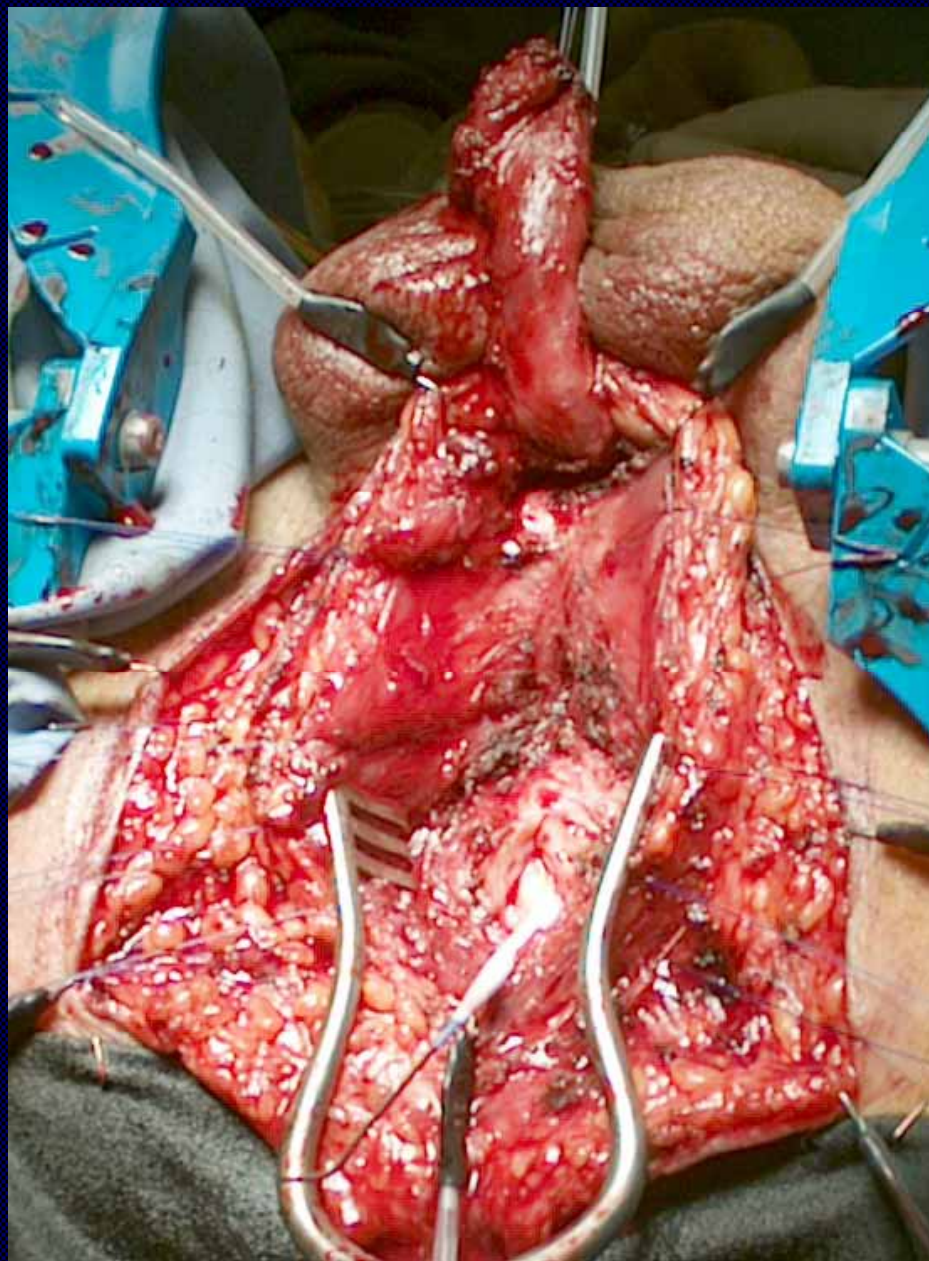
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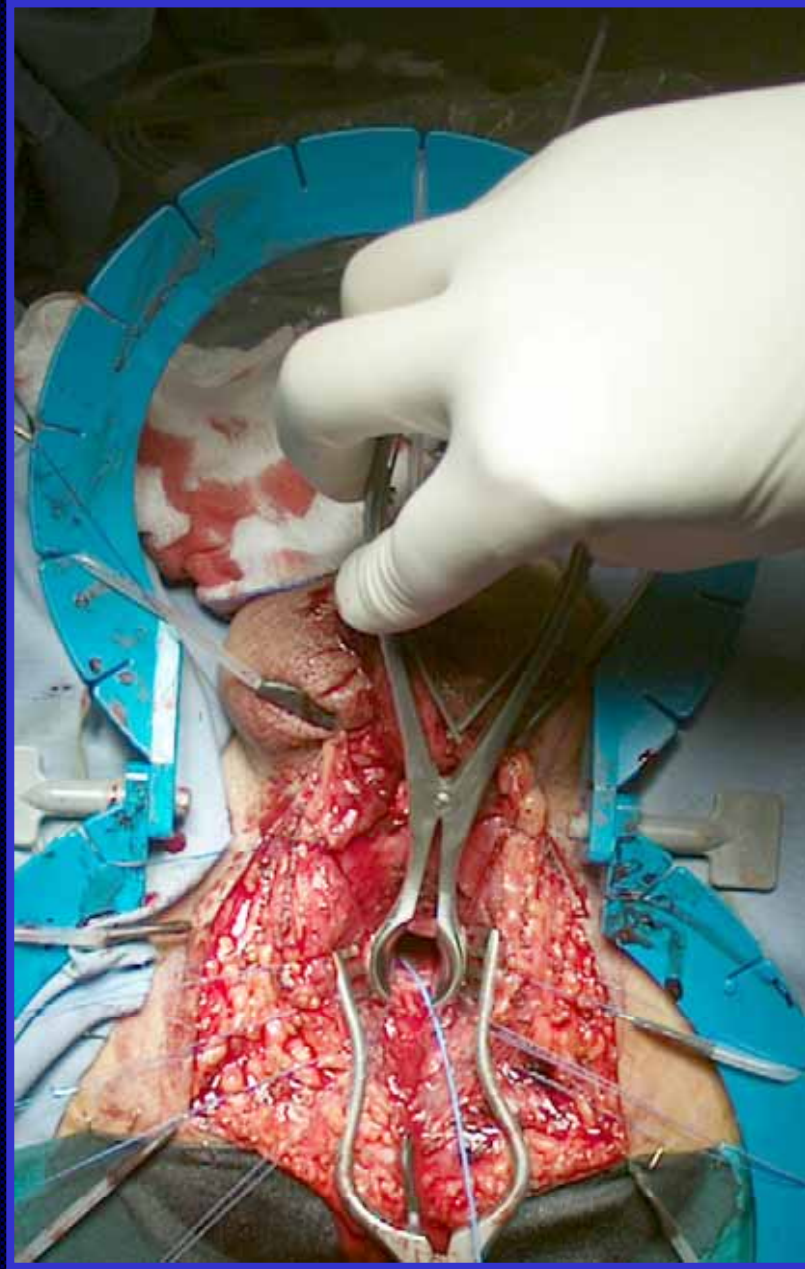




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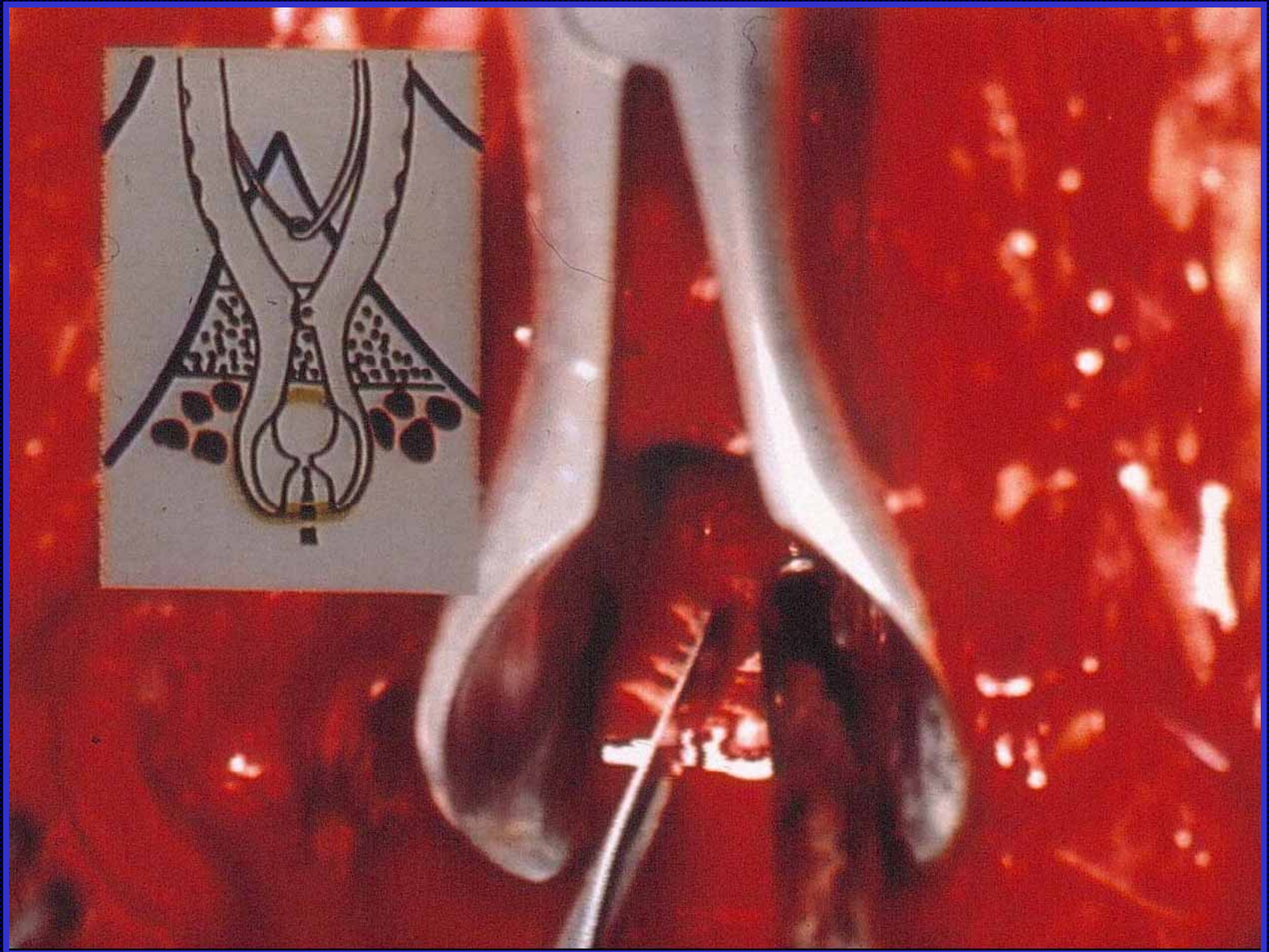


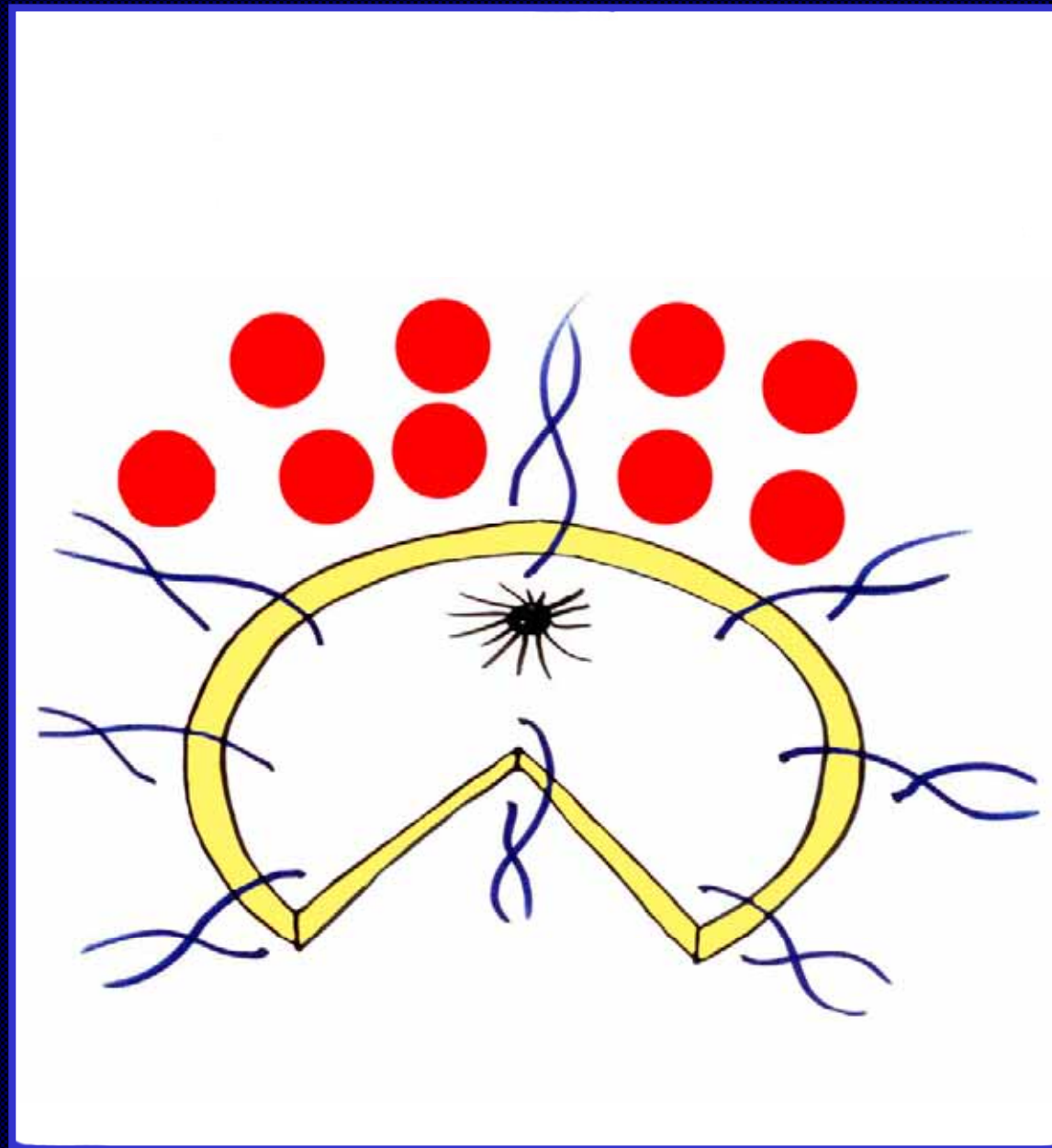


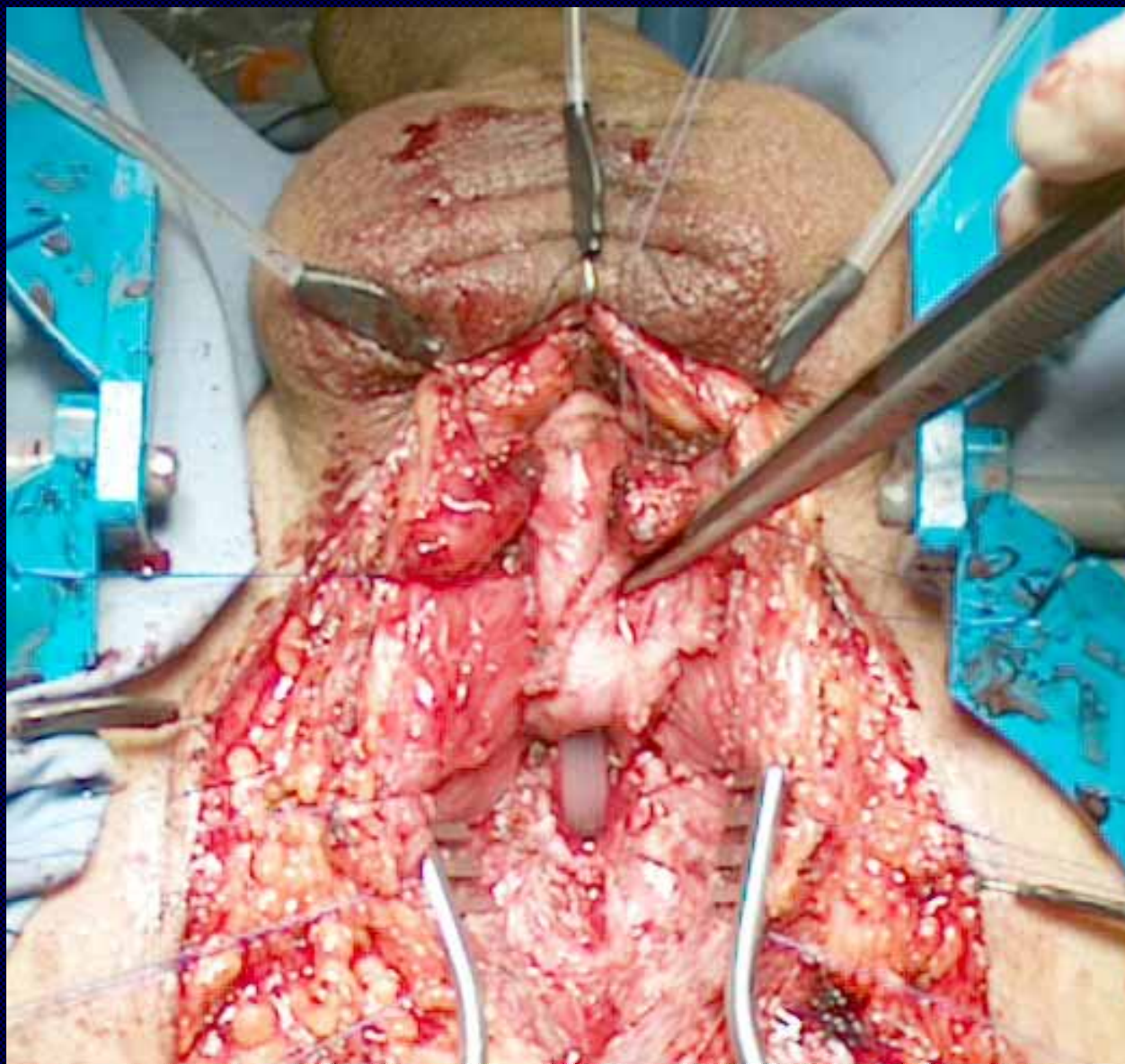


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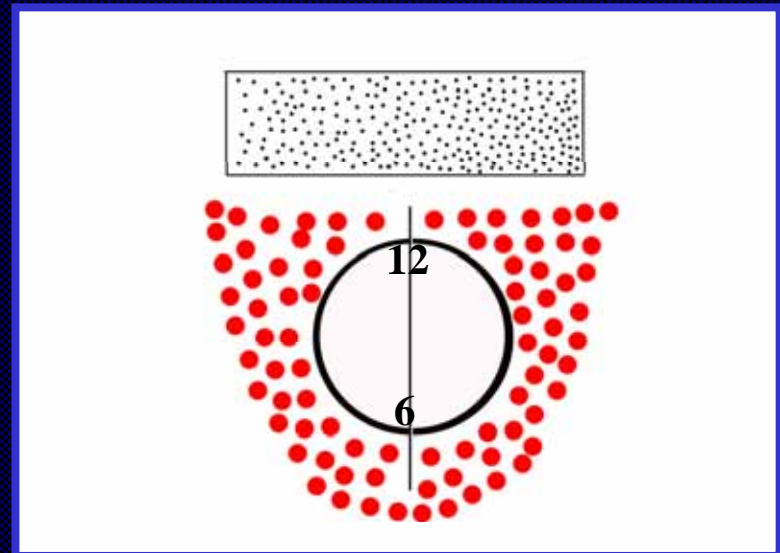


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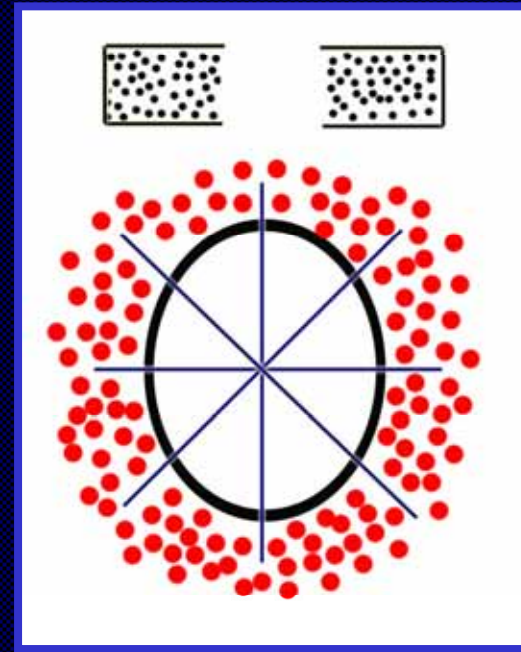
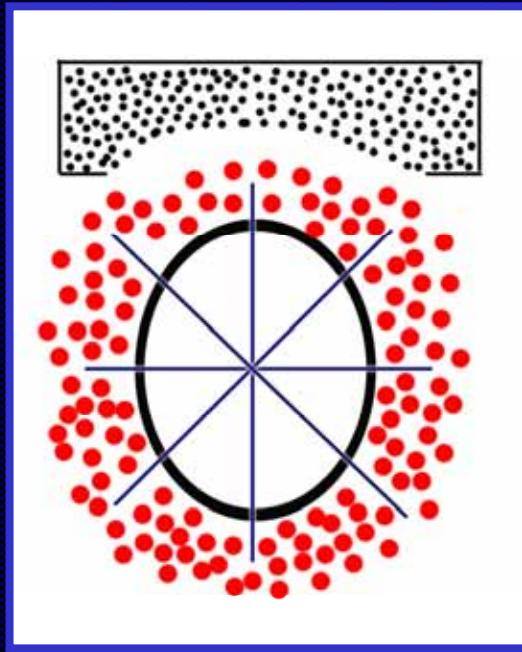
Posterior urethroplasty with neuro-vascular sparing

- simple perineal approach
- Badenoch's pull – through
- Turner – Warwick's scrotal inlay



Posterior urethroplasty with neuro-vascular sparing ?

- Webster's elaborated perineal approach
- transpubic urethroplasty



Surgery of the posterior urethra

stricture

- clinical history
- site
- length

Simple

Complex

erection

- lacking
- diminished
- preserved



Erection following pelvic trauma

before urethroplasty

following
urethroplasty

lacking



lacking

diminished



diminished

preserved



preserved





Looking at the future...



Center for Reconstructive Urethral Surgery



Surgery of the penile urethra

- **Tissue engineering research should provide us with new urethral tissues, including corpus spongiosum**
- **Research should provide us with new medical therapy for patients affected by genital lichen sclerosis**



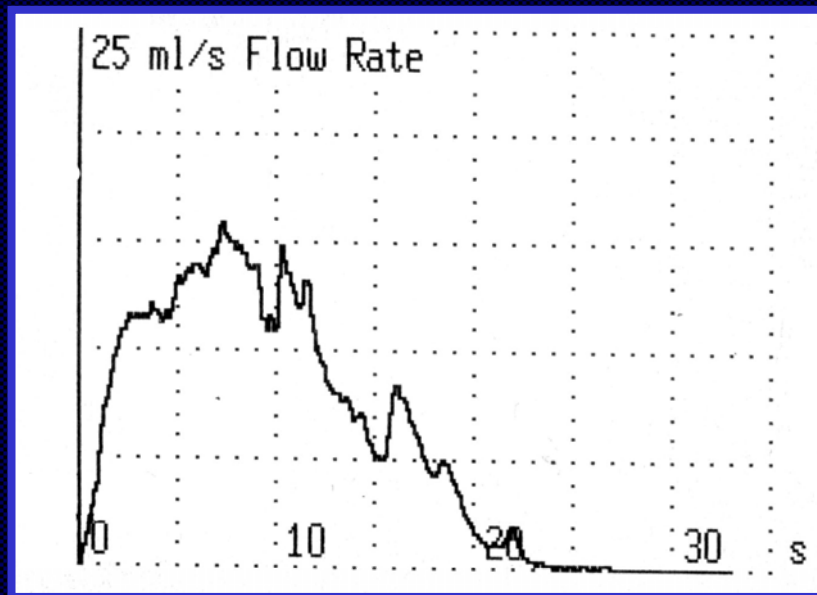
Surgery of the bulbar urethra

- **Urologists involved in the art of reconstructive urethral surgery need to better clarify the factors that actually predispose the patient to postoperative failure and thus make all the necessary surgical modifications to avoid the occurrence of major and minor sexual dysfunctions**



Surgery of the posterior urethra

The repair of urethral disruption or defect should be performed while preserving urinary continence and sexual function



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 !



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