

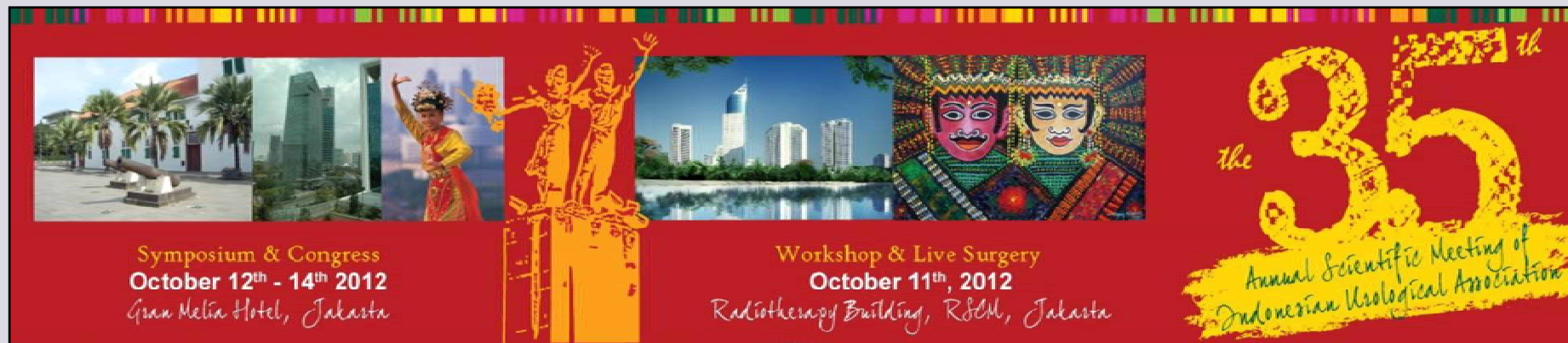
CENTER FOR RECONSTRUCTIVE URETHRAL SURGERY



GUIDO BARBAGLI, M.D.
Arezzo - Italy

e-mail: info@urethralcenter.it

Websites: www.uretra.it
www.urethralcenter.it



35th Annual Scientific Meeting Indonesian Urological Association

October 11 – 14, 2012

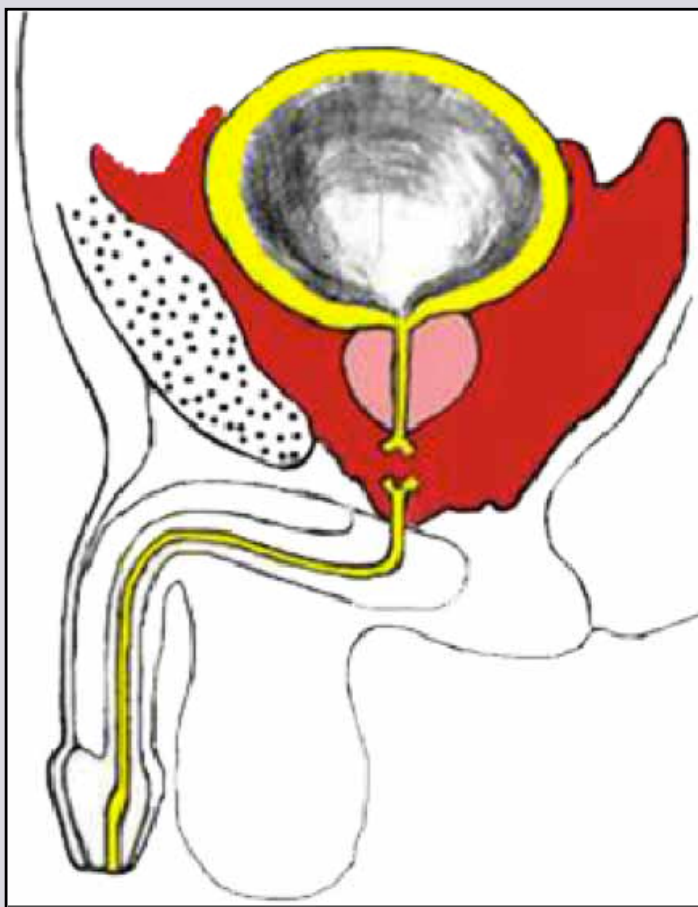
Jakarta - Indonesia

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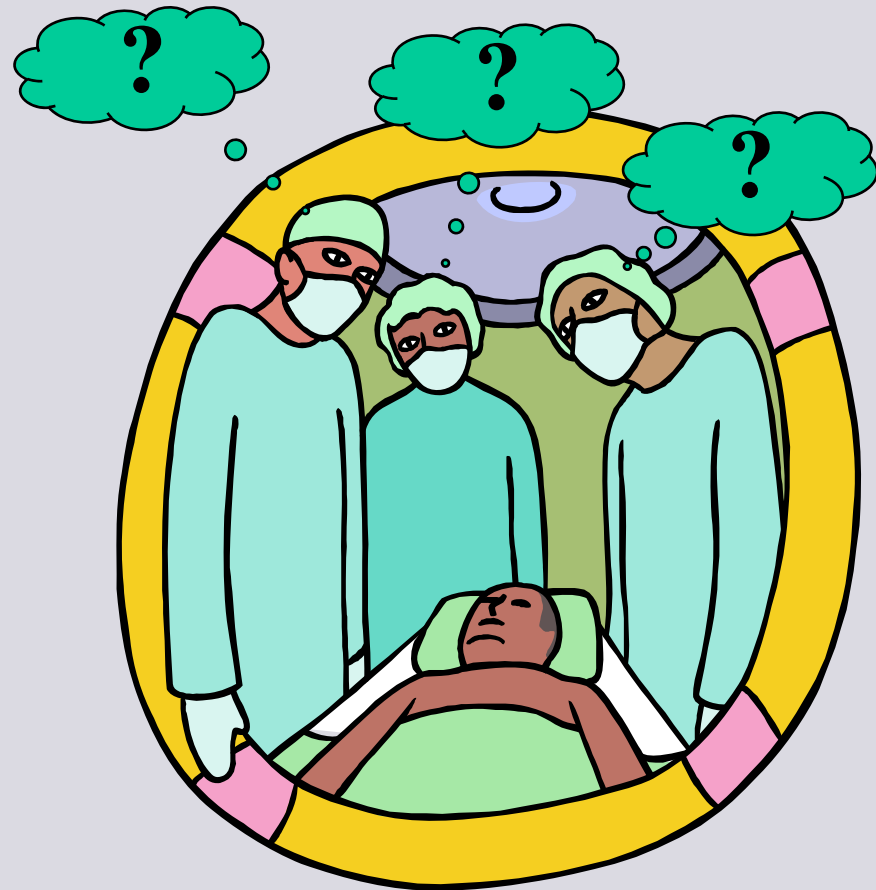
Emergency and delayed treatment of patients with pelvic fracture urethral distraction defects (PFUDD)

Emergency treatment of patients with pelvic fracture urethral distraction defects



Pelvic fracture urethral distraction defects PFUDD

- orthopedic surgeon
- general surgeon
- vascular surgeon
- thoracic surgeon
- urologic surgeon



Mr. Richard Turner-Warwick

**“... It is the urologist who will have to share, with the patient,
the burden of any residual urological disability
when the thoracic, the abdominal, and even the
orthopaedic aspects are probably long forgotten ”**

Urol Clin North Am 1989, 16: 335-358

Goal of the initial evaluation and management of the patient with PFUDD

The immediate concern, in the patient with PFUDD, is resuscitation of the patient to preserve life

Divert urine away from the site of injury

Preserve the residual sphincter mechanism at the bladder neck

Avoid jeopardizing sexual function residual to the trauma

Emergency treatment of posterior urethral trauma

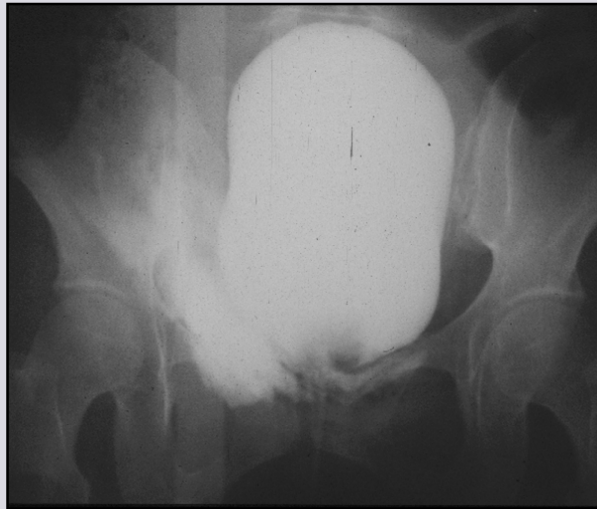
suprapubic urinary diversion
immediate

endoscopic urethral realignment
7 – 15 days following trauma

delayed urethroplasty
4 months following trauma

Management of posterior urethral trauma with associated lesions

→ immediate surgical repair ←



bladder

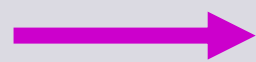


bladder neck

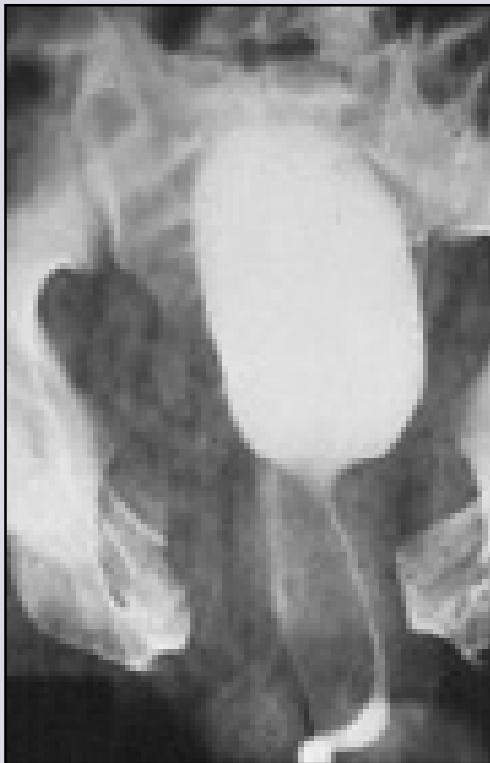
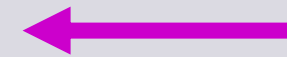


rectum

Management of posterior urethral trauma without associated lesions



suprapubic cystostomy



stretched



partial rupture



complete rupture

Why ?

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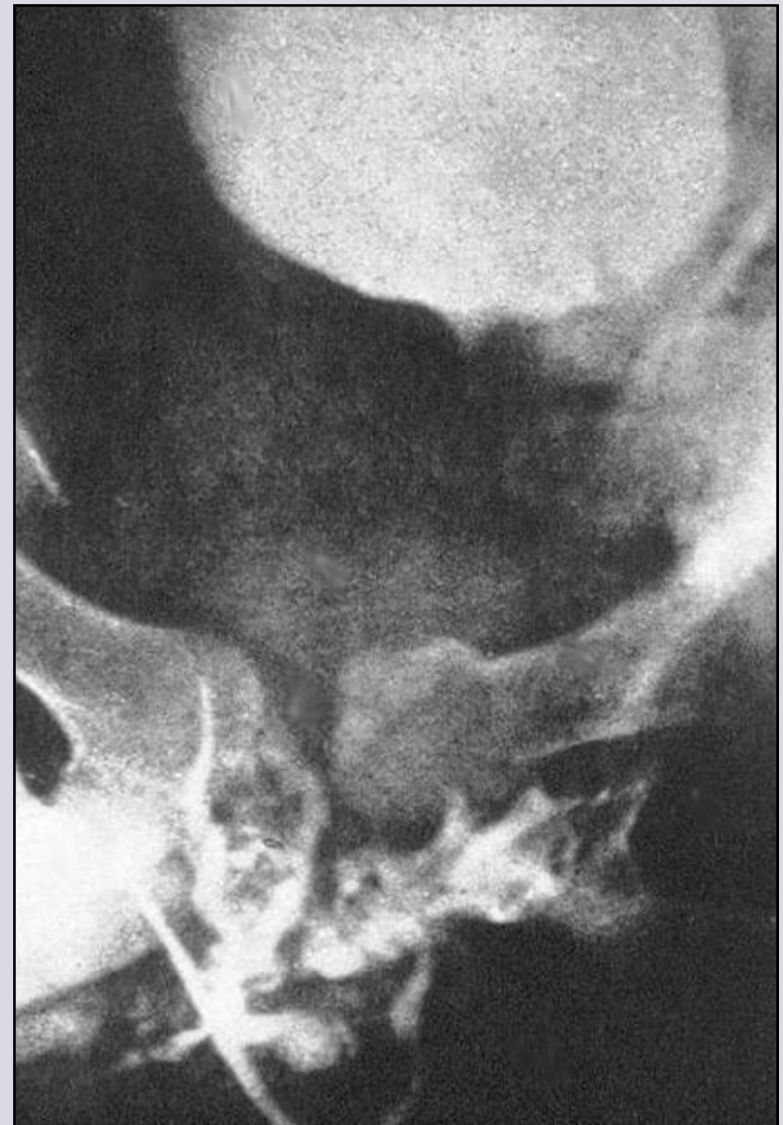
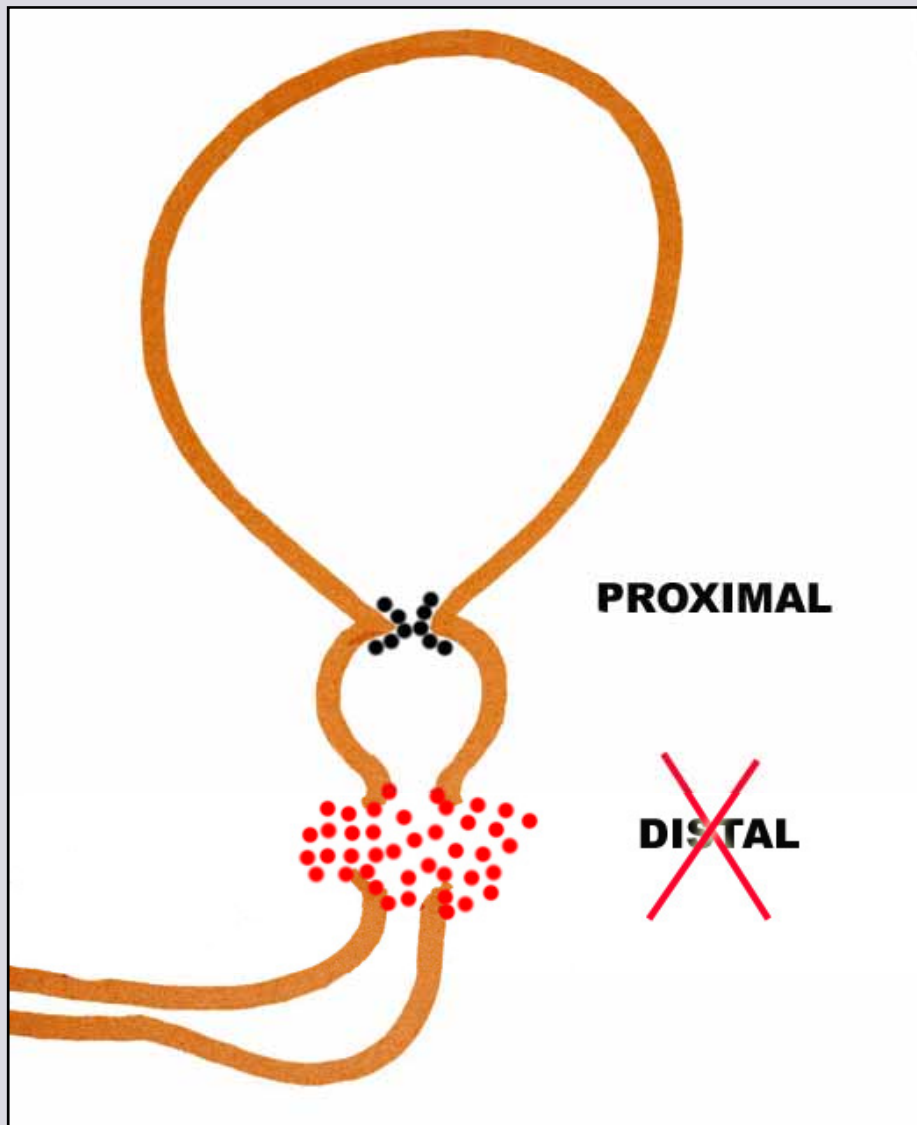
Goal of the initial evaluation and management of the patient with PFUDD

The immediate concern, in the patient with PFUDD, is resuscitation of the patient to preserve life

Divert urine away from the site of injury

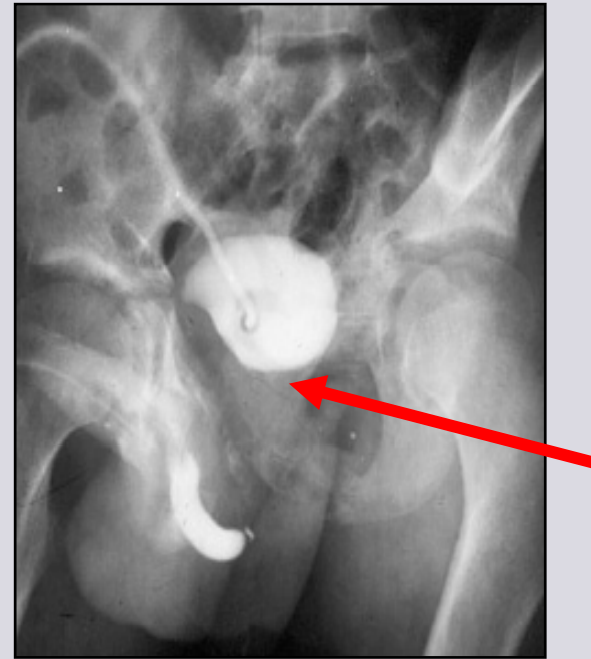
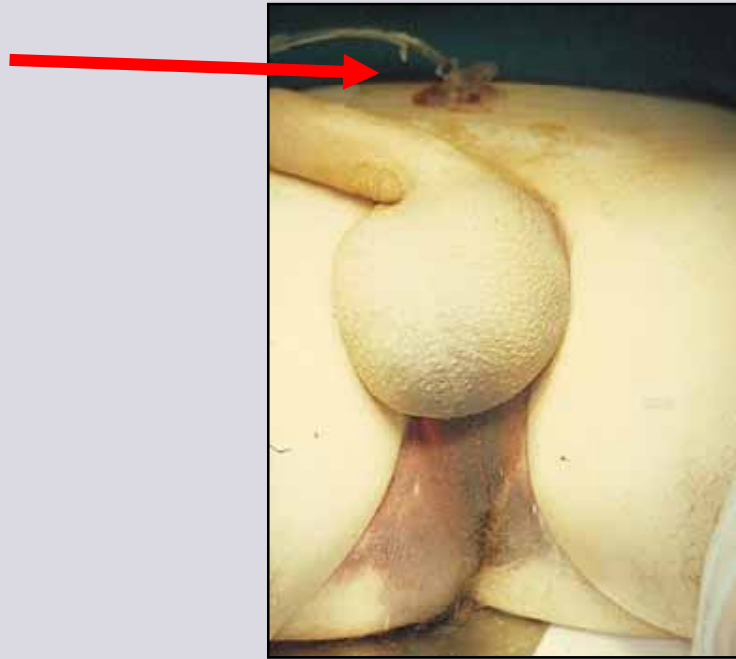
Preserve the residual sphincter mechanism at the bladder neck

Avoid jeopardizing sexual function residual to the trauma



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**Suprapubic cystostomy is the only method than can surely avoid
to damage the bladder neck, thus fully preserving urinary
continence !**

Emergency treatment of posterior urethral trauma

immediate suprapubic urinary diversion

→ **empty the bladder and release pain due to the over distended bladder**

→ **divert urine away from the site of injury**

→ **perform a cystography**

Endoscopic urethral realignment



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Endoscopic urethral realignment

appropriate operating room

appropriate instruments

appropriate patient

appropriate surgeon

Endoscopic urethral realignment

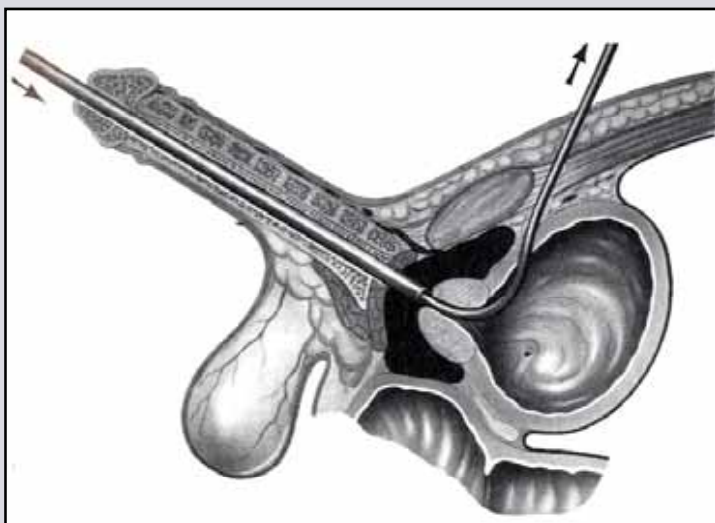


appropriate operating room ?

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Endoscopic urethral realignment



appropriate instruments ?

Endoscopic urethral realignment



appropriate patient ?

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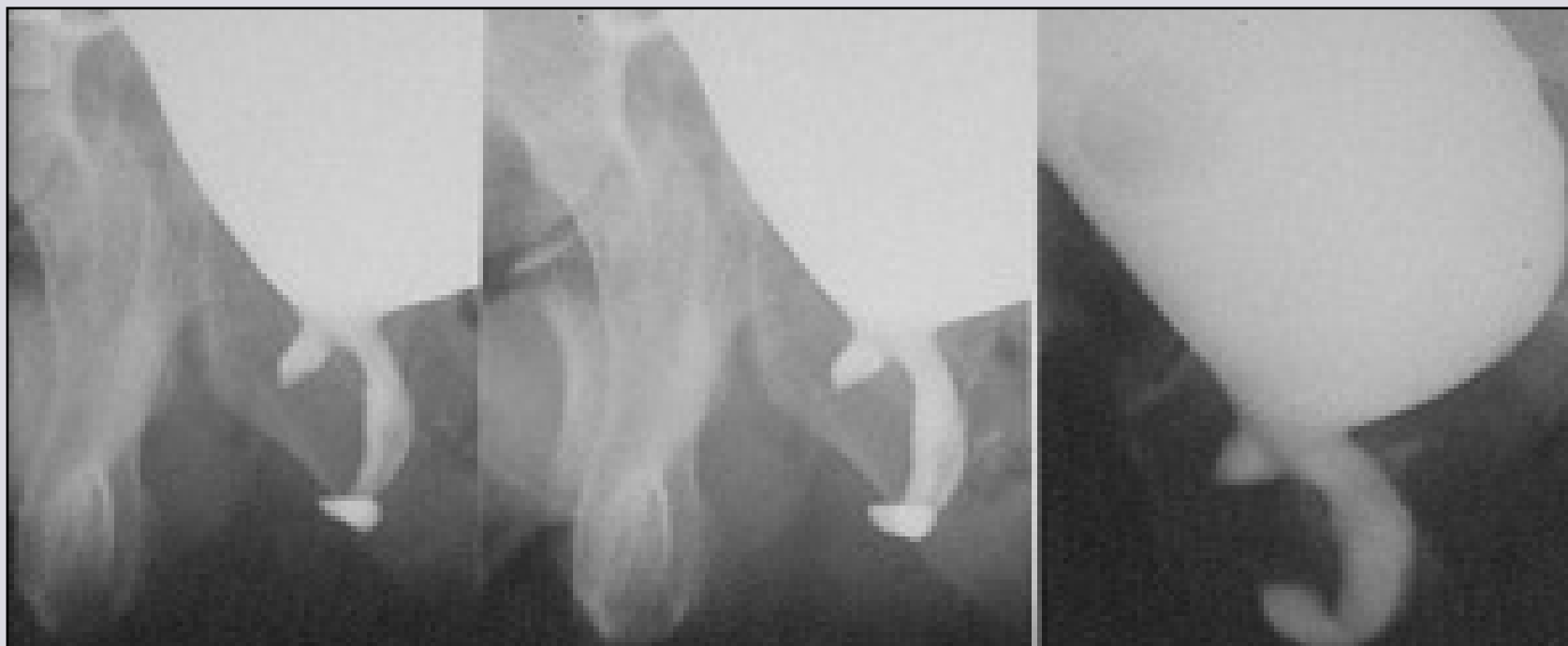
Endoscopic urethral realignment



appropriate surgeon ?

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**Four-hours emergency (?) urethral realignment in the
plaster-cast room (?)**



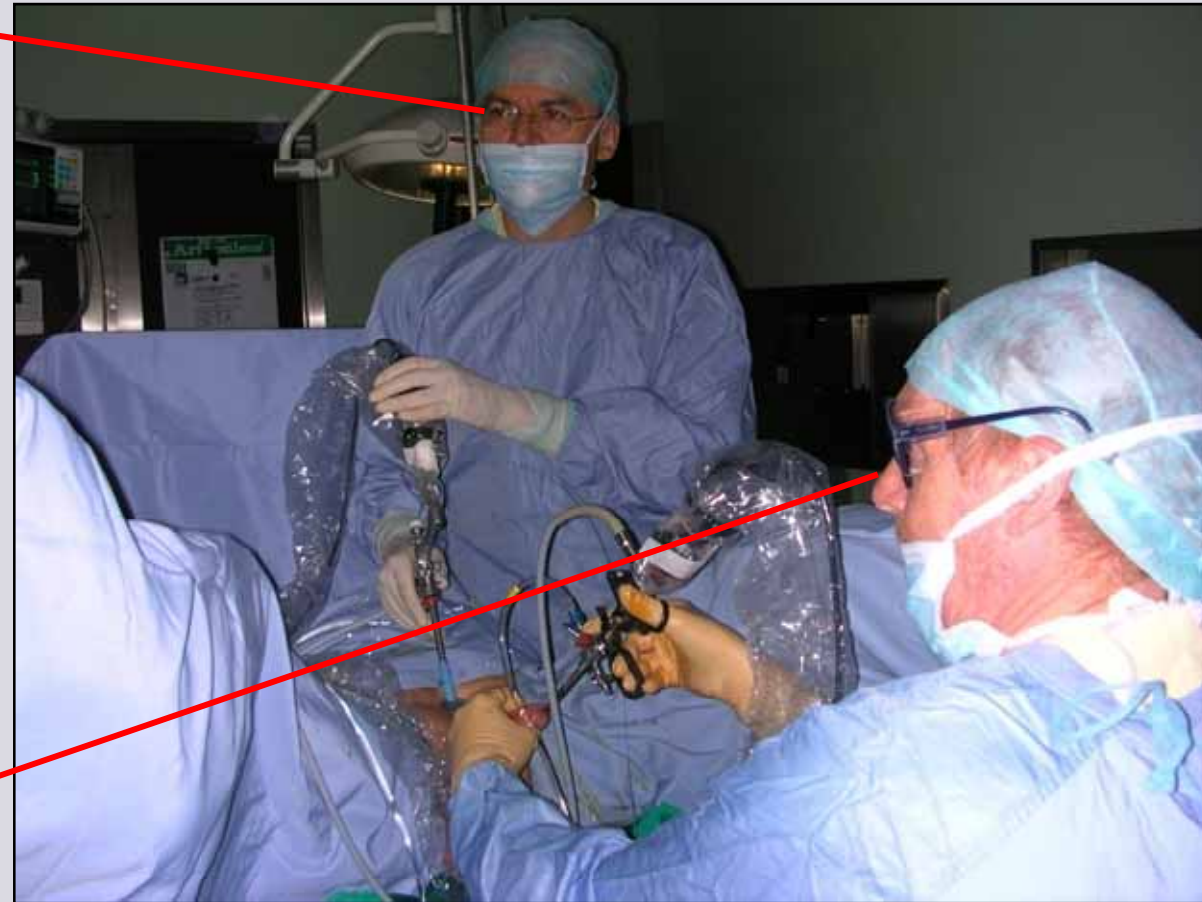
Five-hours emergency (?) urethral realignment

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In one week, this patient underwent **five attempts (?) to perform endoscopic and surgical urethral realignment**



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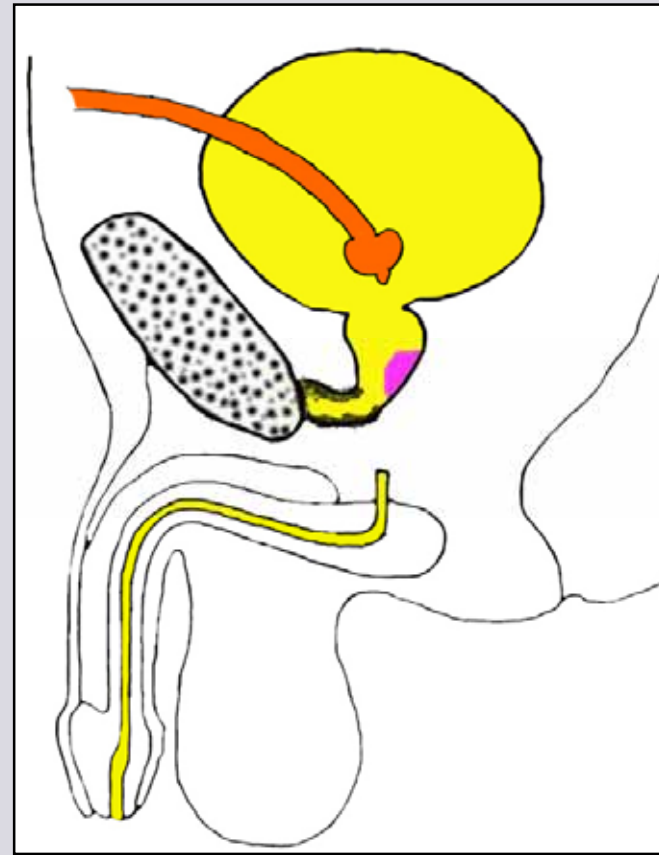
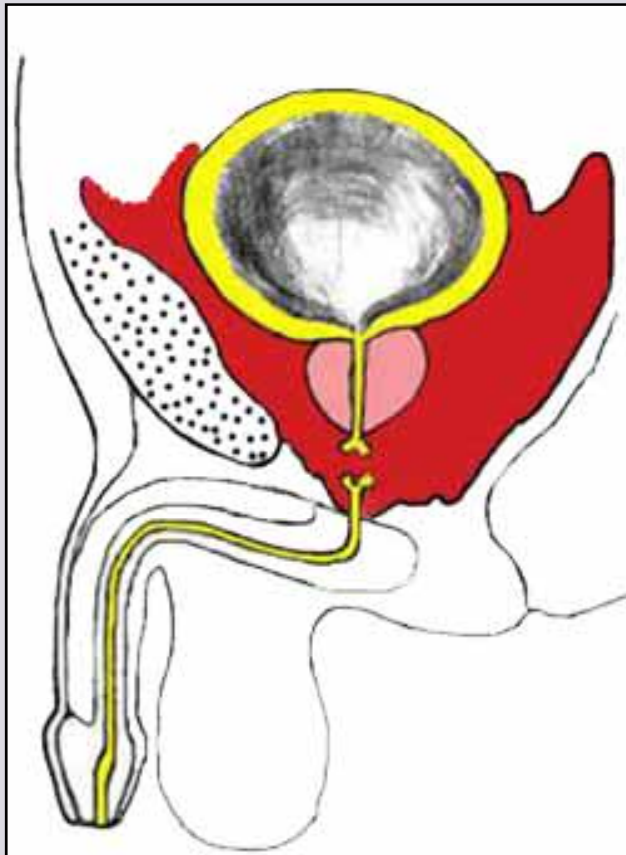
Endoscopic urethral realignment

7 – 15 days following trauma

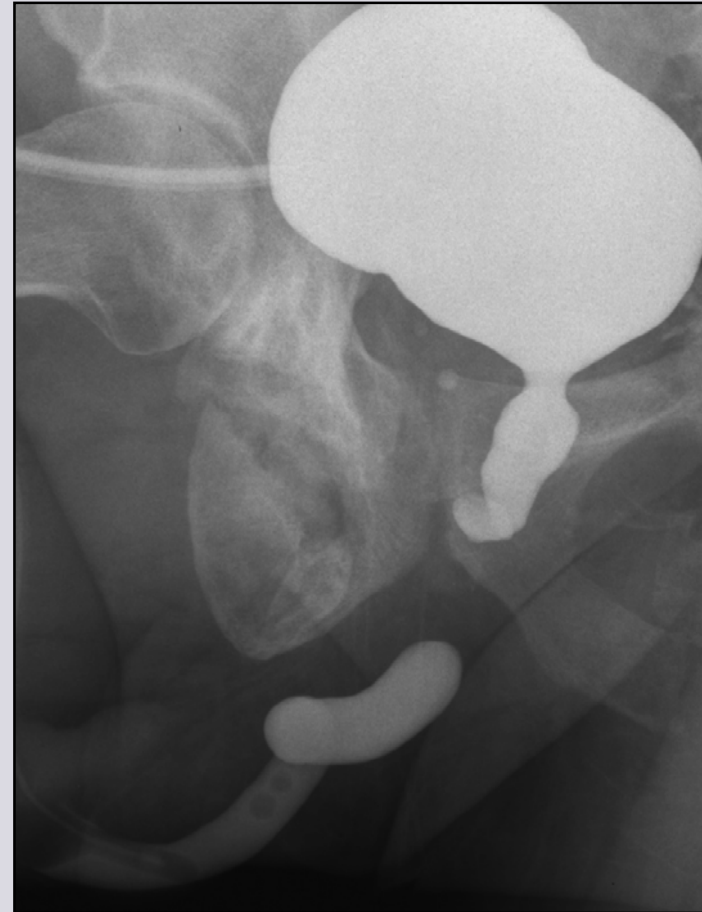
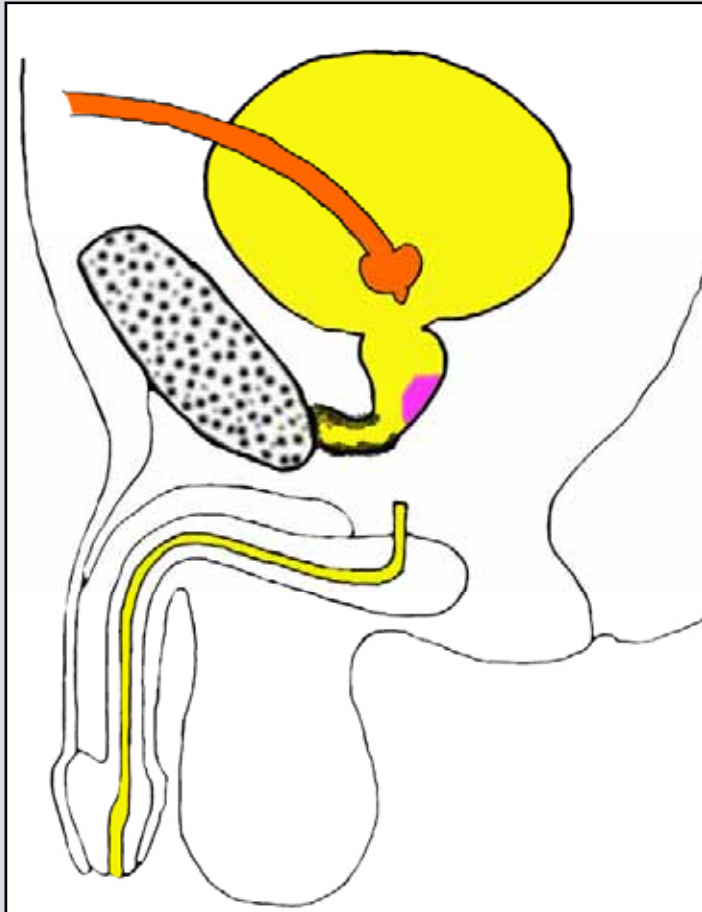
Why ?

NO

Endoscopic urethral realignment



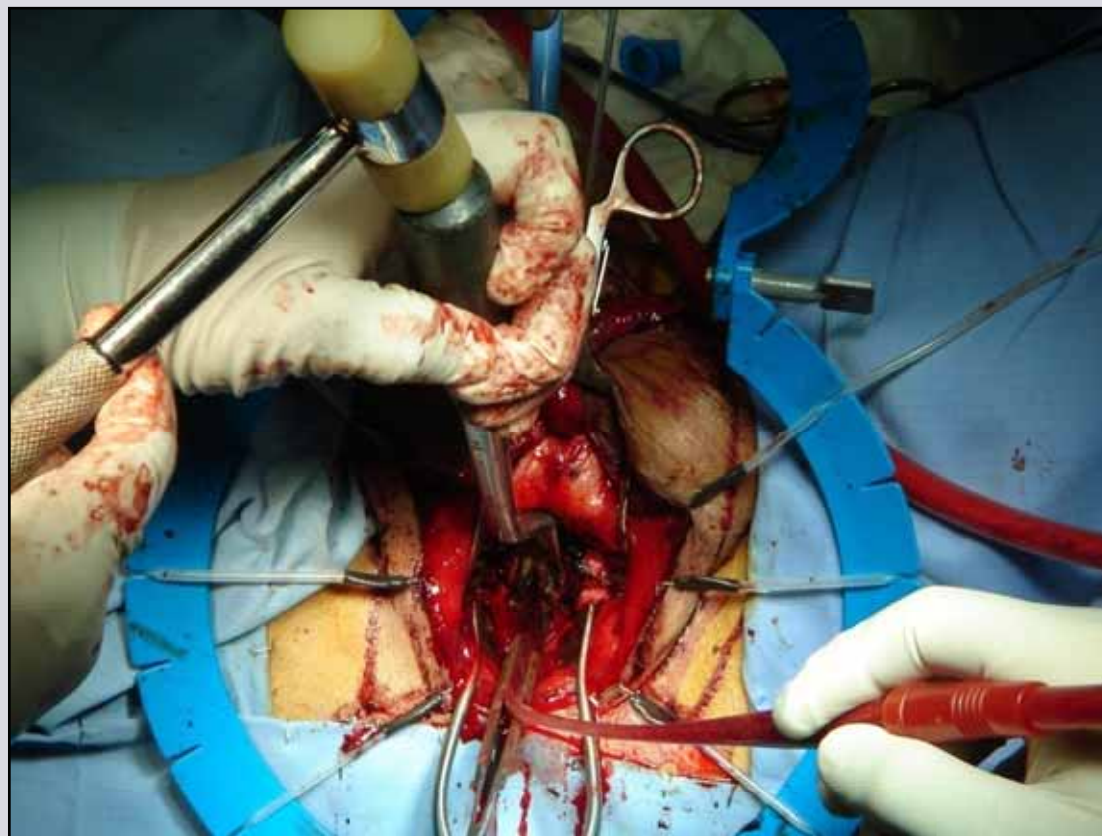
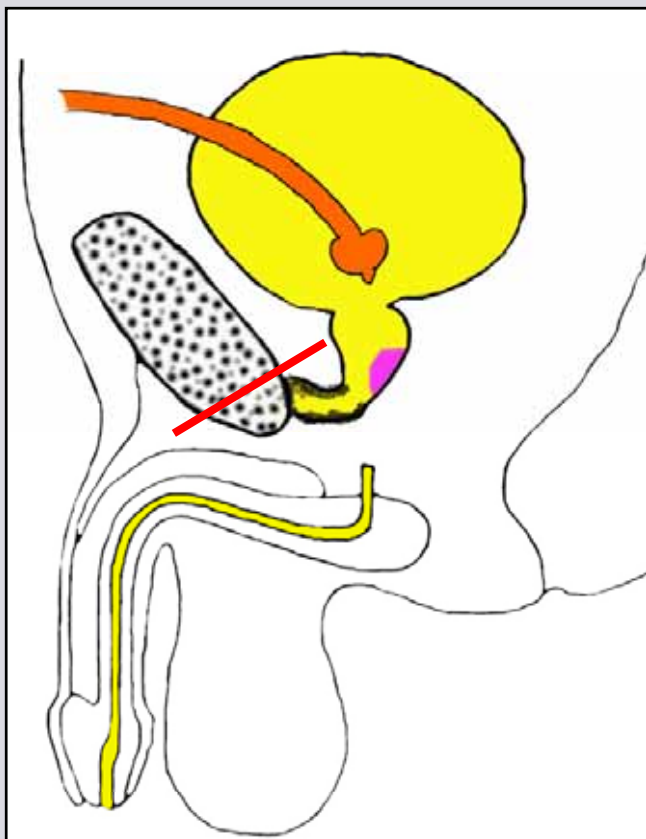
Complex obliterative posterior urethral stricture



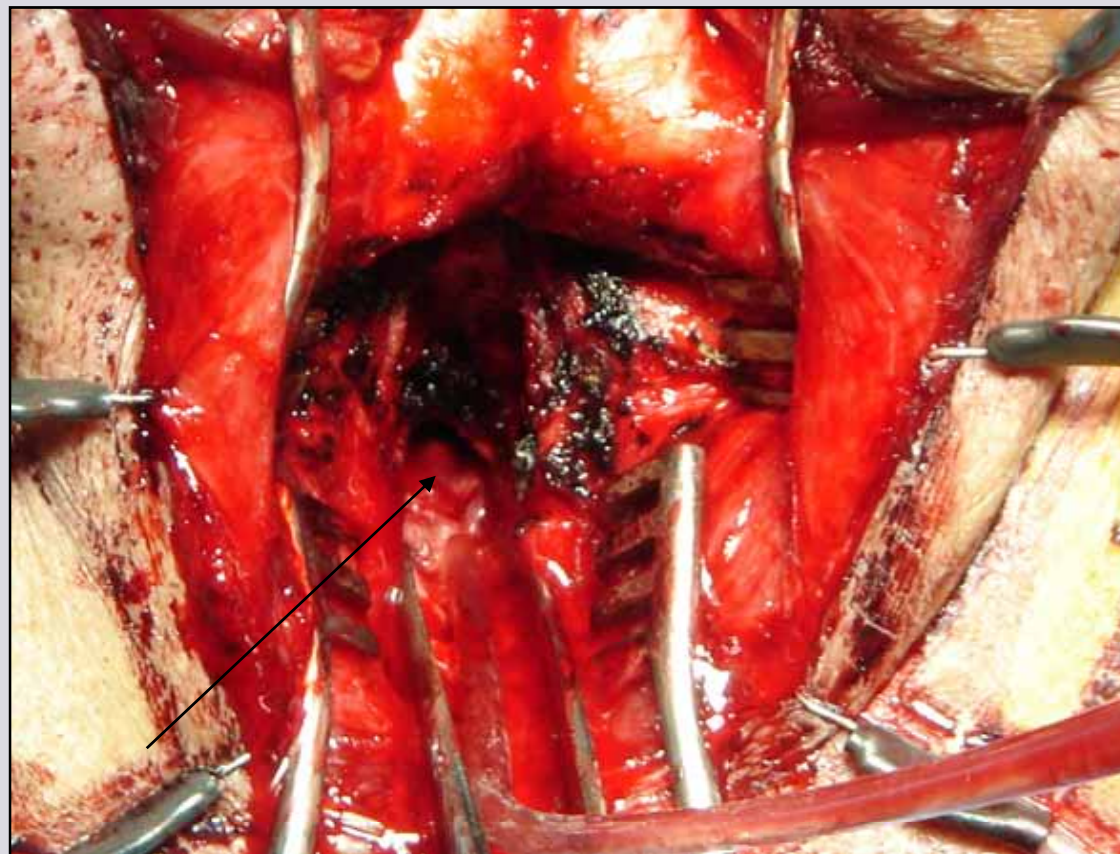
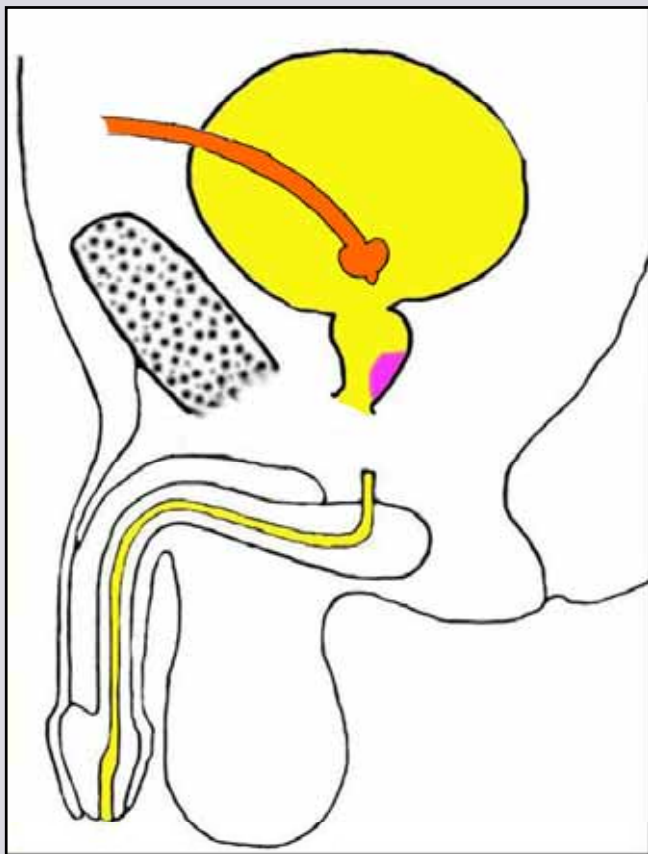
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Perineal pubectomy

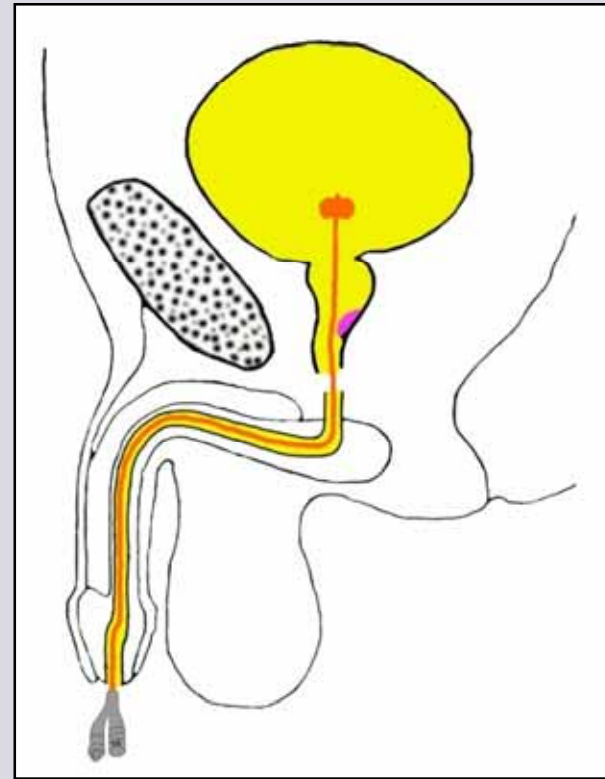
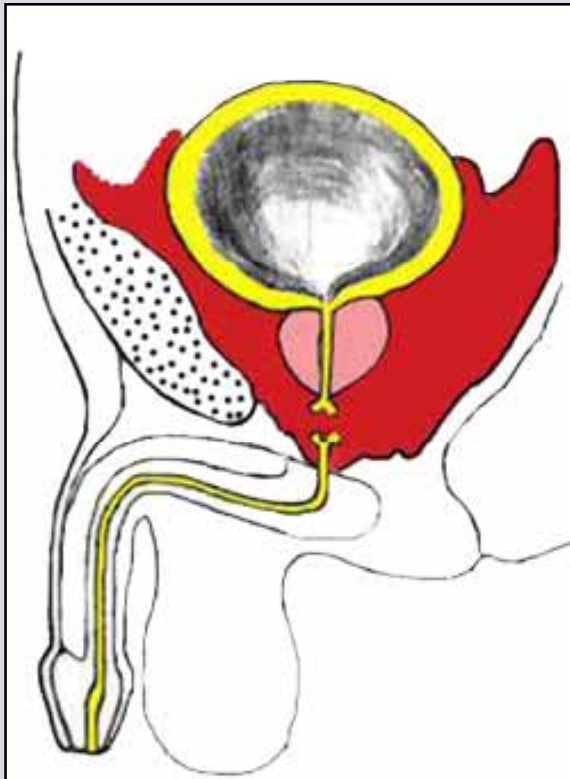


Perineal pubectomy



YES

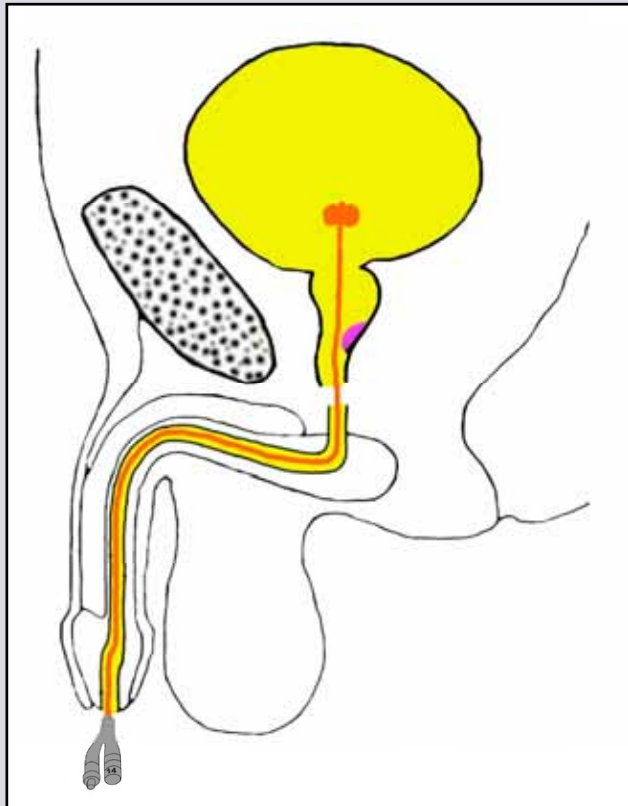
Endoscopic urethral realignment



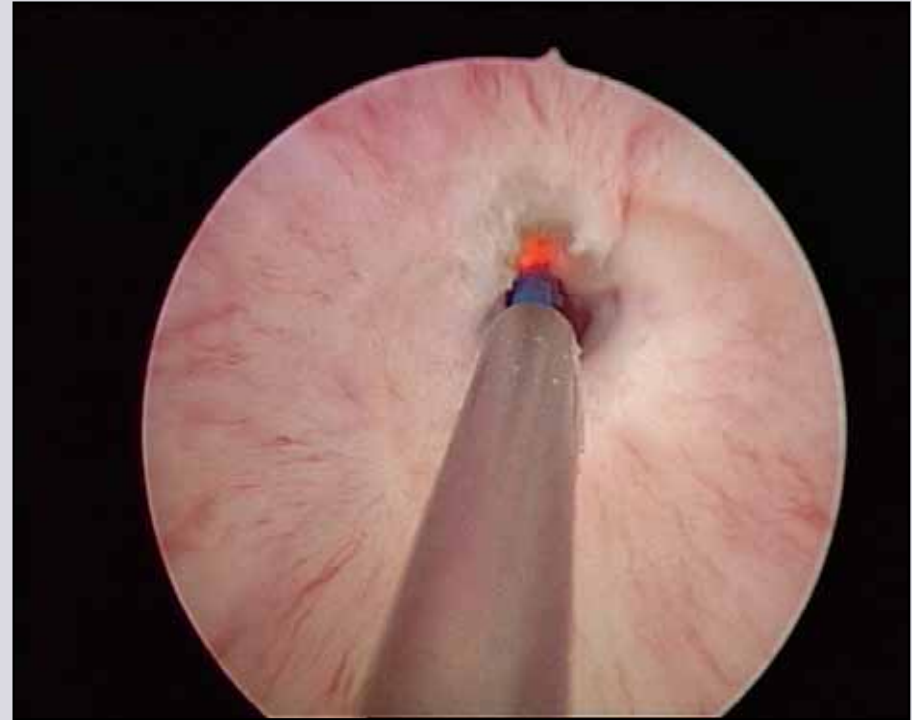
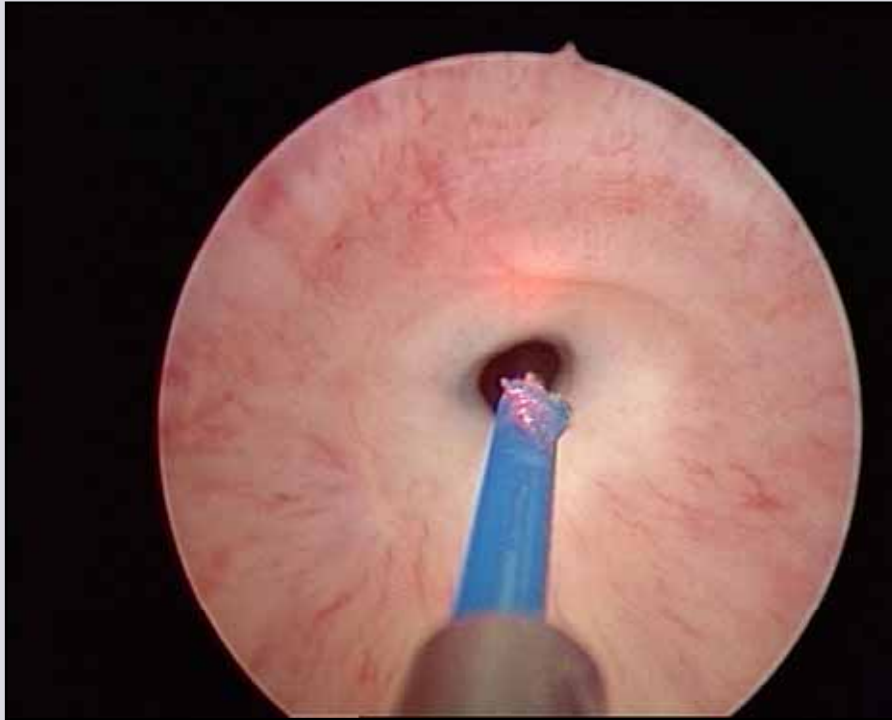
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Simple no-oblitative posterior urethral stricture



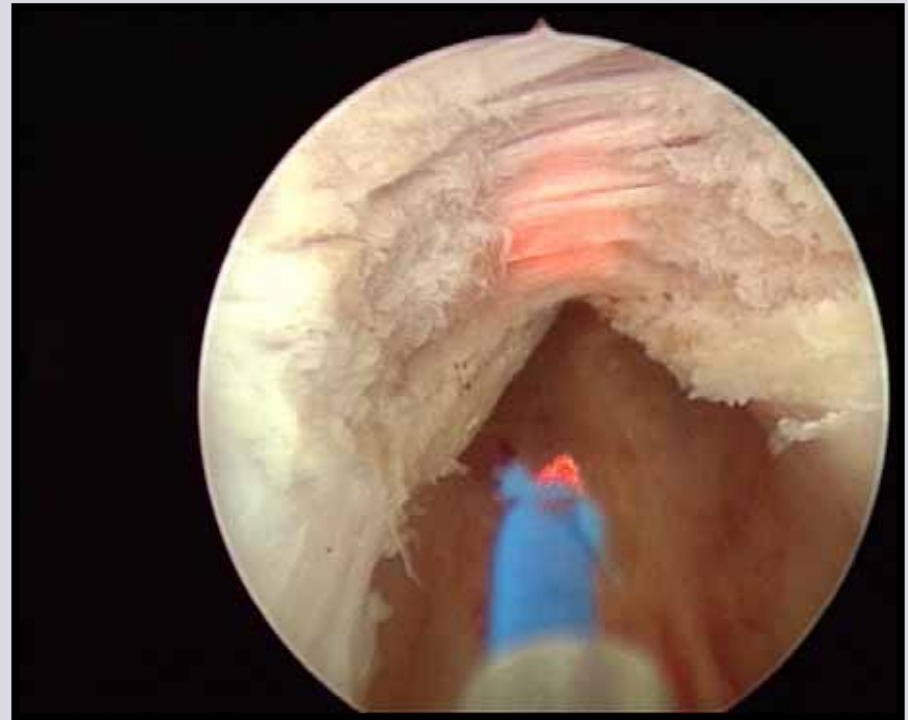
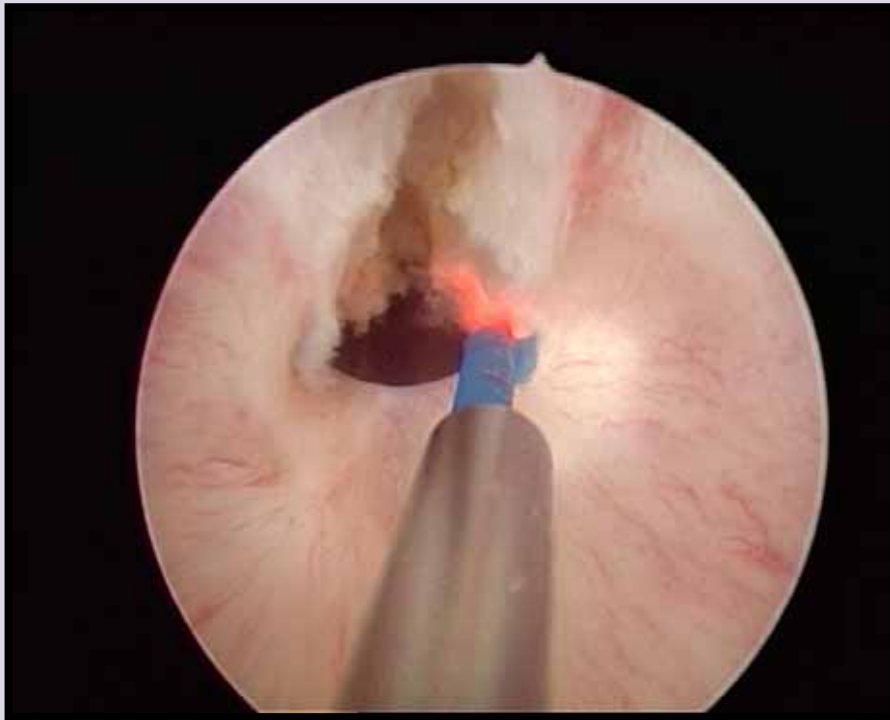
Holmium laser urethrotomy



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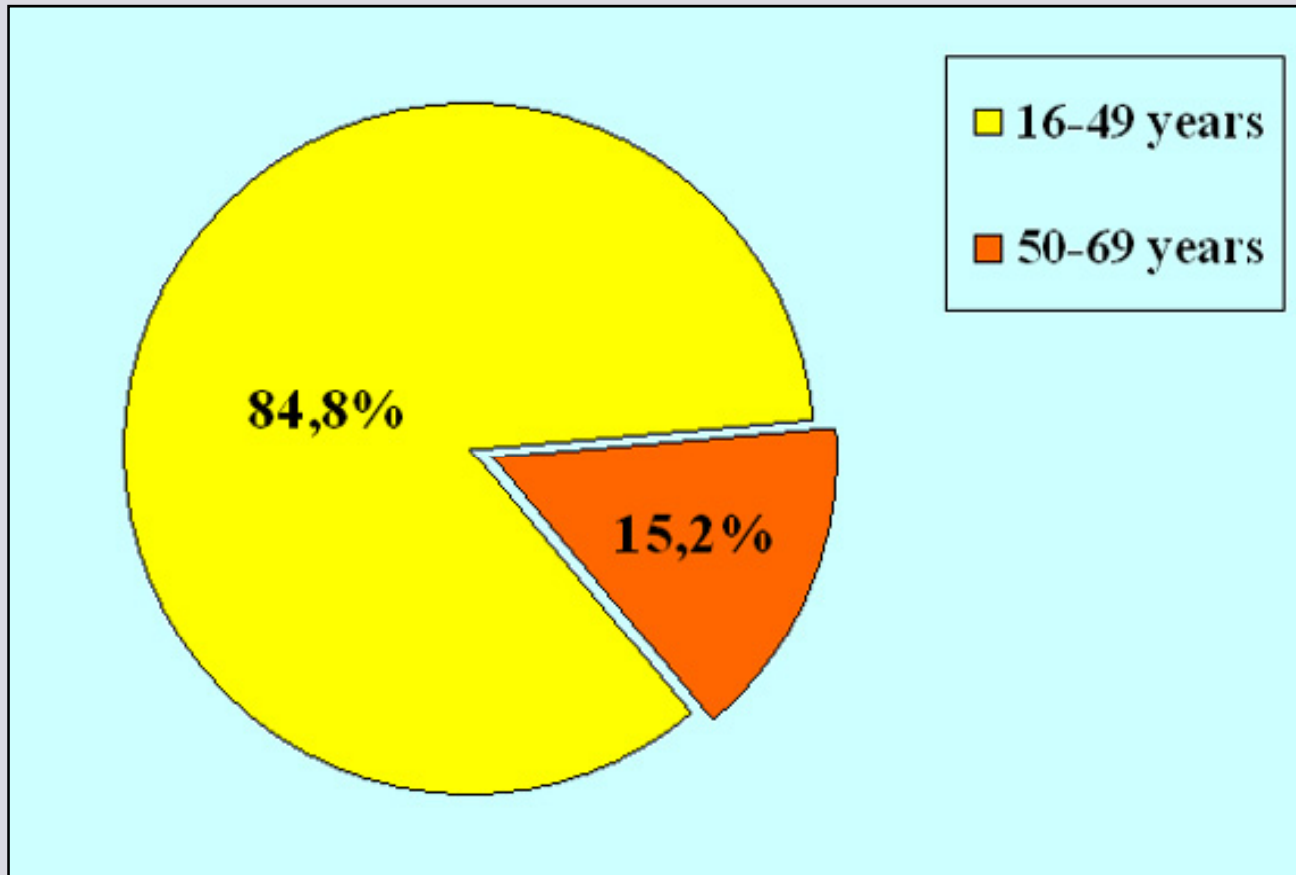
Holmium laser urethrotomy



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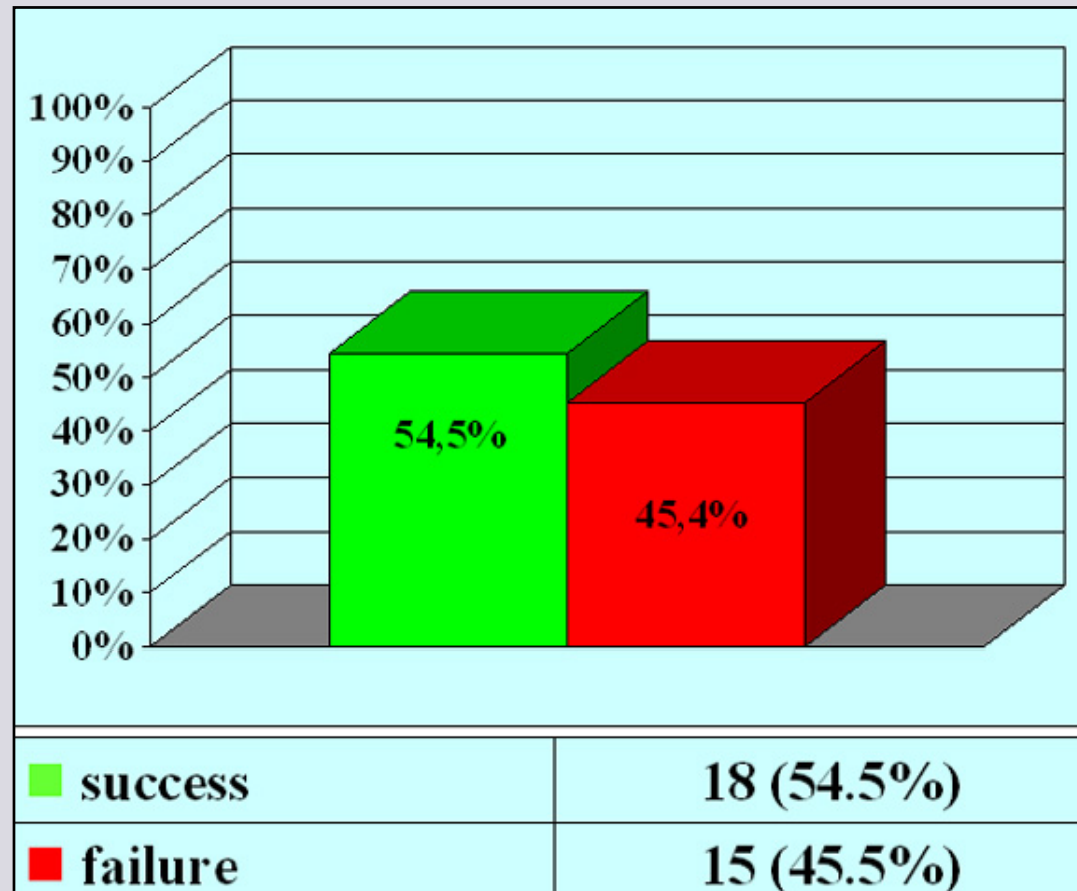
Results on 33 patients who underwent holmium laser urethrotomy for traumatic posterior urethral strictures



Age

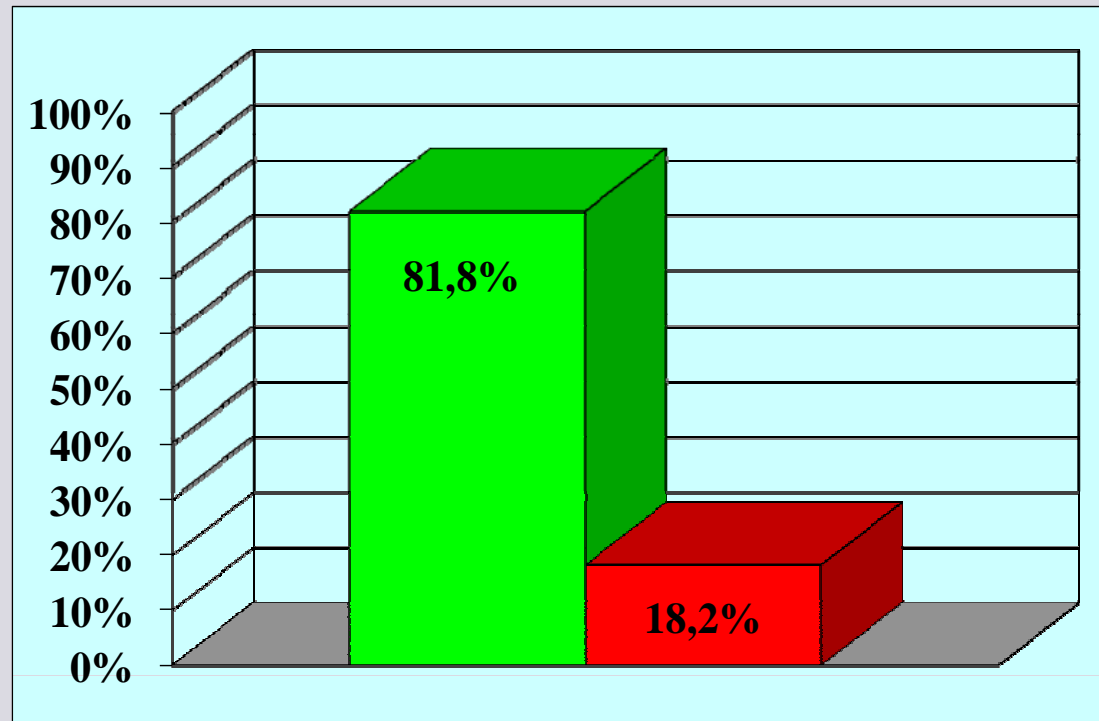
Mean follow-up 73 months (12 – 125 months)

Results on 33 patients who underwent holmium laser urethrotomy



Result after one urethrotomy

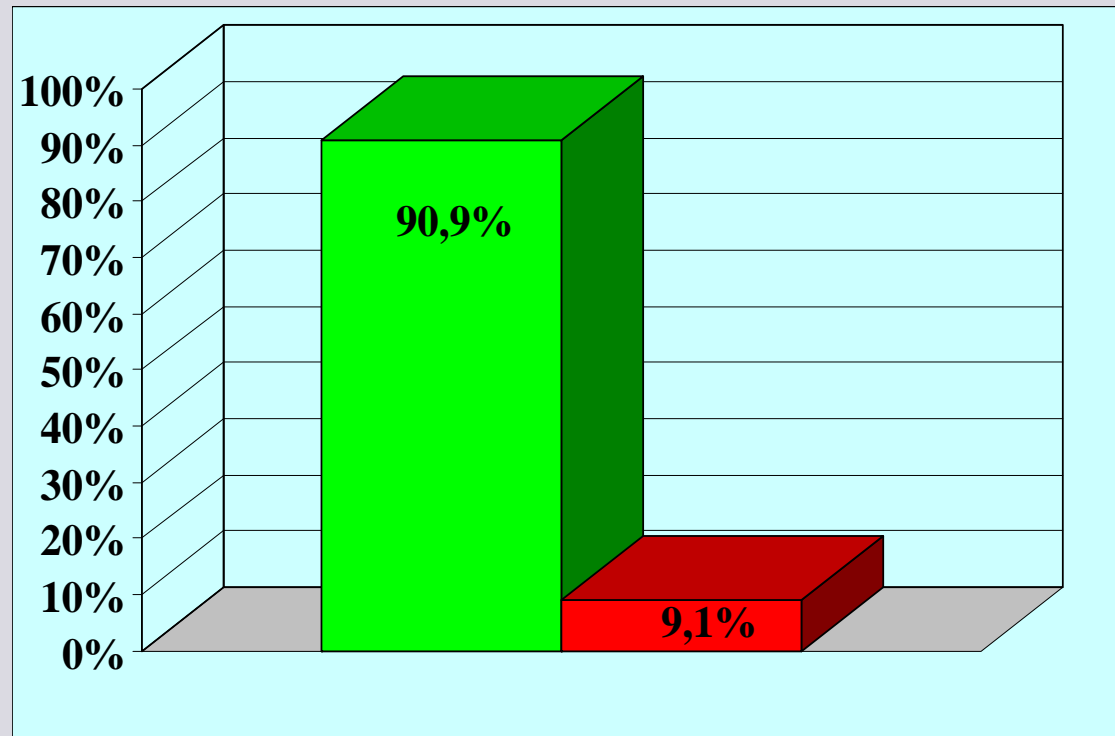
Results on 33 patients who underwent holmium laser urethrotomy



■ success	27 (81.8%)
■ failure	6 (18.2%)

Result after two urethrotomies

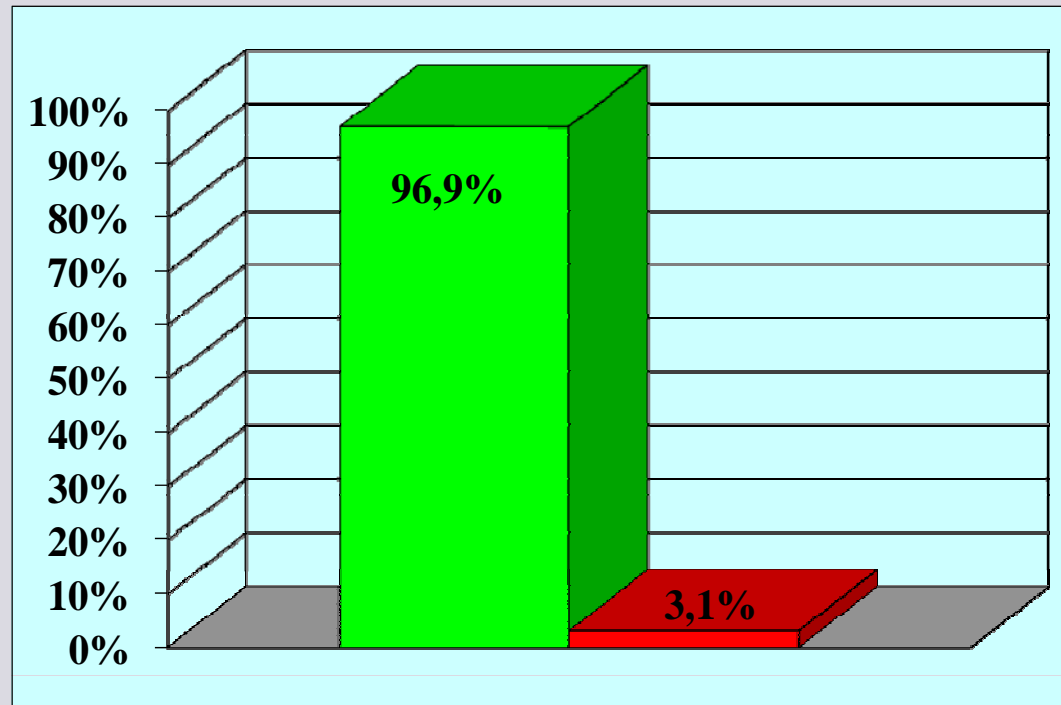
Results on 33 patients who underwent holmium laser urethrotomy



■ success	30 (90.9%)
■ failure	3 (9.1%)

Result after three urethrotomies

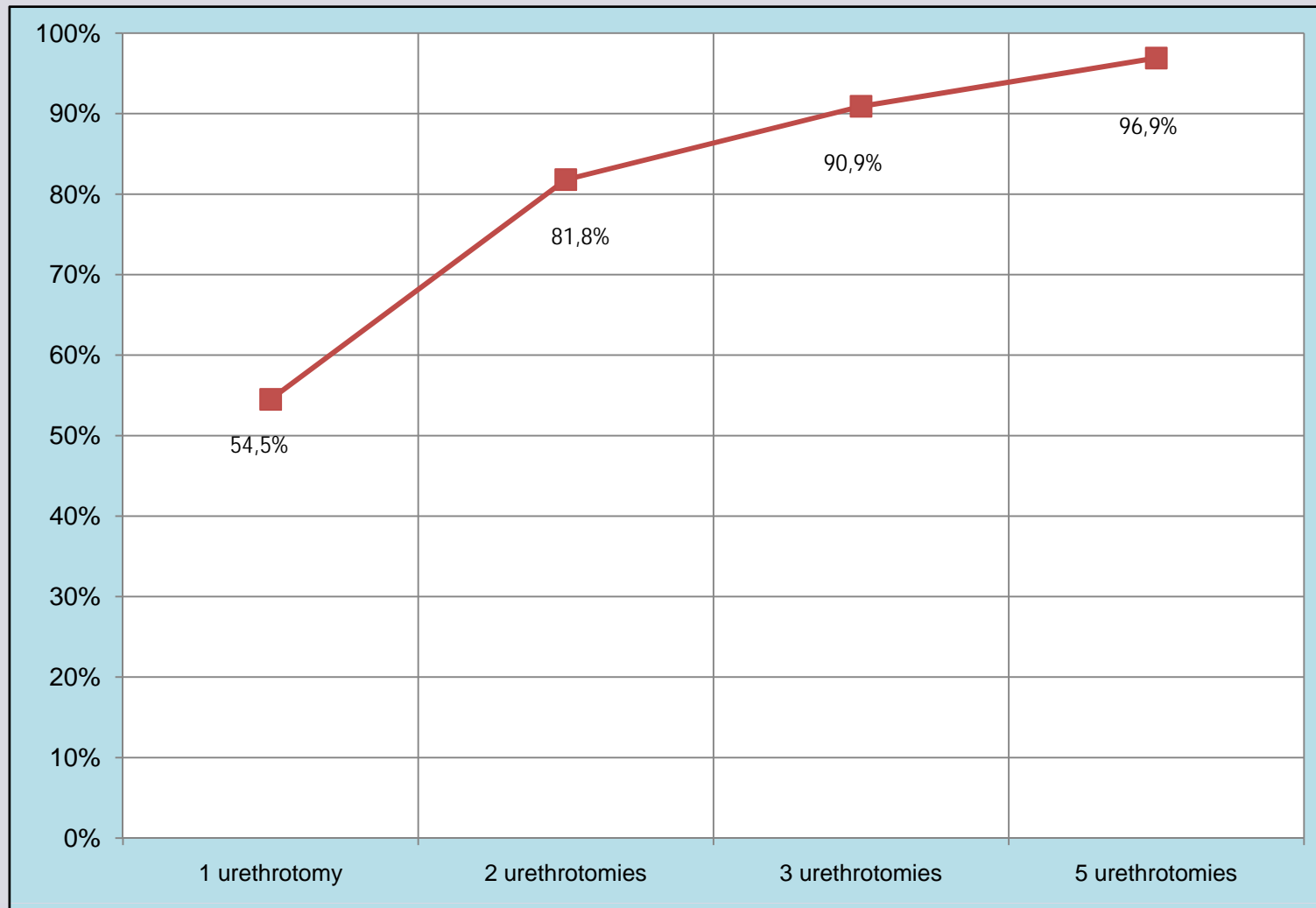
Results on 33 patients who underwent holmium laser urethrotomy



■ success	32 (96.9%)
■ failure	1 (3.1%)

Result after five urethrotomies

Results on 33 patients who underwent holmium laser urethrotomy



**The use of holmium laser urethrotomy may represents
rationale option in patients with posterior traumatic
no-obliterative short urethral stricture**

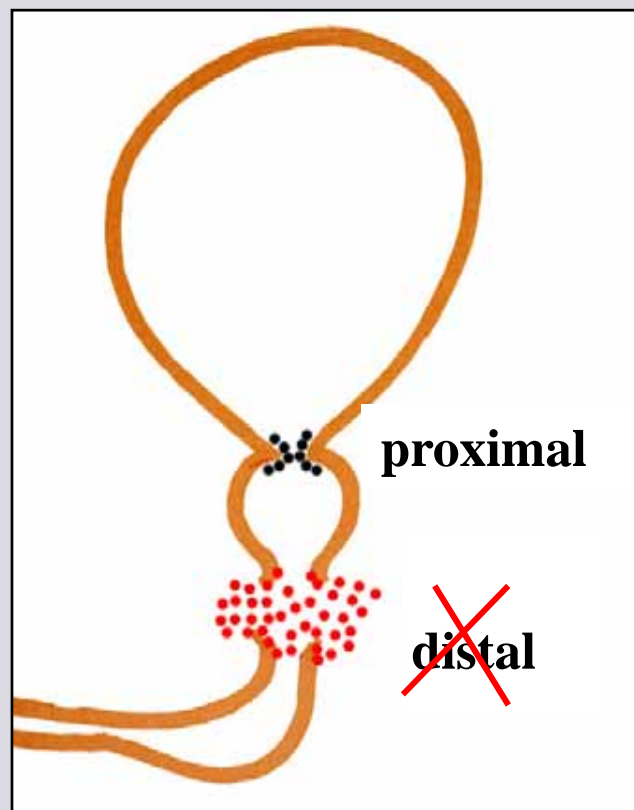
- ❖ **No damage to the erectile neuro-vascular tissue**
- ❖ **Patient should be fully informed that only 54.5% of patients require only one urethrotomy**
- ❖ **45.5% of patients require two or more urethrotomies to obtain stable result over time**

Delayed treatment of patients with pelvic fracture urethral distraction defects



Posterior urethroplasty

Posterior urethroplasty



How to repair posterior urethral stricture
preserving urinary continence



?



e-mail: info@urethralcenter.it

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Preoperative patient evaluation



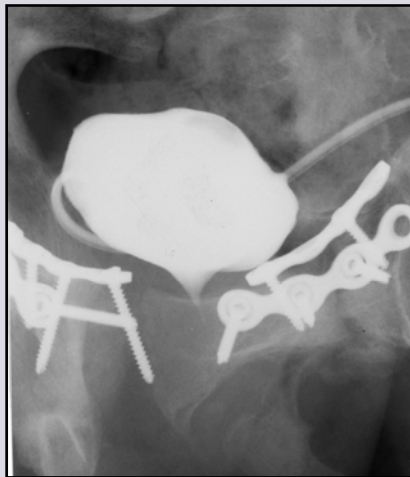
Retrograde urethrography



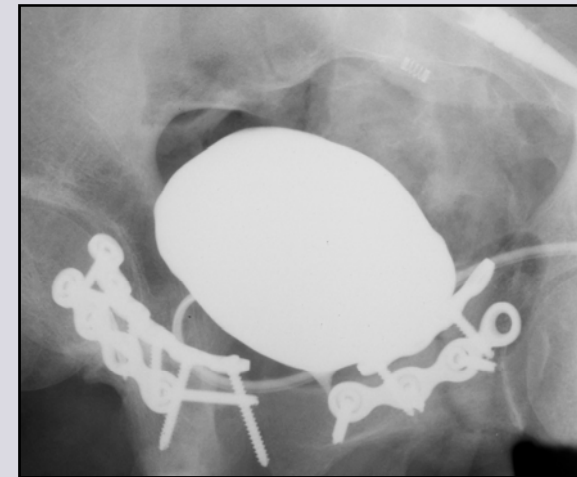
Cystography – supine position



50 cc

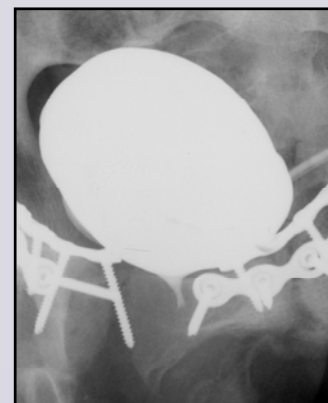
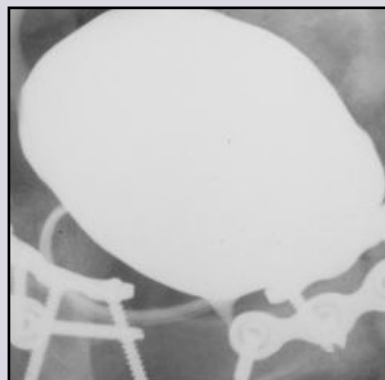


100 cc



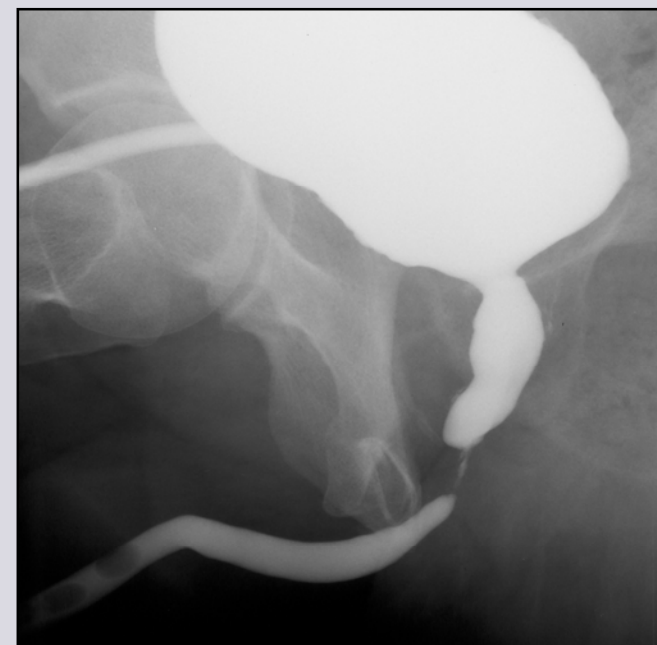
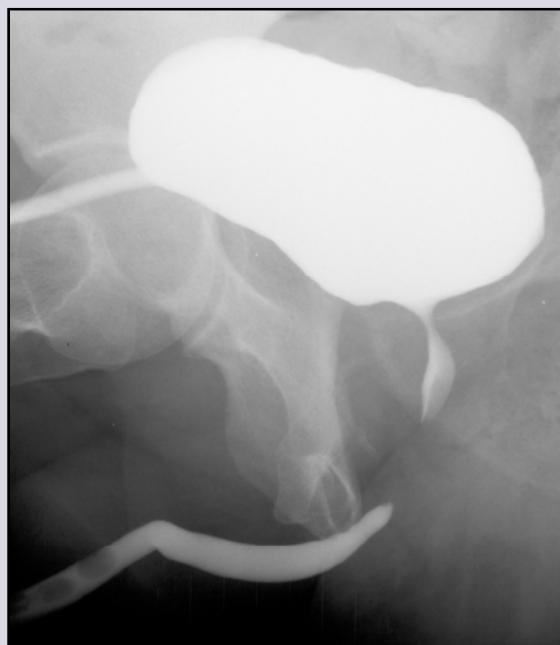
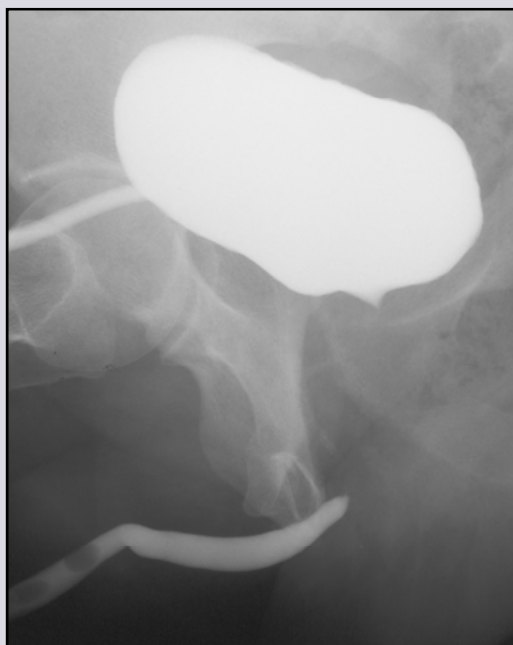
200 cc

Cystography – standing position



Valsalva

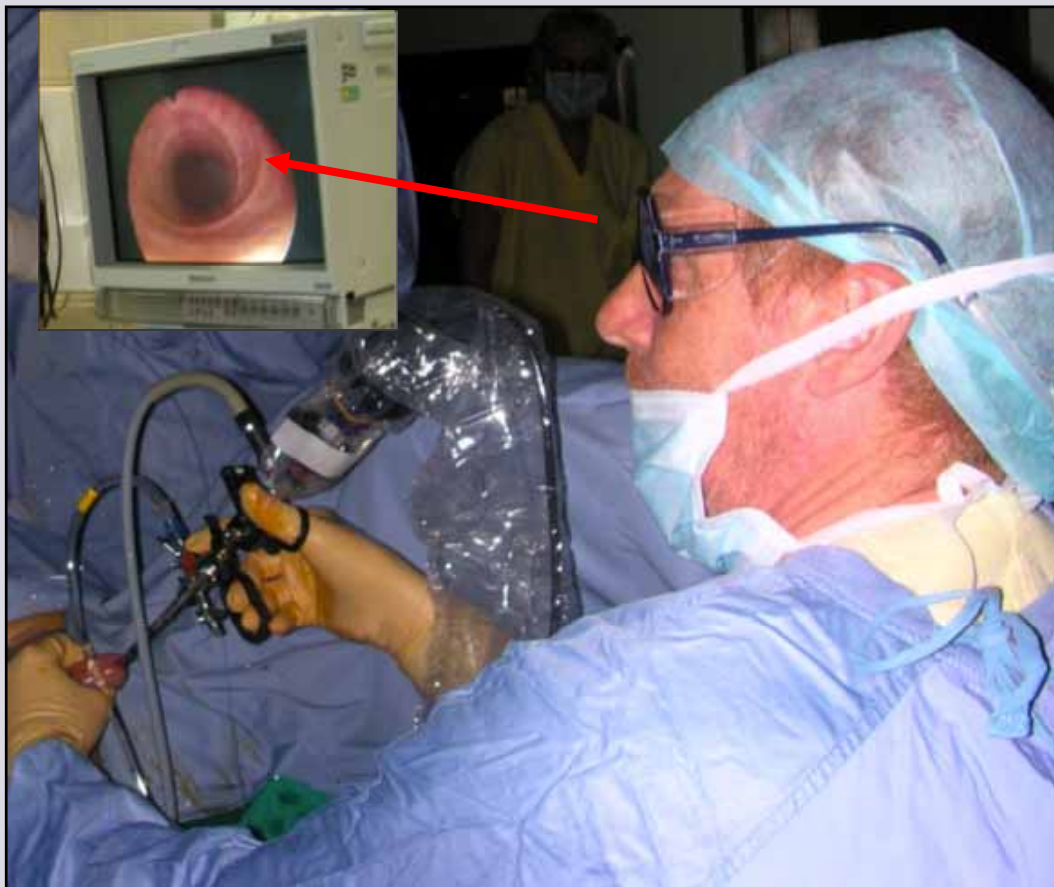
Combined retrograde and voiding urethrography



e-mail: info@urethralcenter.it

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Endoscopic evaluation of the anterior urethra



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Endoscopic evaluation of the bladder neck and prostatic urethra

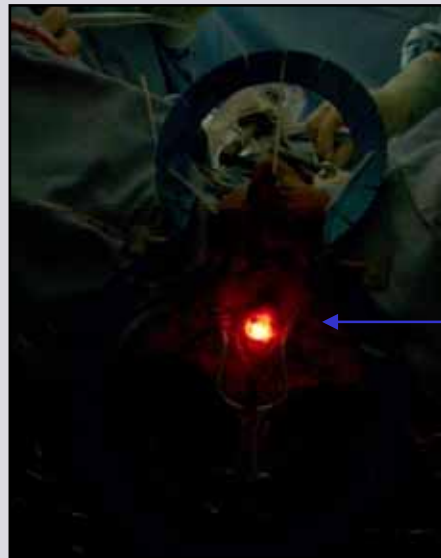


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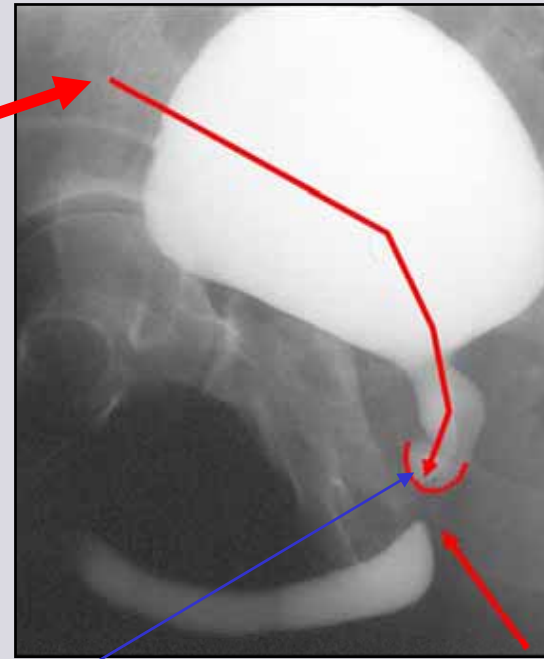
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Posterior urethroplasty using combined approach

suprapubic
endoscopic
approach



light



perineal surgical approach

Patient preparation



simple lithotomy position

Patient preparation

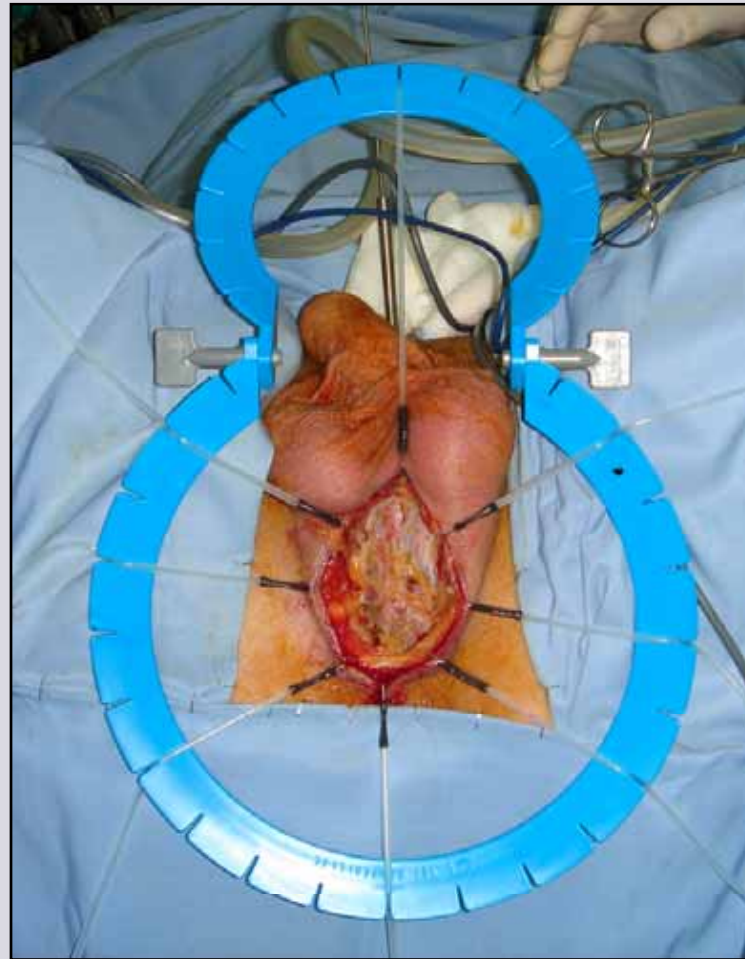


Allen stirrups



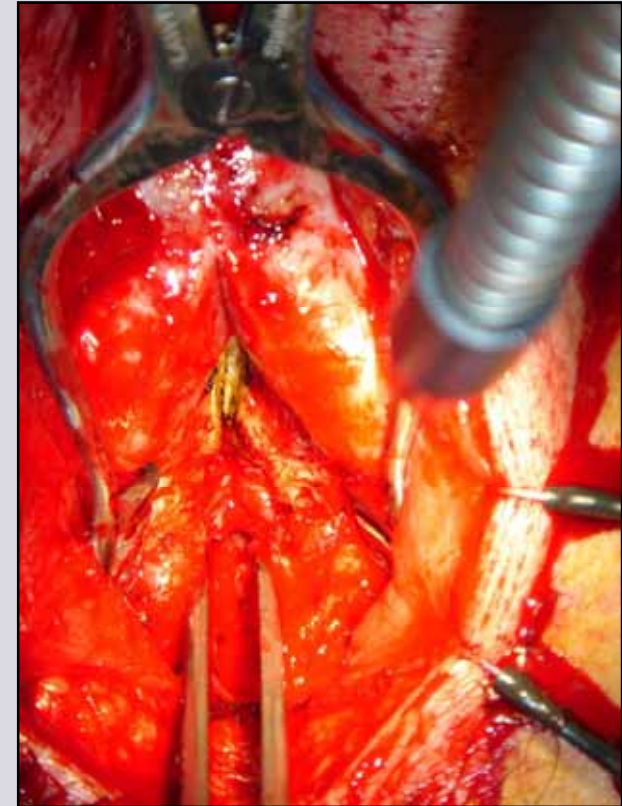
Inflatable compression sleeves

Appropriate surgical instruments



Simple retractor using atraumatic hooks

Appropriate surgical instruments



Perineal flexible light

Combined approach



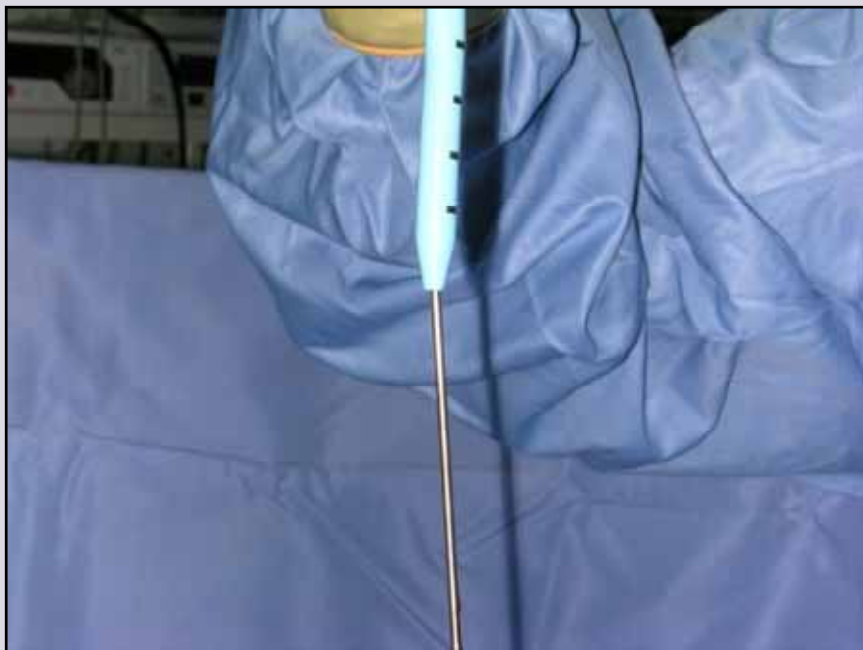
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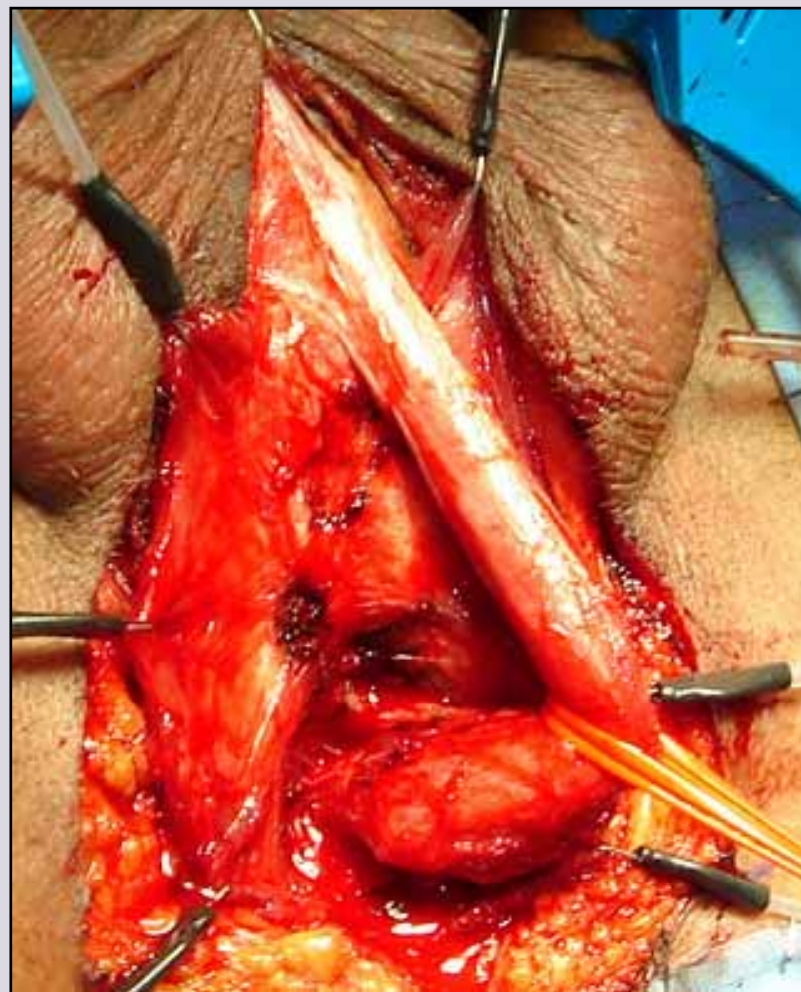
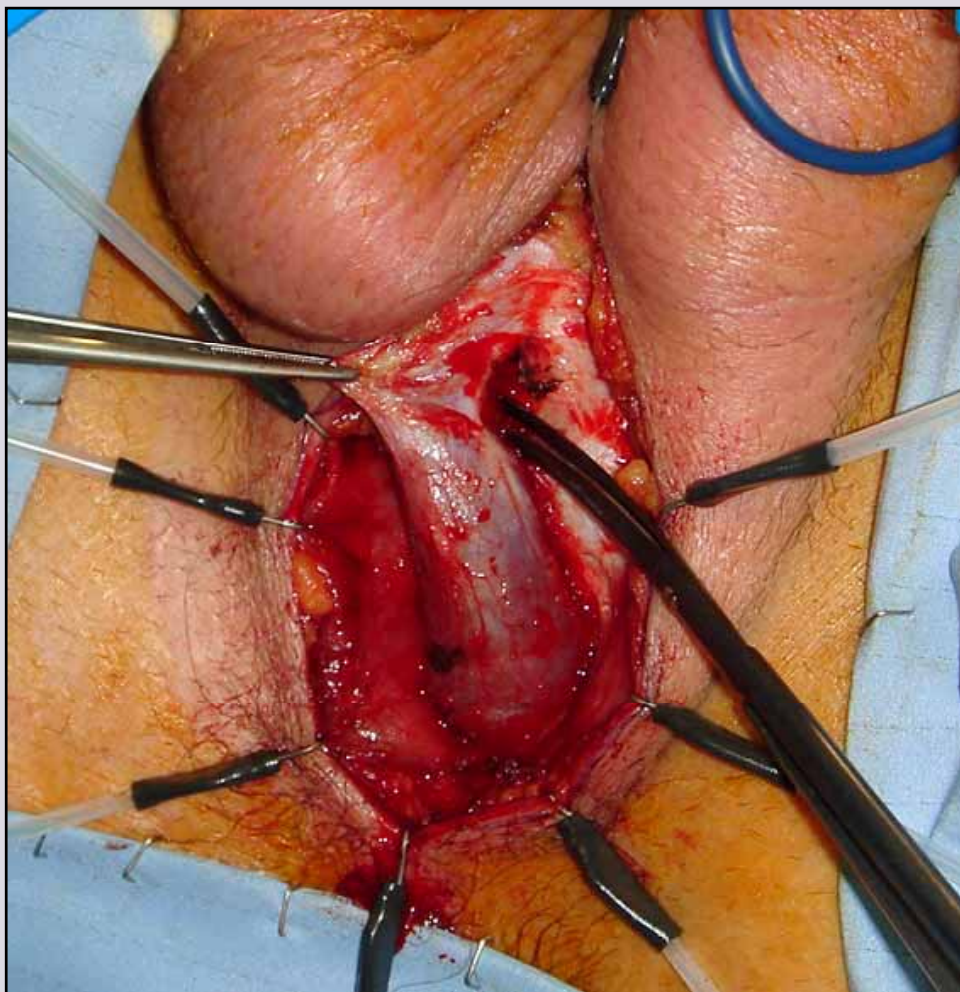
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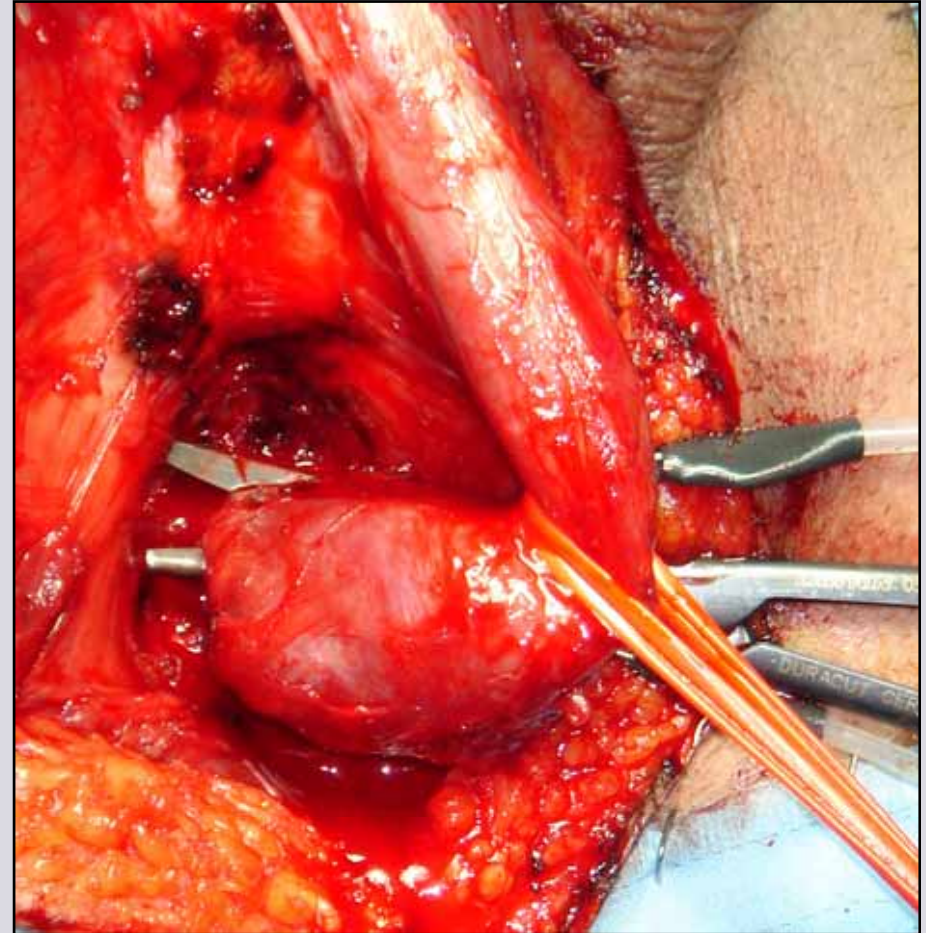
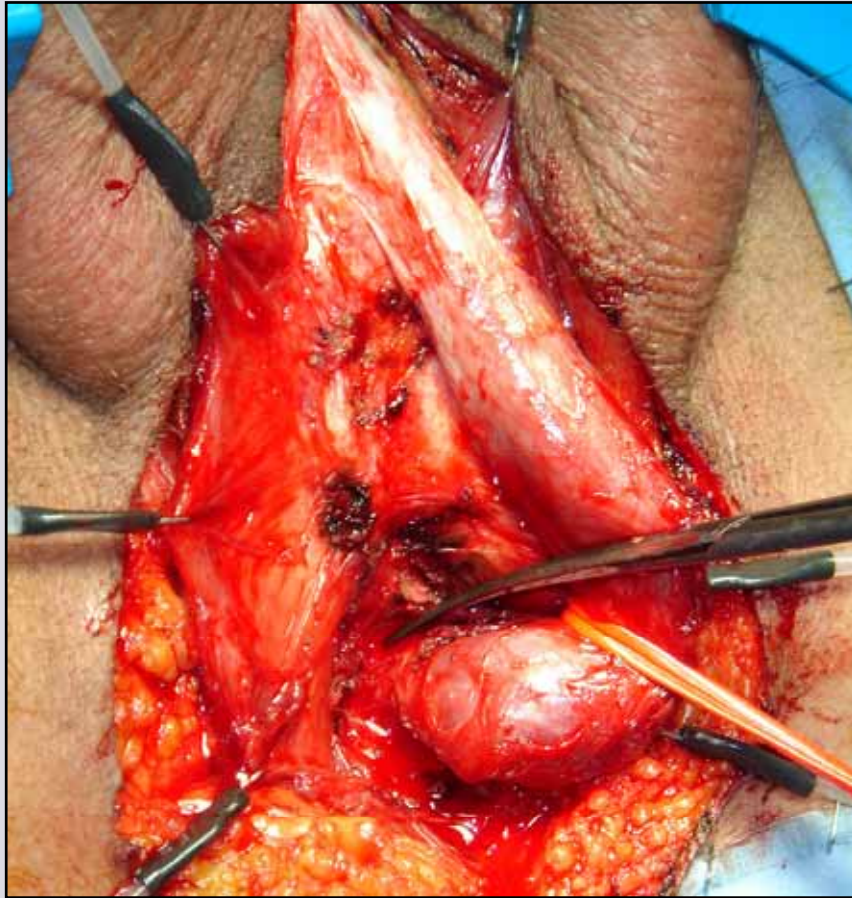
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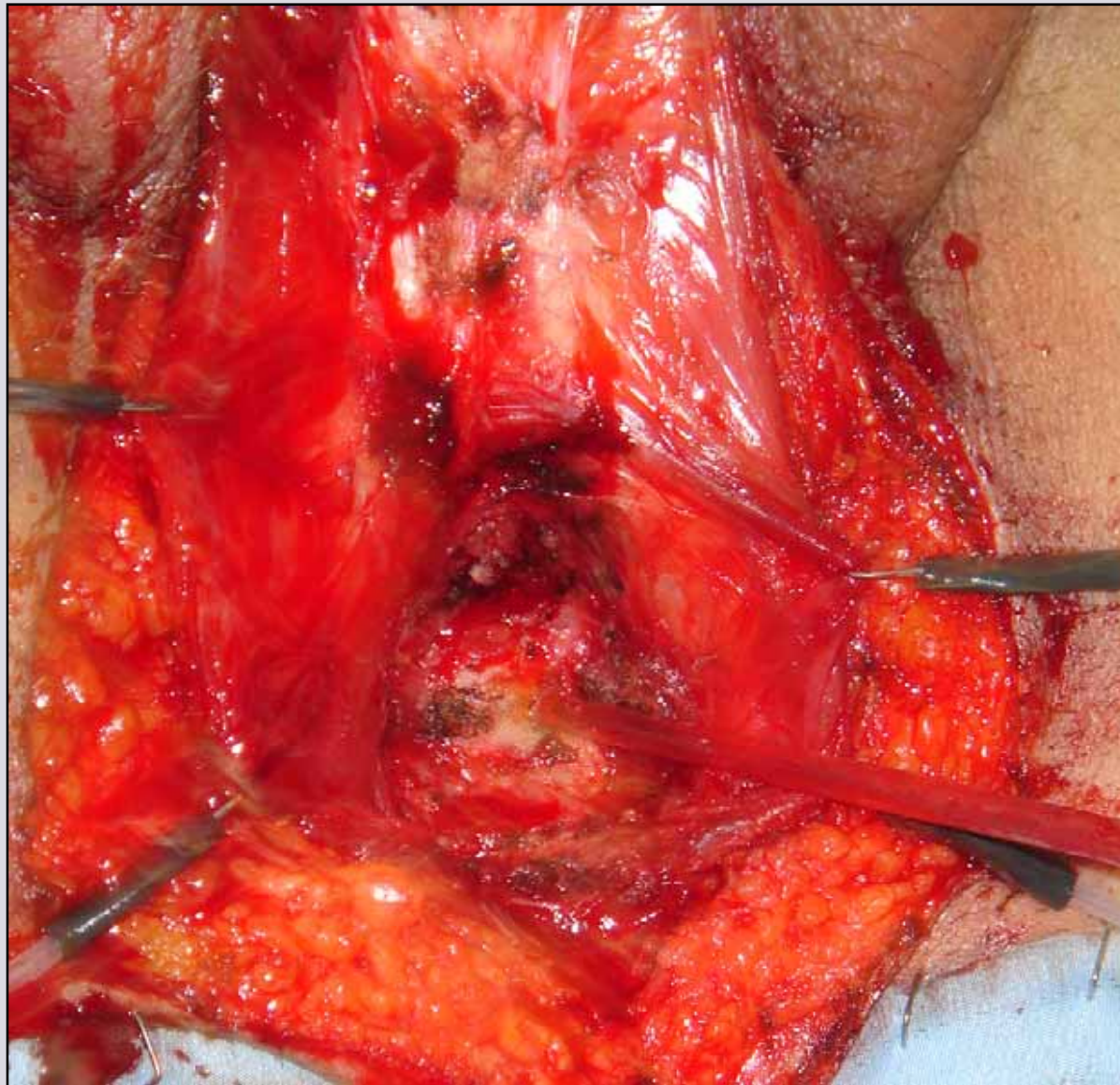
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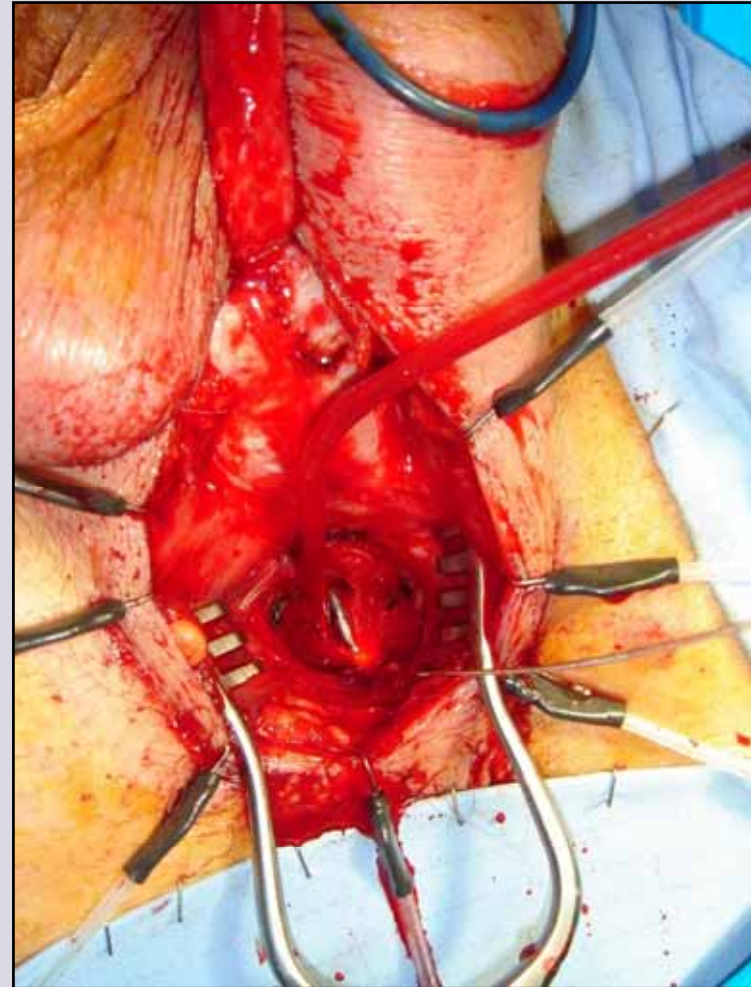
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Cut on the light



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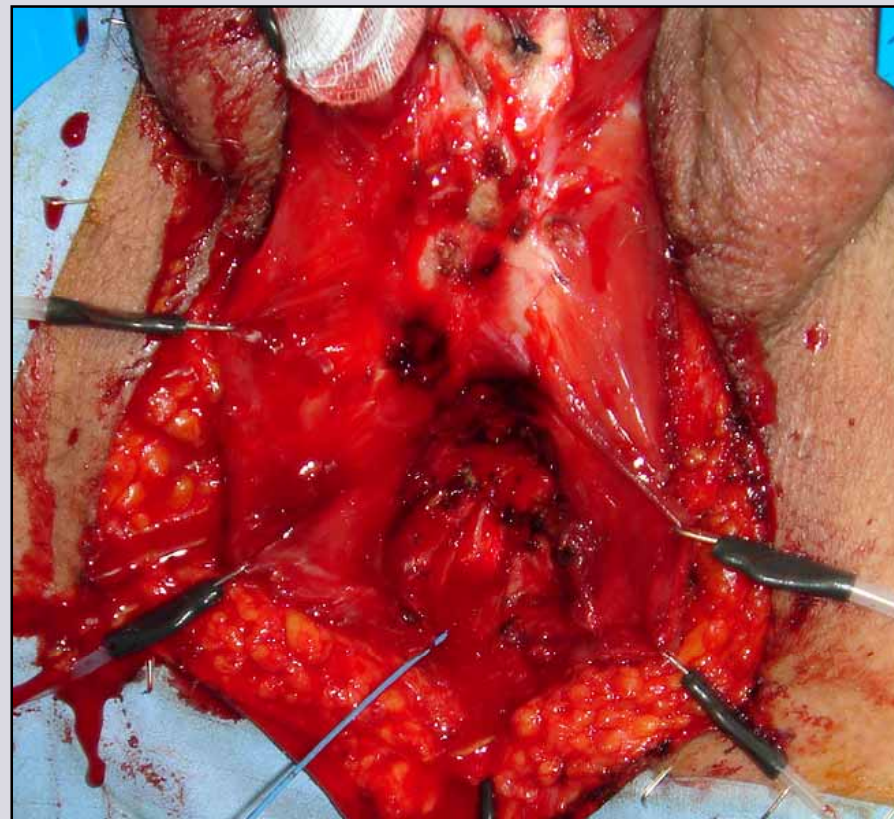
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Cut on the tip



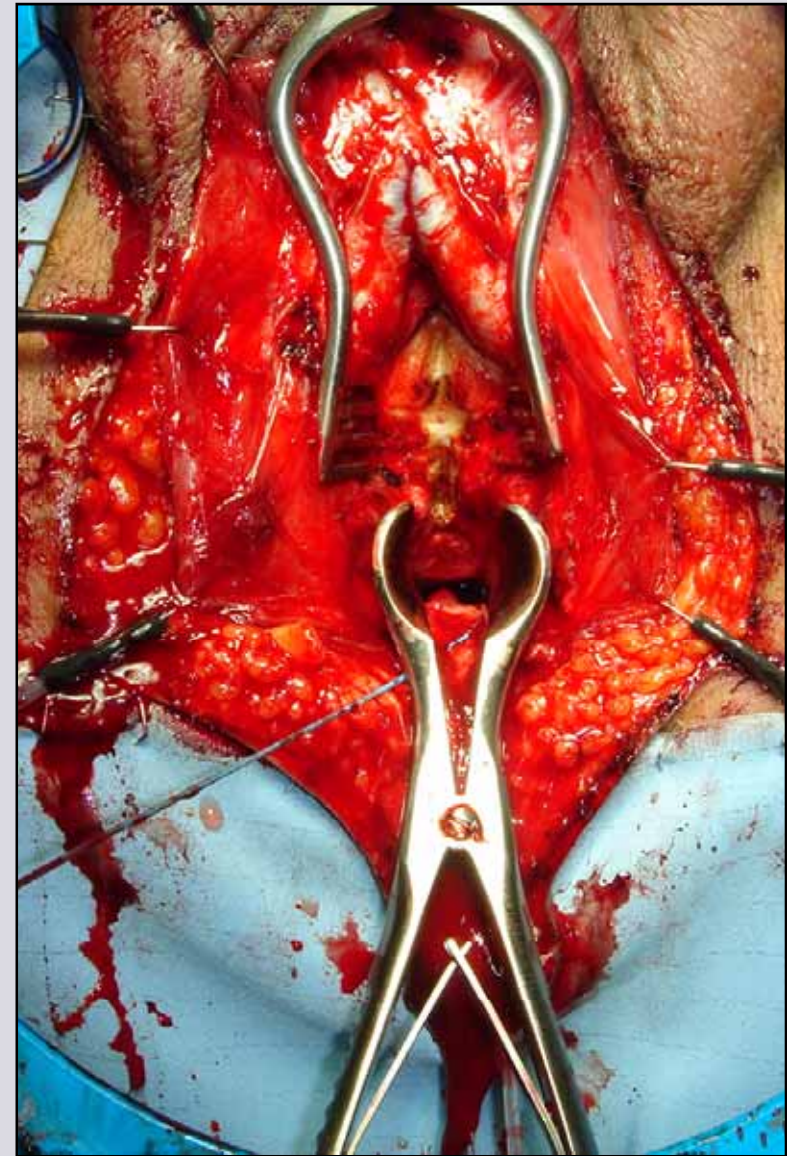
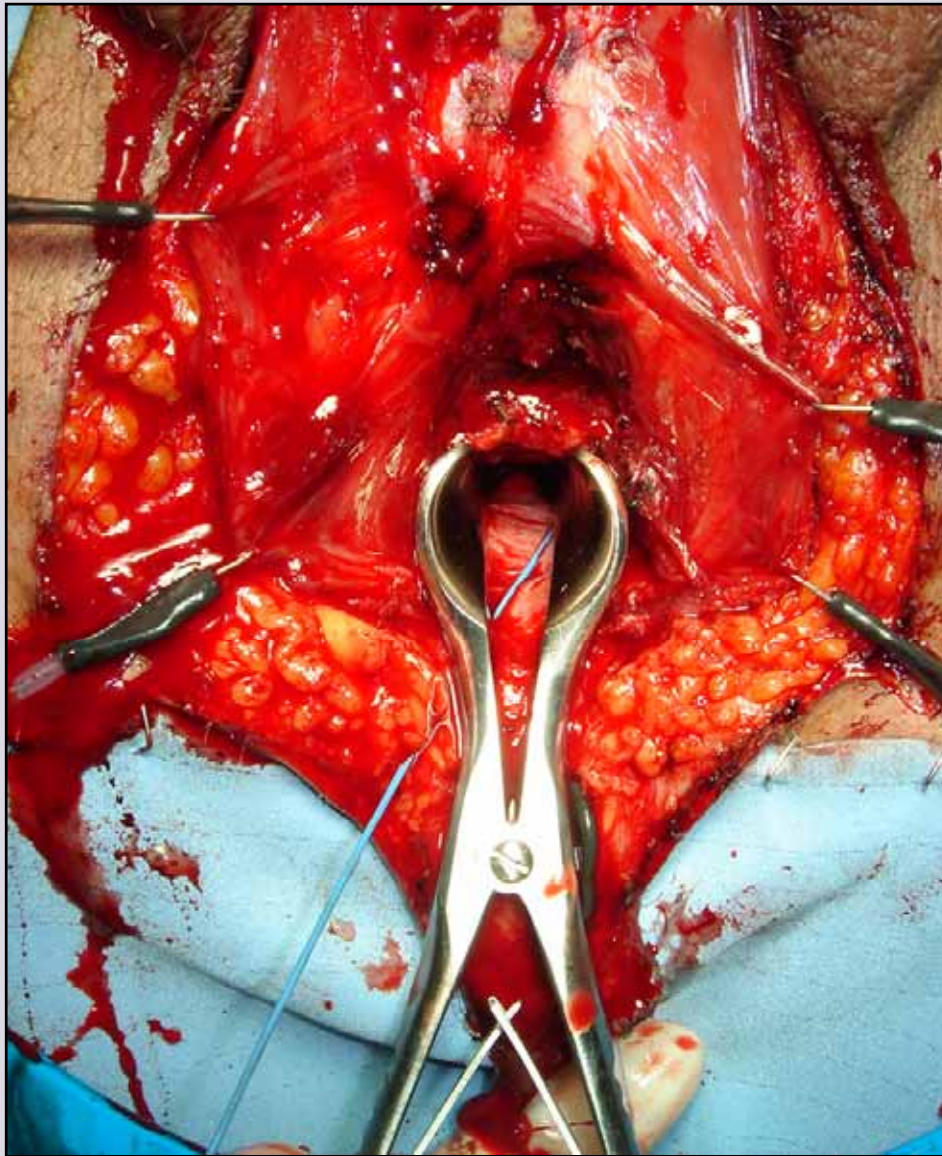
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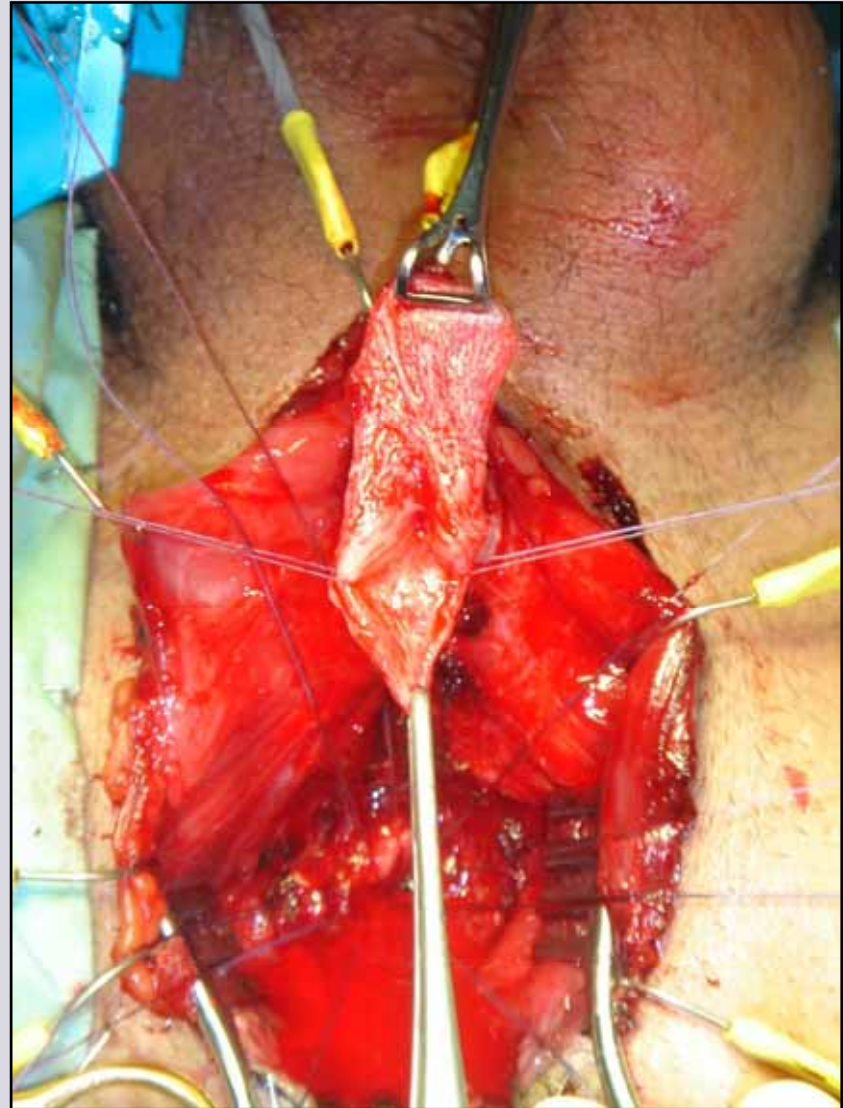
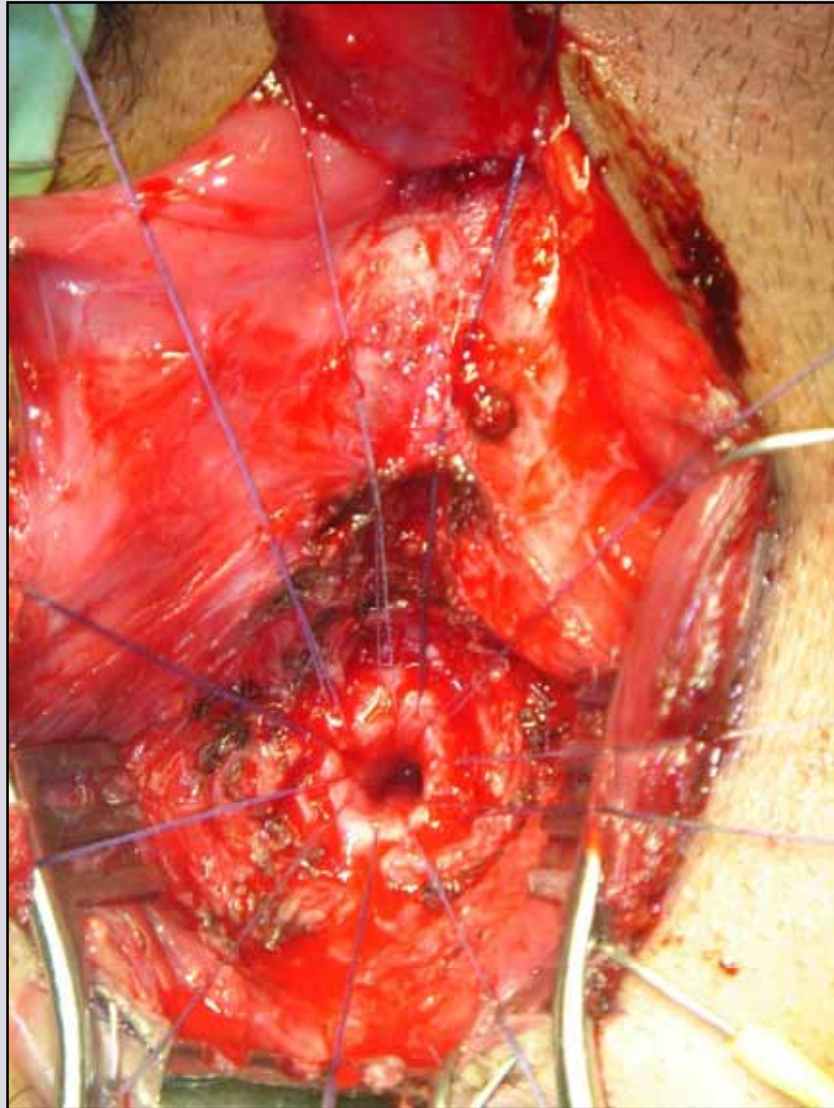
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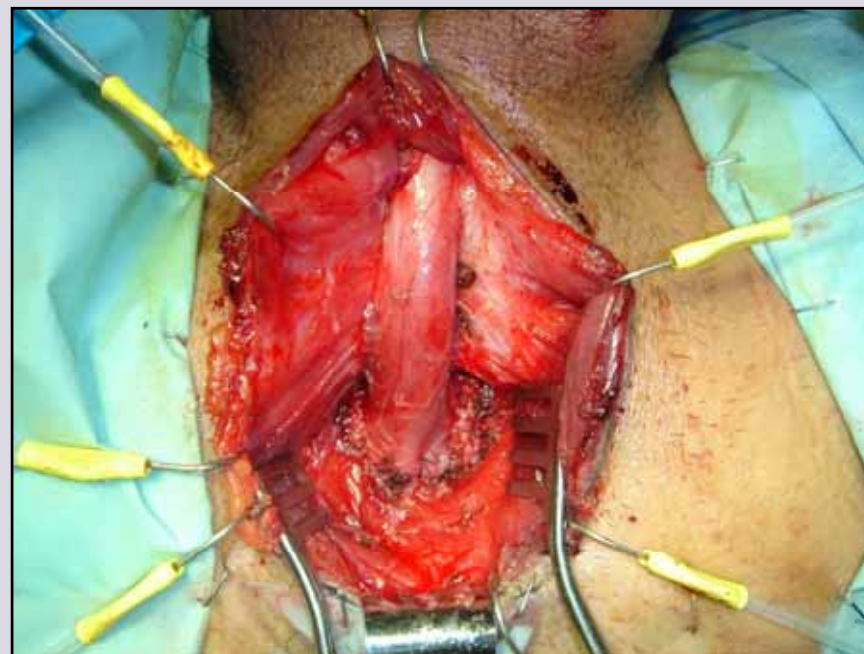
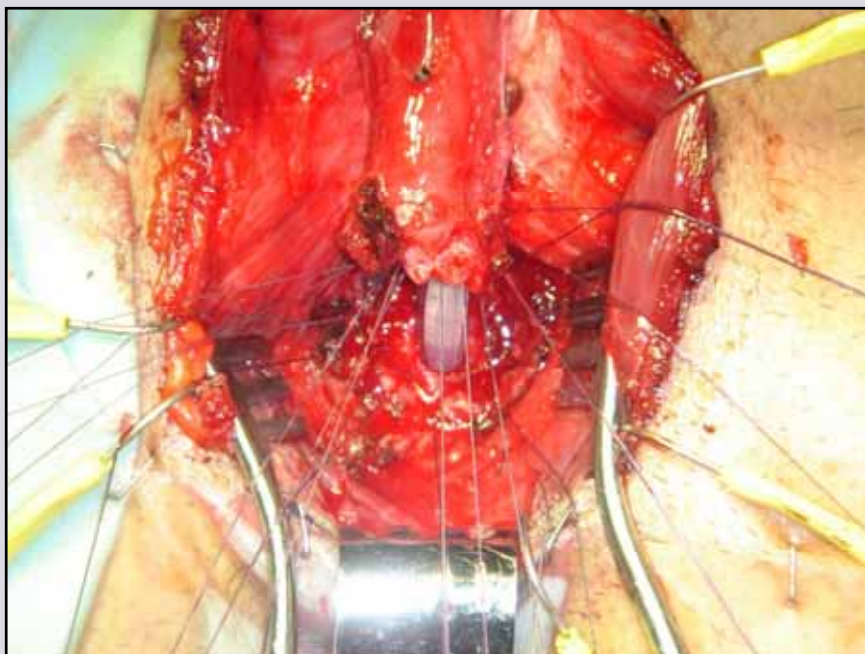
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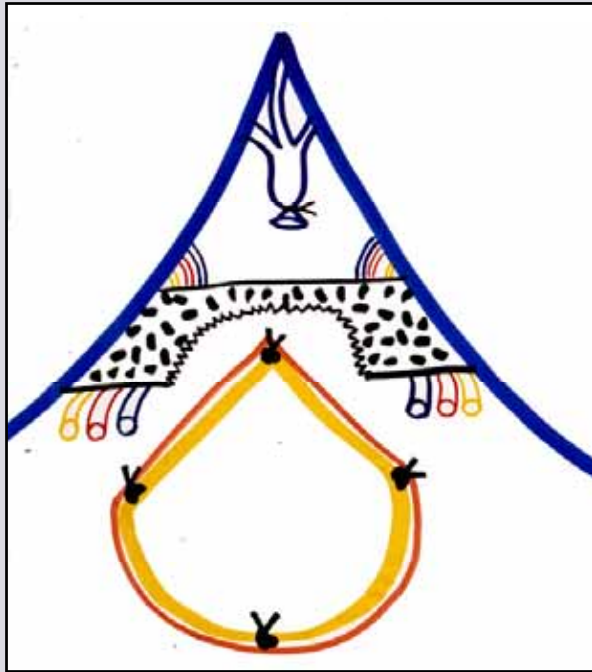
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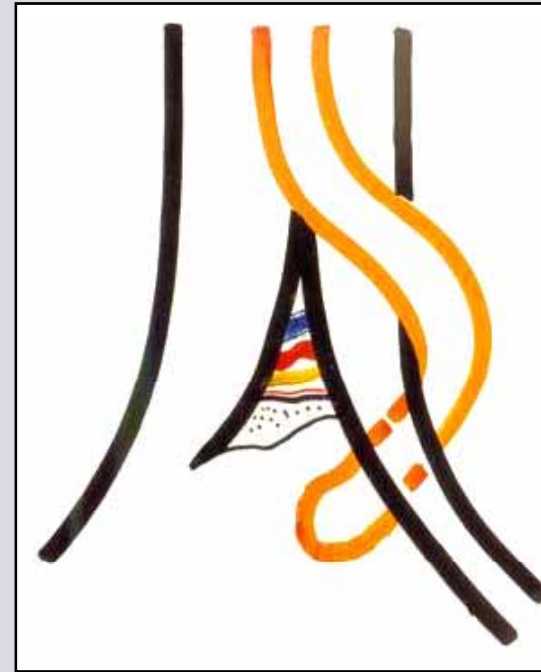
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when ?

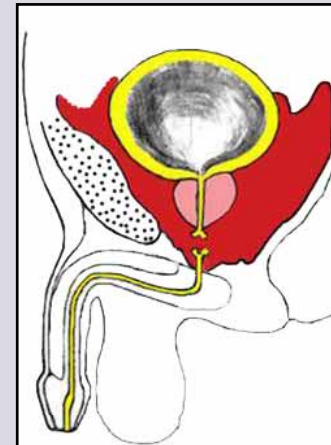


perineal pubectomy

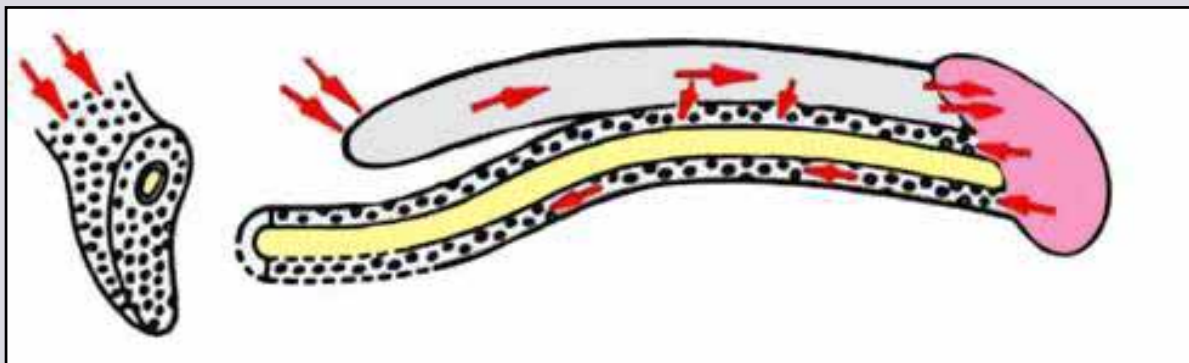


**retrocrural urethral
re-routing**

1. Anatomical relationship between pubic bone and prostatic apex



2. Length and blood supply of the bulbar urethra

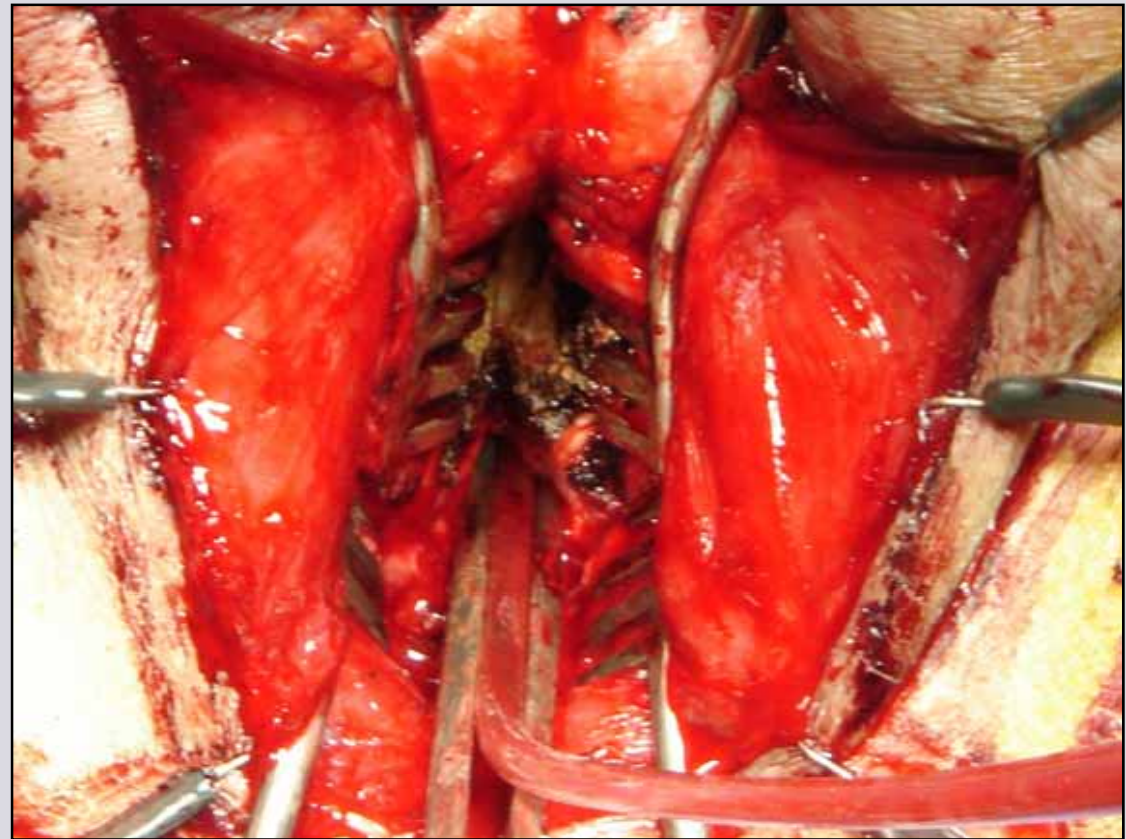
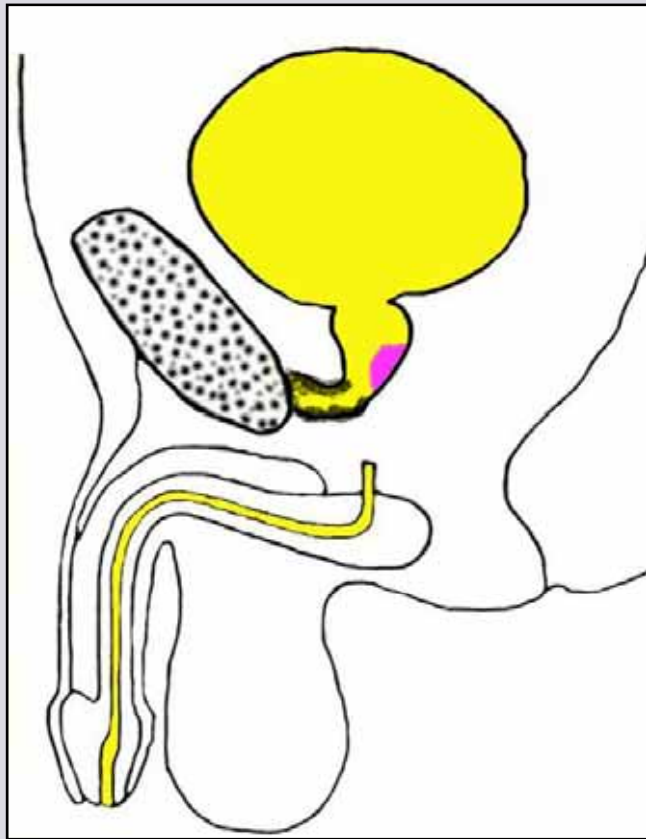


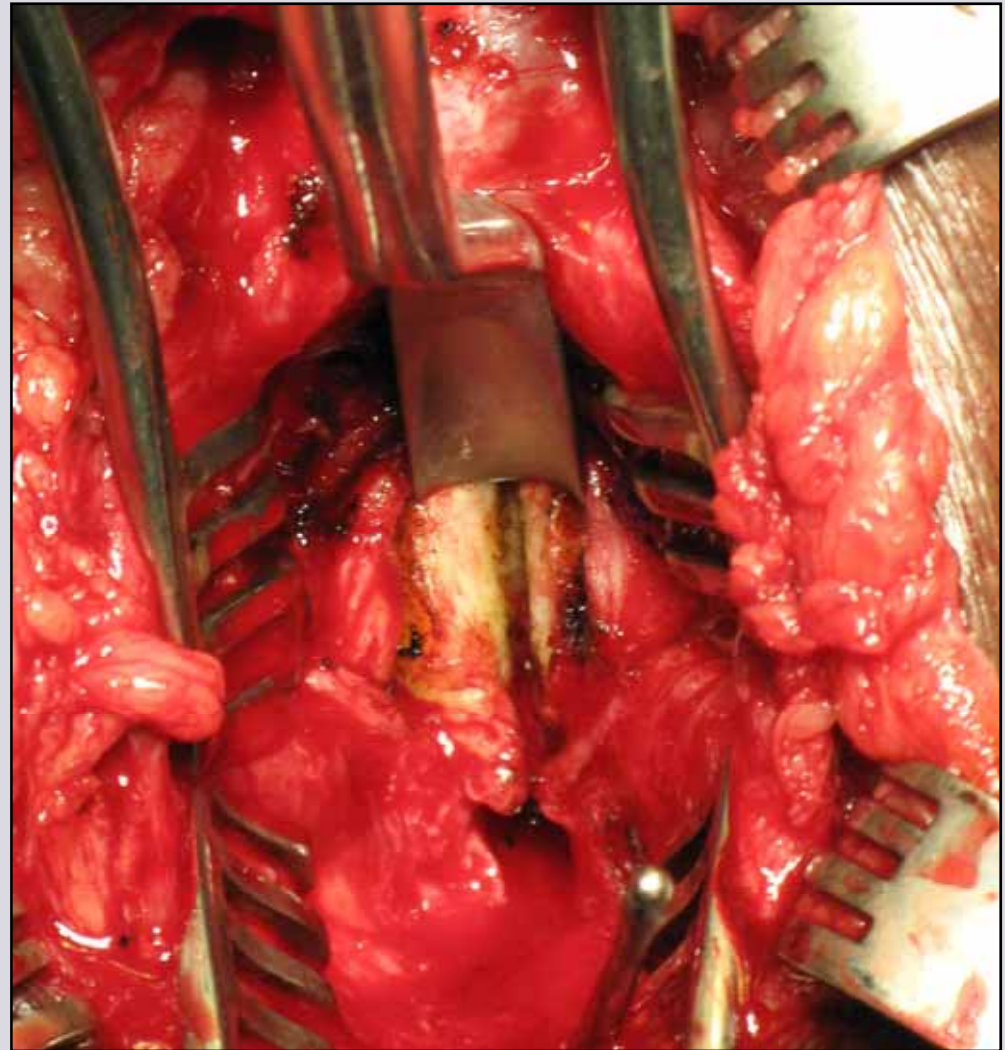
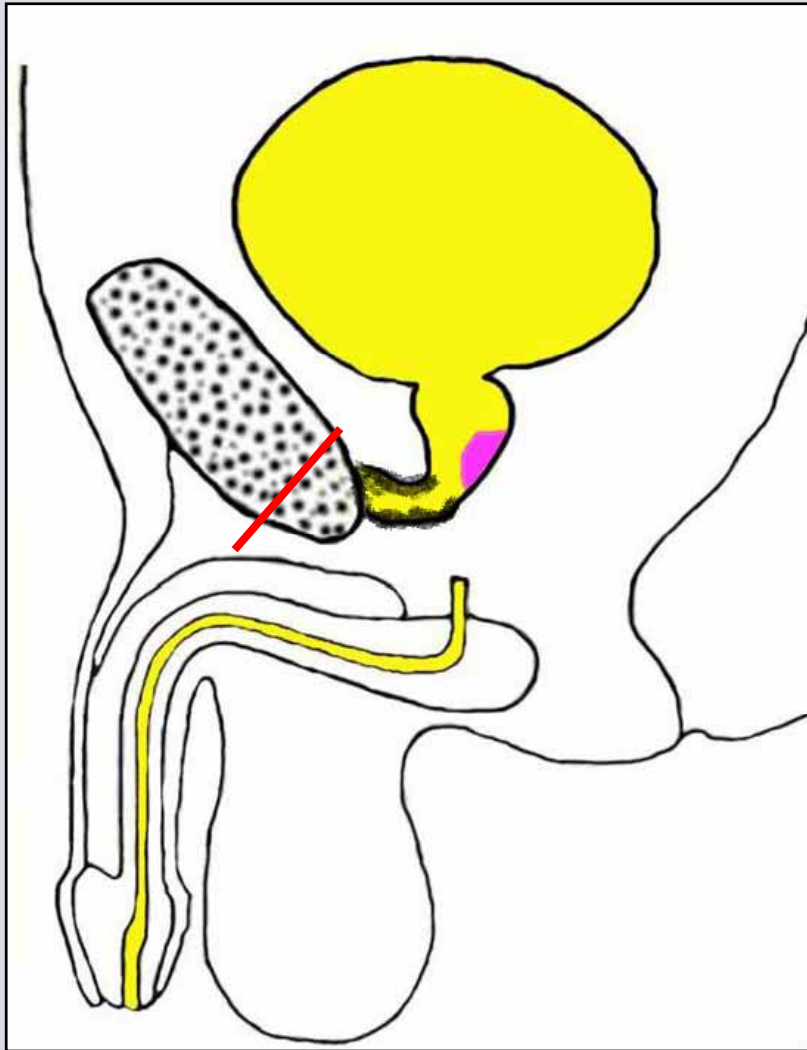
**Urethrography don't provide any information
about the anatomical relationship between pubic
bone and prostatic apex**



?

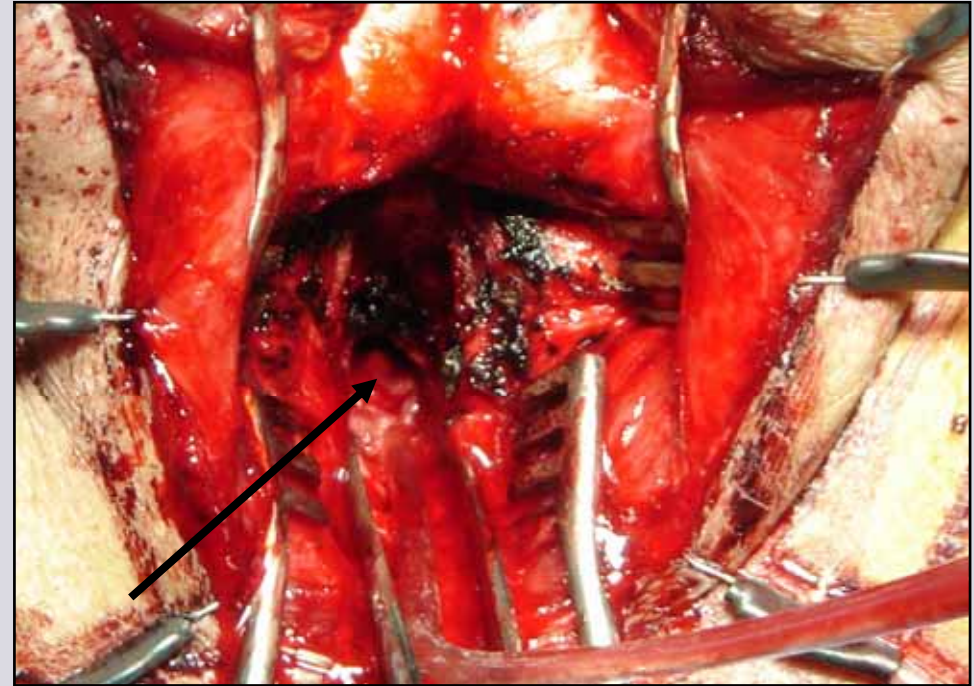
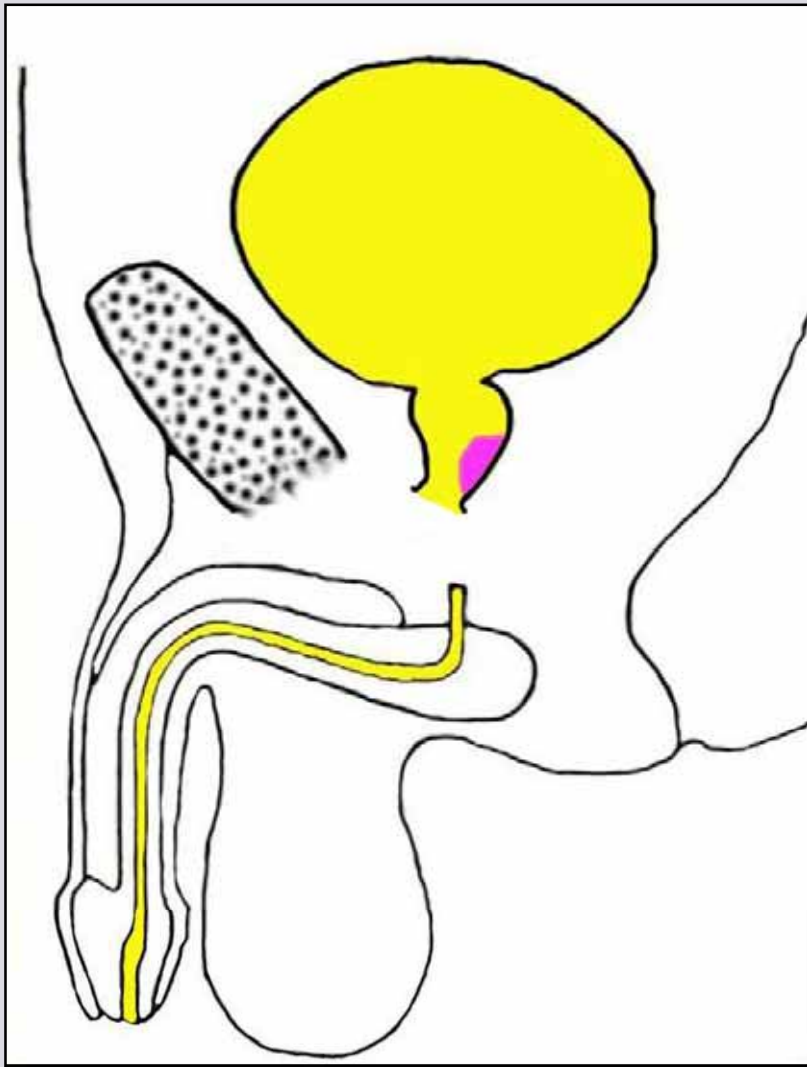
Anatomical relationship between pubic bone and prostatic apex



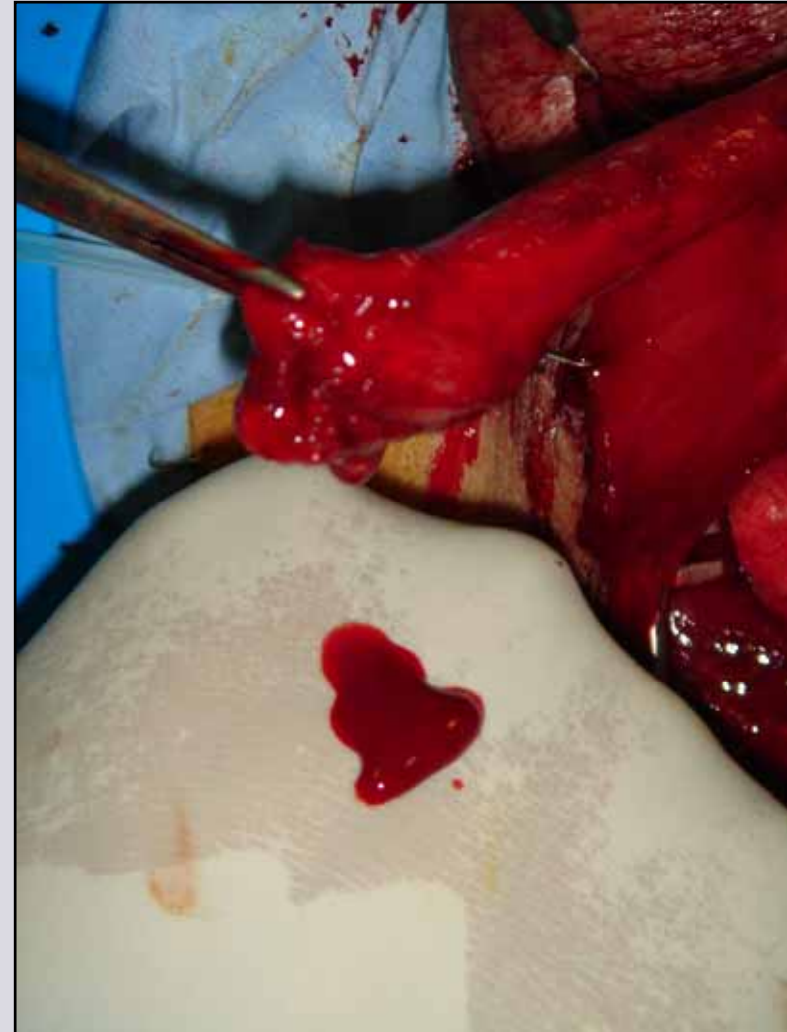
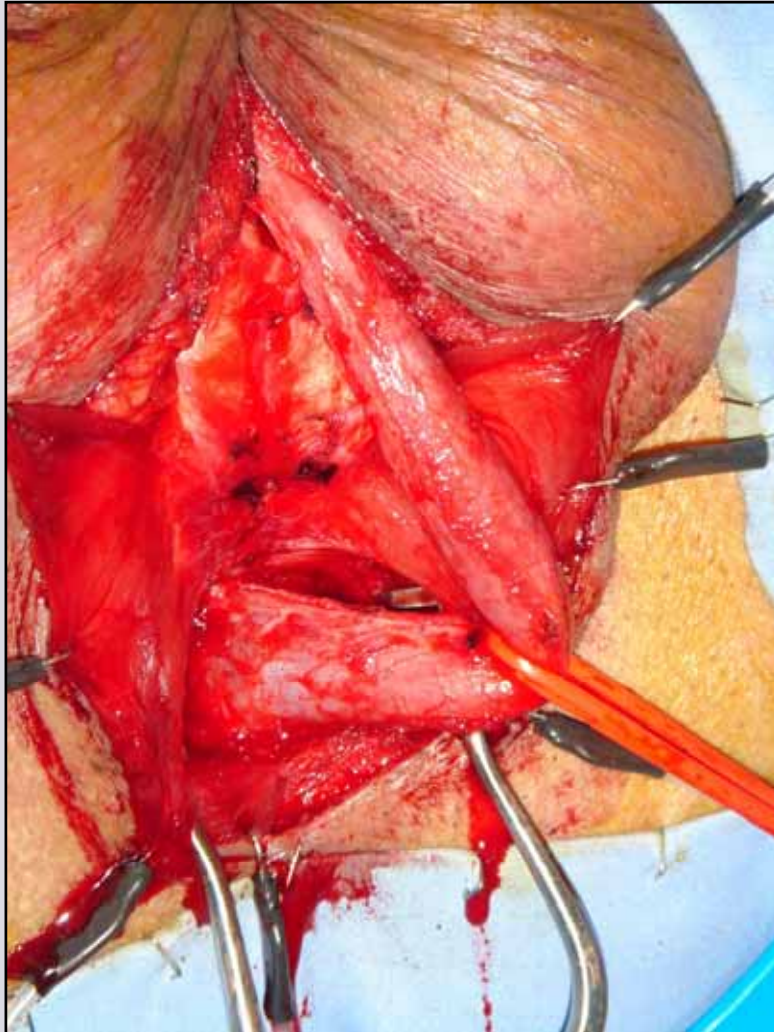


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Websites: www.uretra.it
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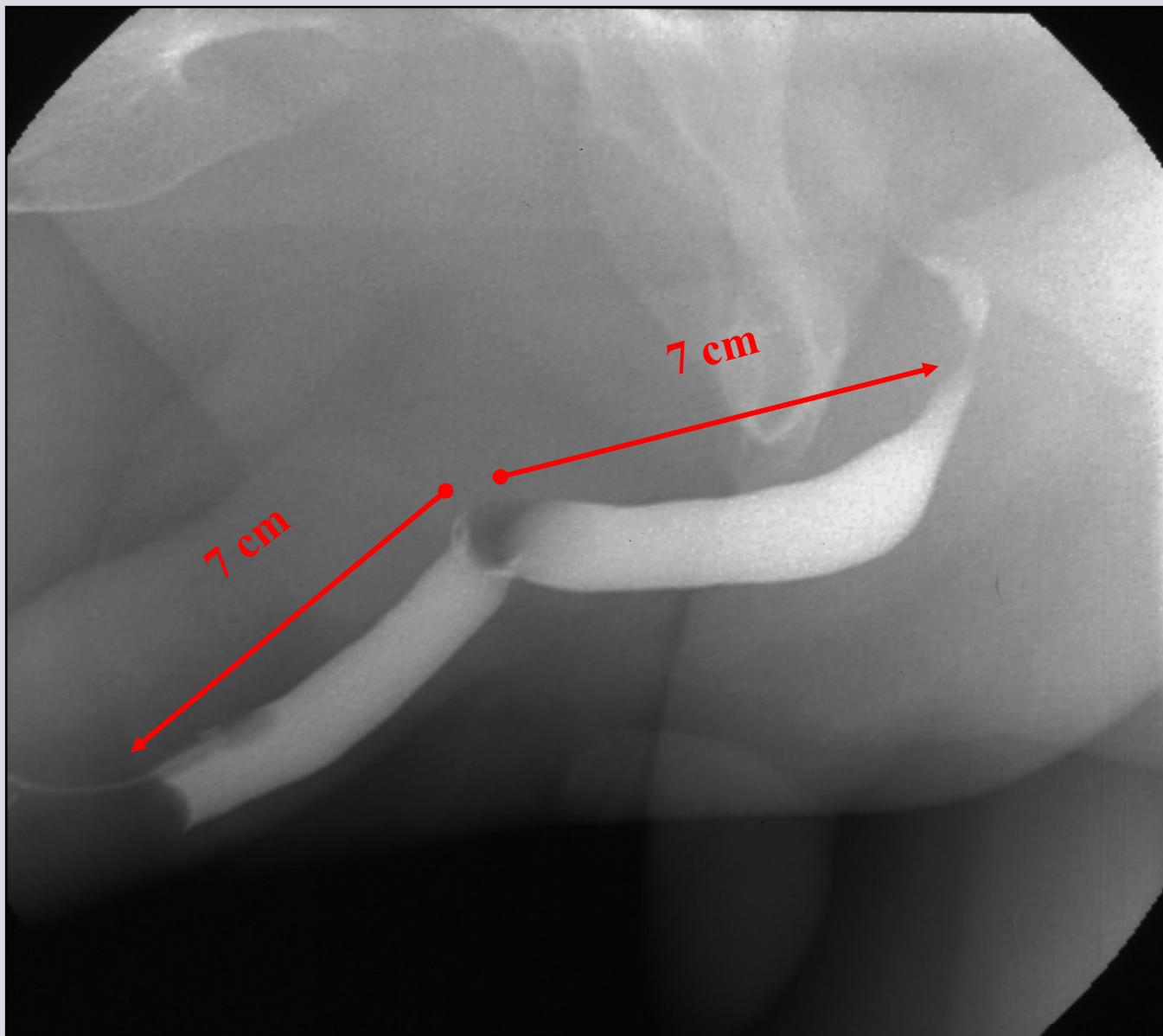


Length and blood supply of the bulbar urethra



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9 cm





12.5 cm



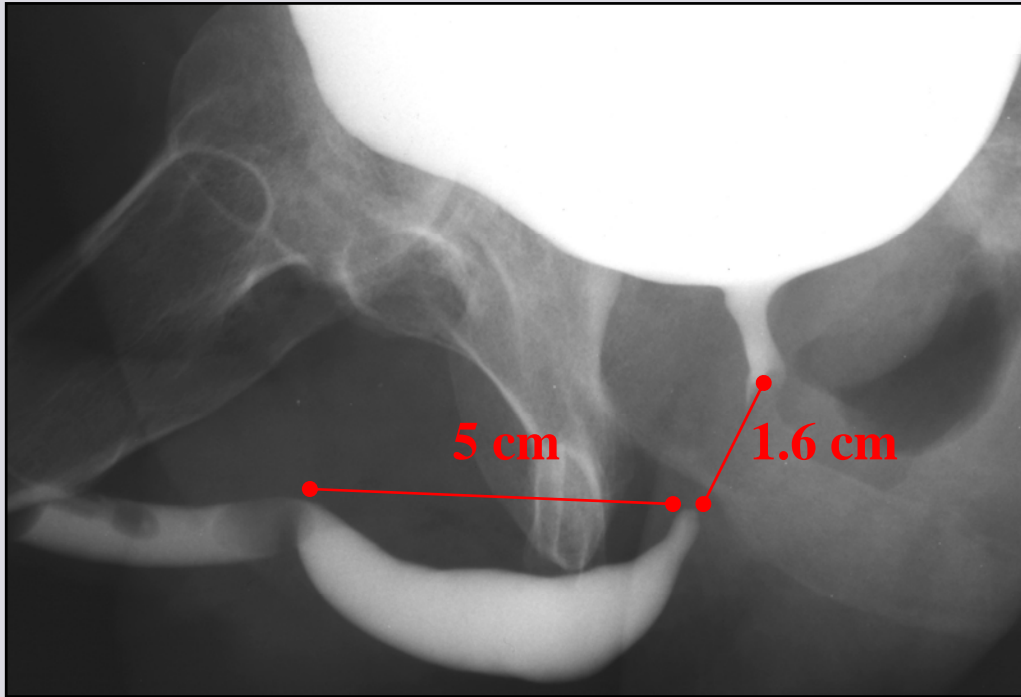
Gapometry and Anterior Urethrometry in the Repair of Posterior Urethral Defects

Mamdouh M. Koraitim

From the Department of Urology, College of Medicine, University of Alexandria, Alexandria, Egypt

- **Bulbo-prostatic gap shorter than 1/3 of the entire length of the bulbar urethra may be repaired using simple perineal approach**
- **Bulbo-prostatic gap longer than 1/3 of the entire length of the bulbar urethra may required perineal pubectomy**

J Urol 2008; 179: 1879-1881



bulbo-prostatic gap: 1.6 cm

**entire length of bulbar
urethra : 5 cm**

**1/3 of the entire length of
bulbar urethra: 1.6 cm**

**According to Koraitim' gapometry, on this case pubectomy
is unnecessary**

?

Pubectomy and retrocrural urethral re-routing is reported in the following cases

redo-cases

pediatric cases

pre-adolescent boys

patients from Egypt, India, Nepal

showing short bulbar urethra with poor vascular blood supply

Length of the penis and bulbar urethra according to the race

- black: 6.56
- white: 6.11
- hispanic: 6.01
- amerindian: 6.00
- east indian: 5.89
- middle eastern: 5.87
- east asian: 5.32

The BBC reported an Indian Council of Medical Research study finding that “about 60% of Indian men have penis which are between three and five centimeters shorter than international standards used in condom manufacture”

http://en.wikipedia.org/wiki/Penis_size

Conclusion

Posterior urethral distraction defects have a wide spectrum of presentation from simple to complex.

The reconstruction required is influenced by multiple factors.

Conclusion

Penile length represents a factor that may influence the surgical technique (pubectomy vs simple perineal approach) and the result of posterior urethroplasty.



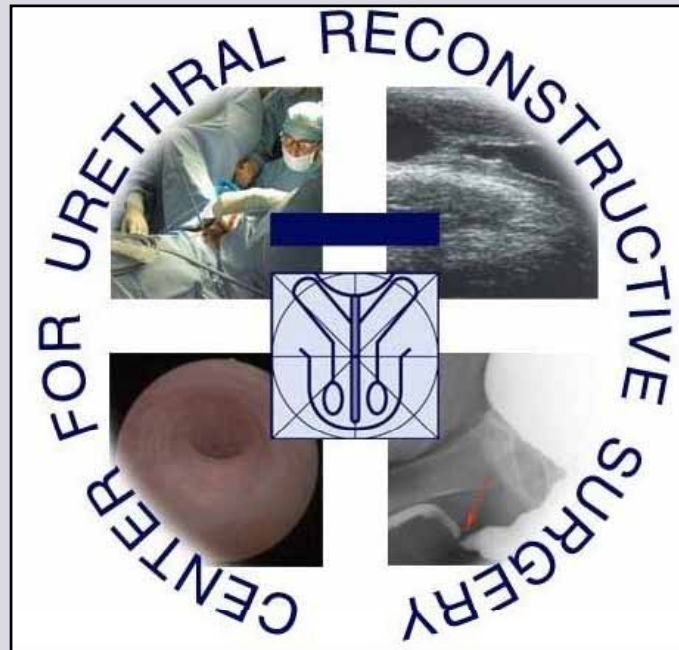


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