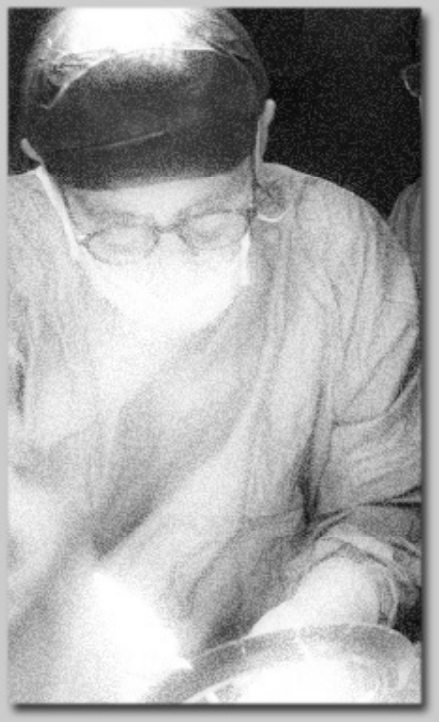
Center for Reconstructive Urethral Surgery



GUIDO BARBAGLI, M.D.

Arezzo - Italy

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Website: www.urethralcenter.it

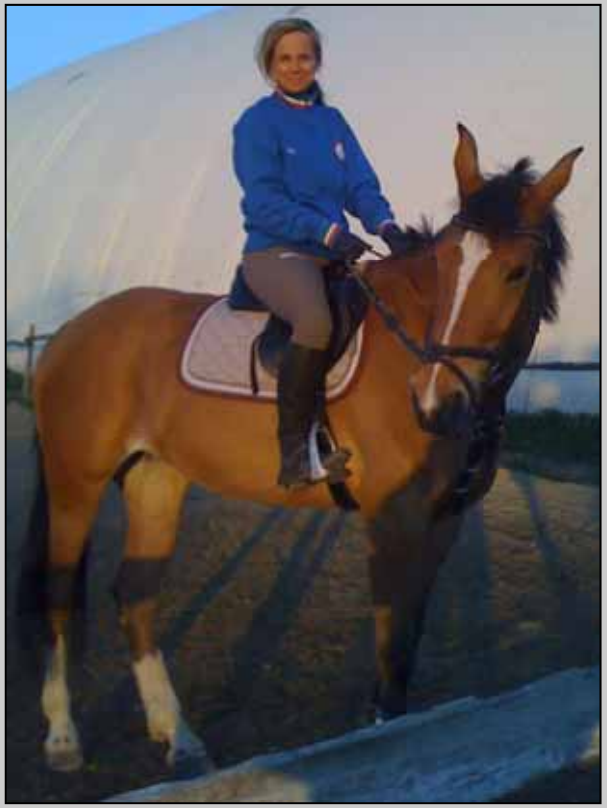
Ahmedabad – India

25 – 26 June 2011

Center for Reconstructive Urethral Surgery
e-mail: info@urethralcenter.it website: www.urethralcenter.it

The Team

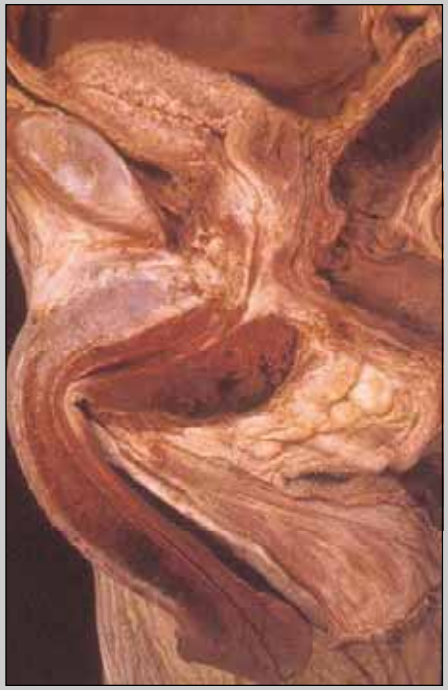
Salvatore Sansalone

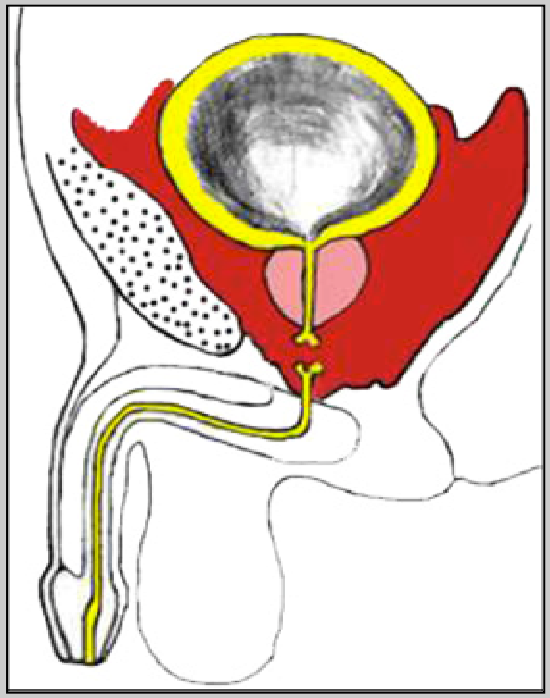


Sofia Balò

Giuseppe Romano

Emergency management of patient with pelvic trauma and posterior urethral disruption (PFUDD).





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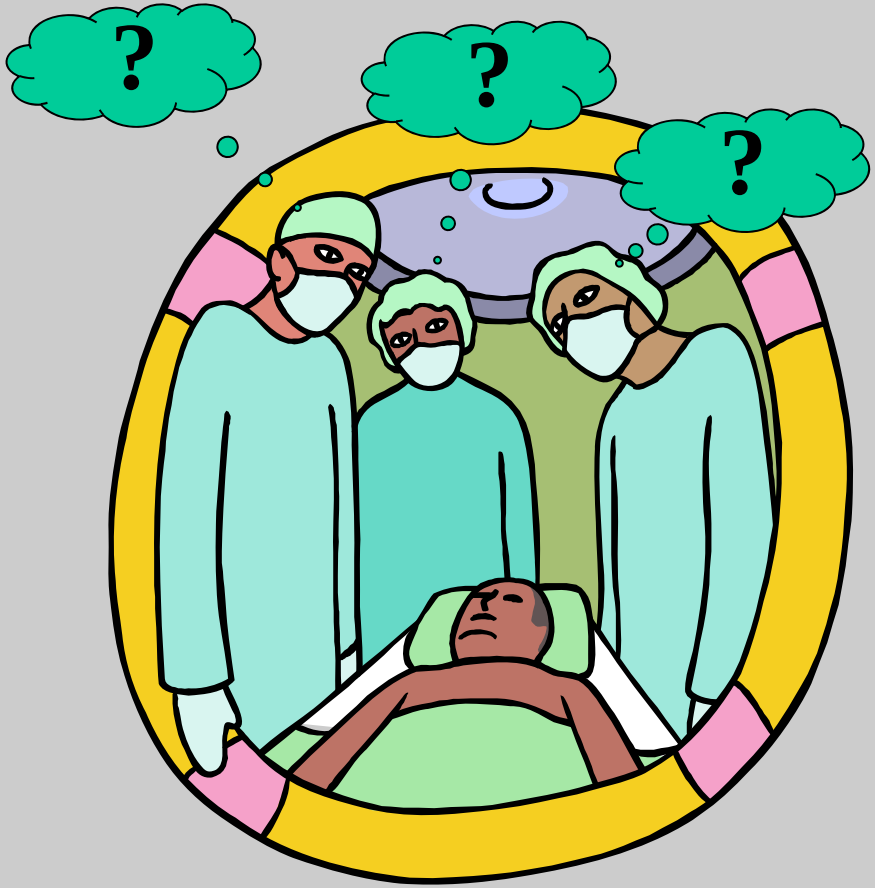
Pelvic fracture urethral distraction defects
PFUDD

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

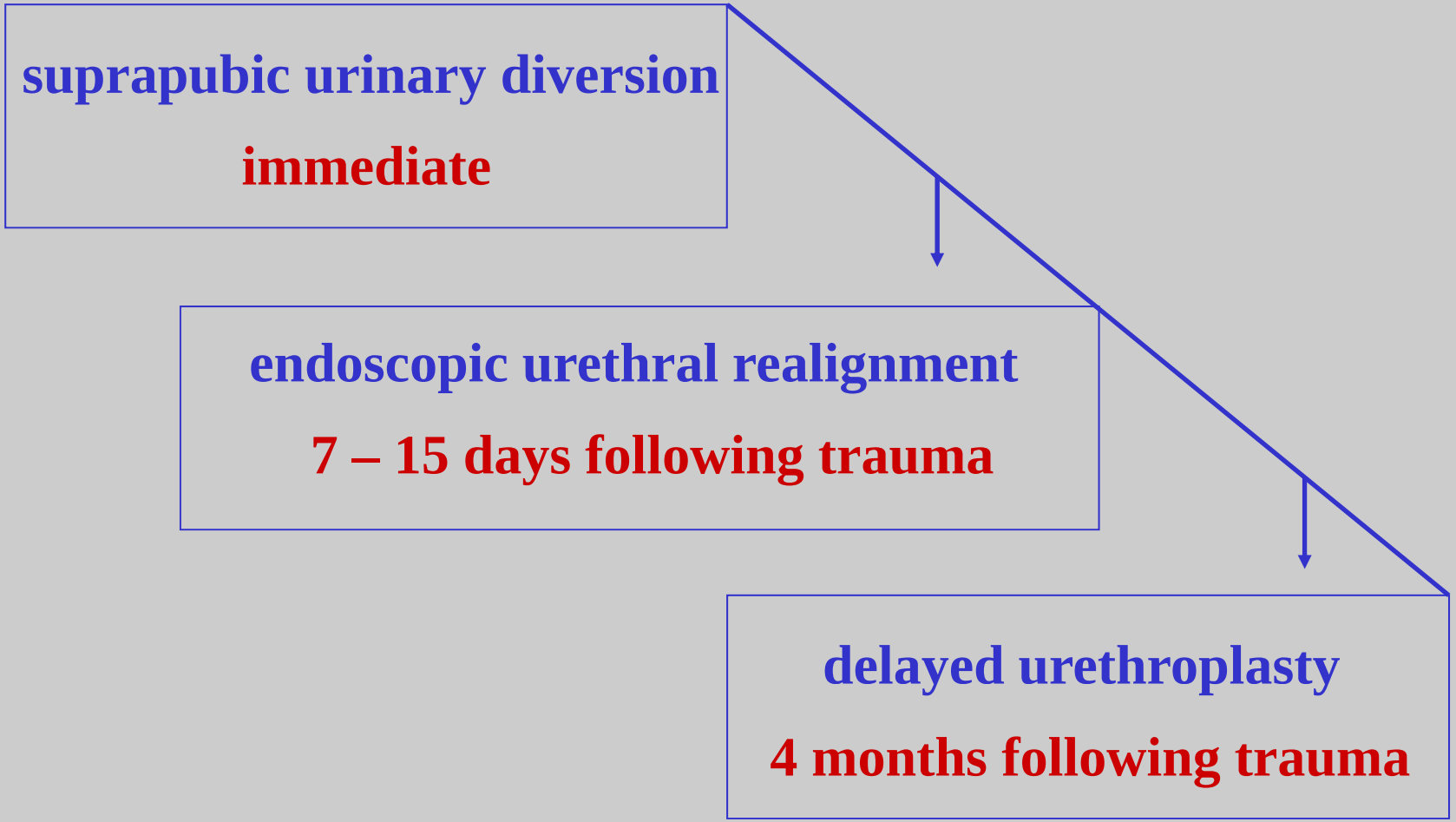


Mr. Richard Turner-Warwick

“... 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

Emergency treatment of posterior urethral trauma



Initial management of patient in the emergency room

Young urologist

e-mail: info@urethralcenter.it website: www.urethralcenter.it

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

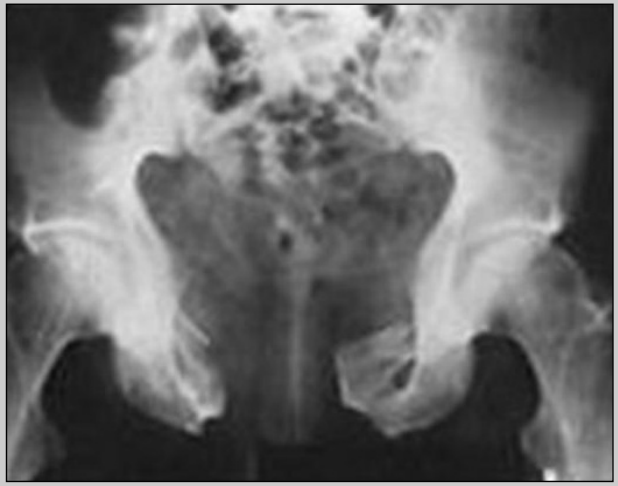
The immediate concern, in the patient with PFUDD, is resuscitation of the patient to preserve life

Preserve the residual sphincter mechanism at the bladder neck

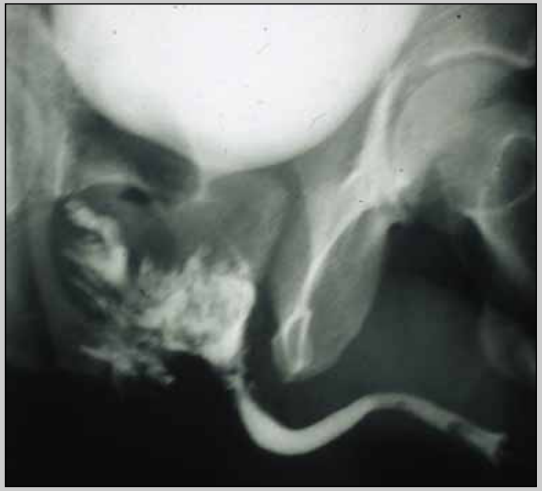
Divert urine away from the site of injury

Avoid jeopardizing sexual function residual to the trauma

Pelvic fracture urethral distraction defects



PFUDD



Diagnosis of posterior urethral disruption requires a high index of suspicion and should be excluded before the urethral catheter is inserted !

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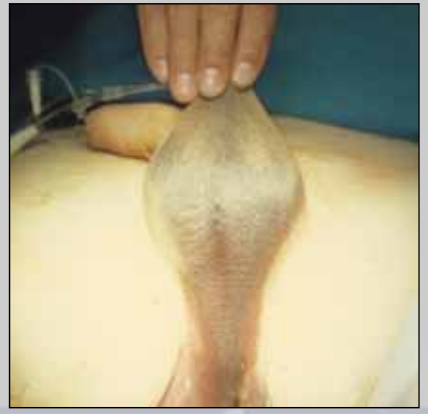
Pelvic fracture urethral distraction defects

PFUDD



- Blood at the external urethral meatus
- Inability to pass urine
- Palpable distended bladder
- Scrotal and/or perineal butterfly hematoma
- High-riding prostate on DRE

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Pelvic fracture urethral distraction defects PFUDD

Absence of these signs or symptoms does not exclude the diagnosis of PFUDD !

Rectal examination helps to exclude a dislocated prostate, but is more important as a tool to screen for rectal injuries

Pelvic fracture urethral distraction defects PFUDD

Whilst clinical history and examination are important in the initial assessment of patients, imaging techniques should confirm the diagnosis

Imaging techniques

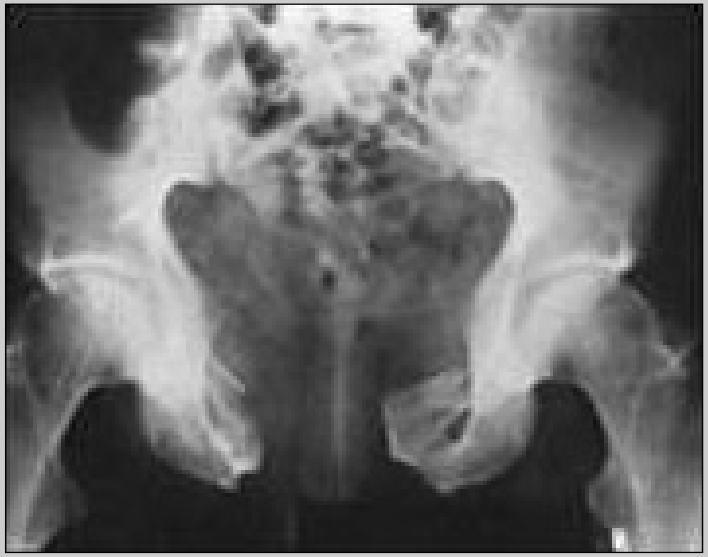
- Anteroposterior pelvic X-ray
- Abdominal and pelvic ultrasonography
- Retrograde urethrography

- Abdominal and pelvic CT scan

- Pelvic MRI

Radiological investigation in the patient with PFUDD should be arranged according to the patient clinical status

Imaging techniques



92% of male subjects with pelvic fracture and urethral injury had specific inferomedial pubic bone fractures or pubic symphysis diastasis

Basta AM. et al. J Urol 2007; 177: 571-575

Imaging techniques

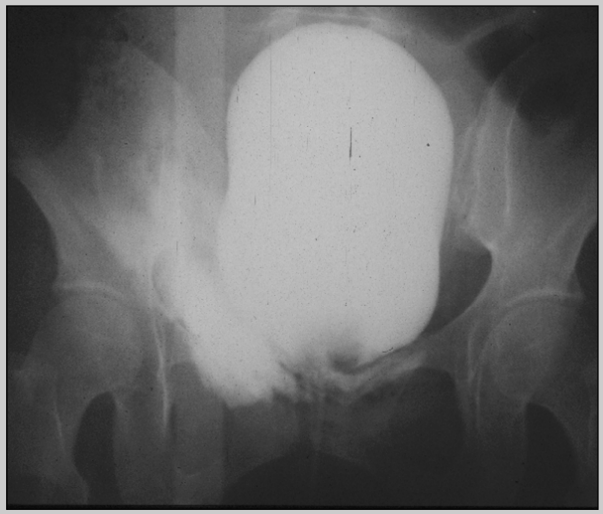
Associated lesions

Site of lesions

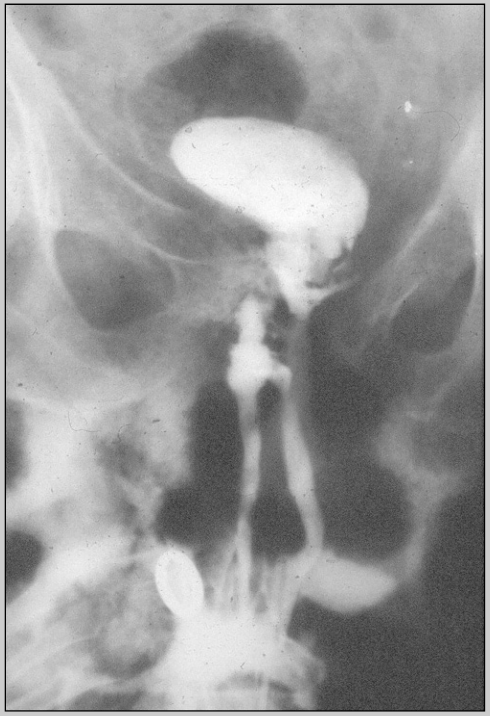
Type of lesions

Imaging techniques

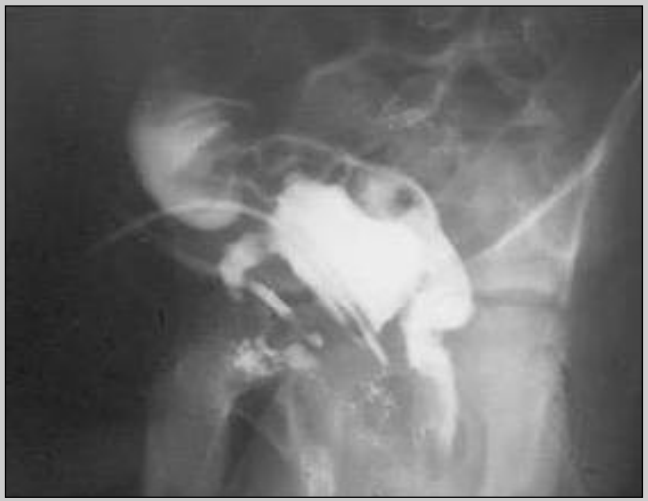
Associated lesions



bladder



bladder neck



rectum

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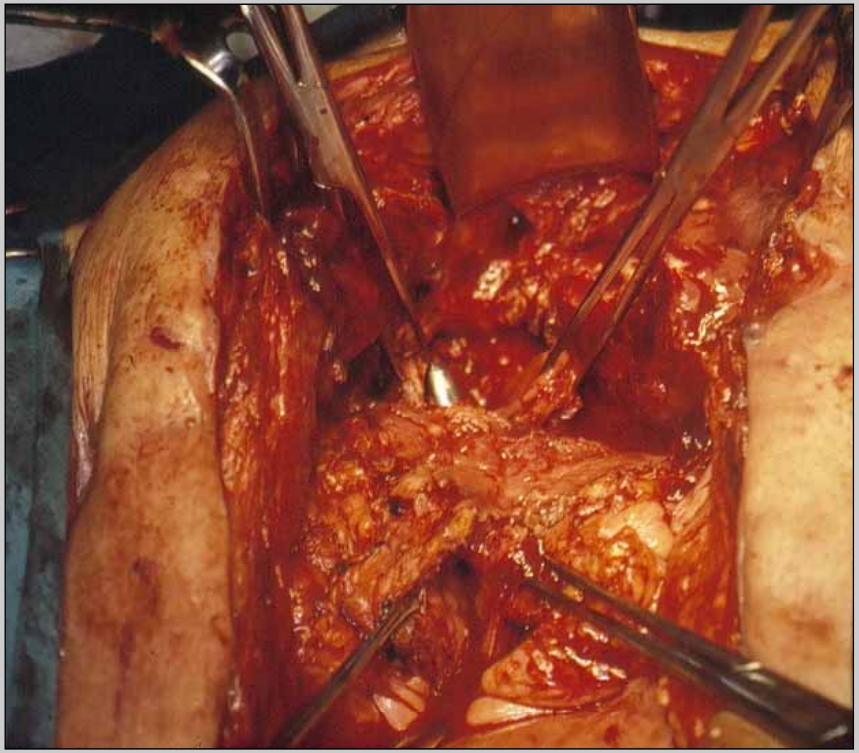
Immediate management of urethral trauma with associated lesions



- bladder rupture
- bladder neck lesions
- rectal tear

→ **Immediate surgical exploration**

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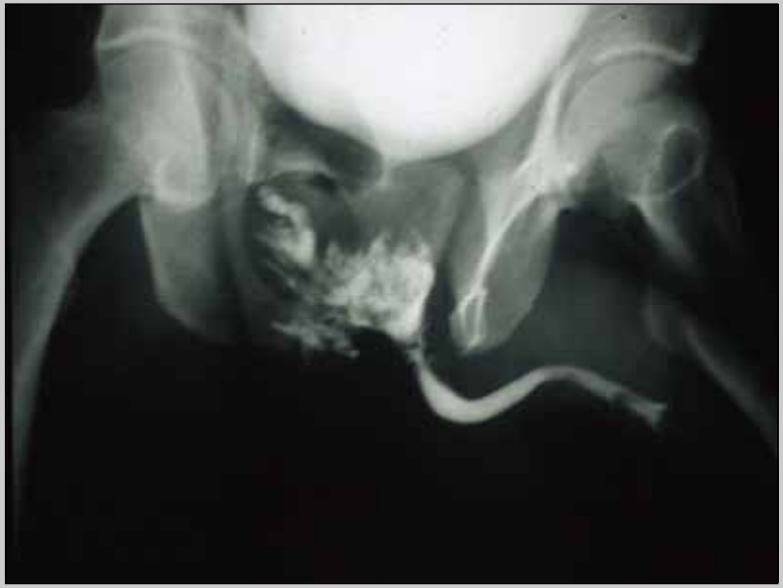
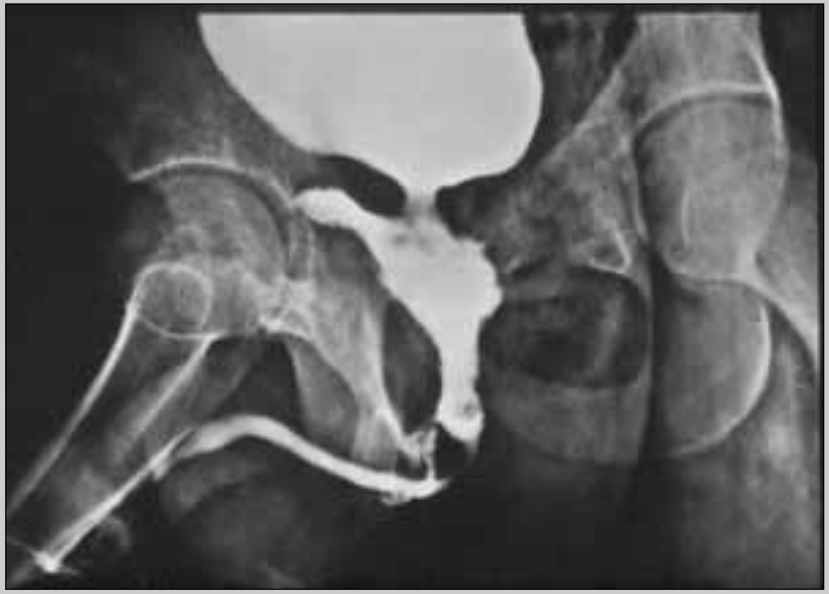
Imaging techniques

Site of lesion

membranous **prostatic**





adult **children**

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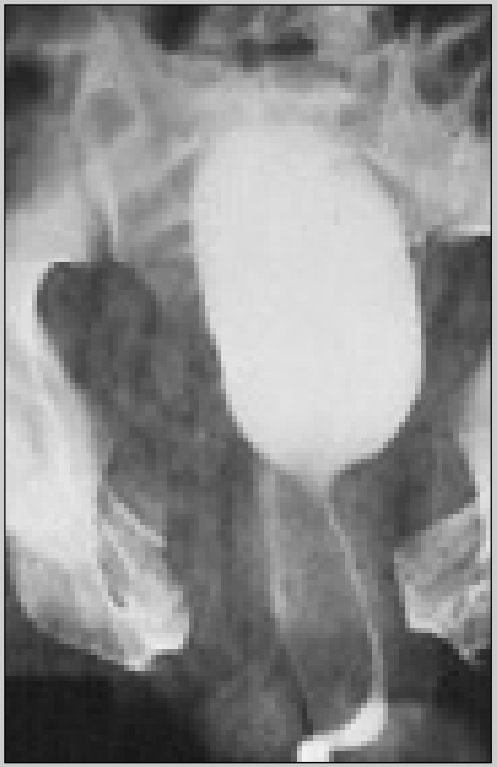
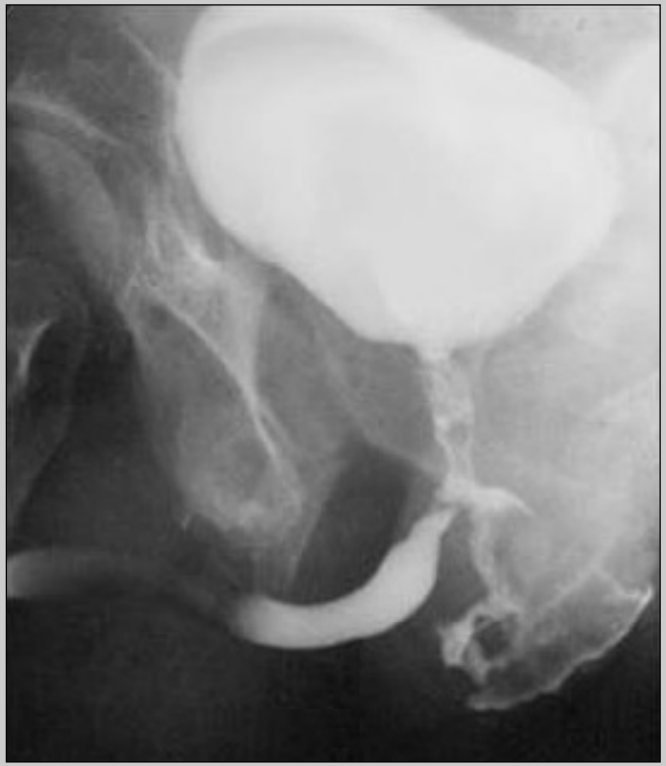
Imaging techniques

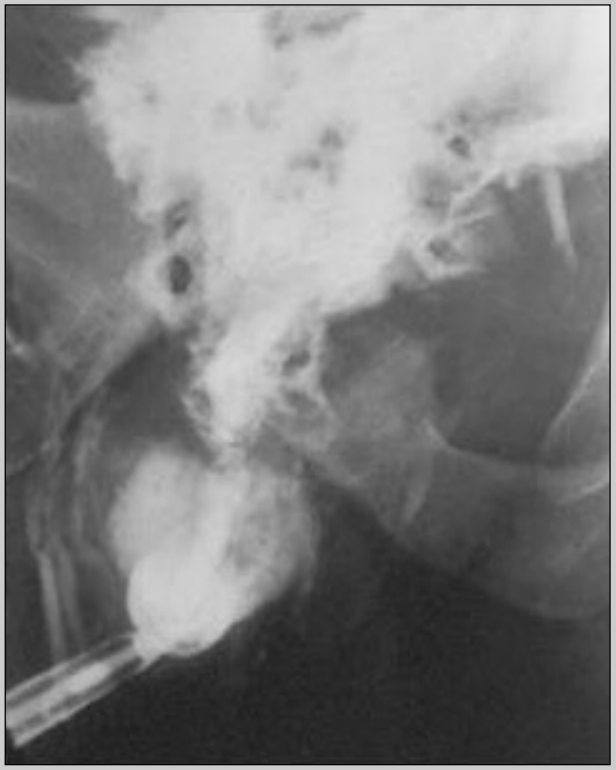
Type of urethral lesion



stretched



partial rupture



complete rupture

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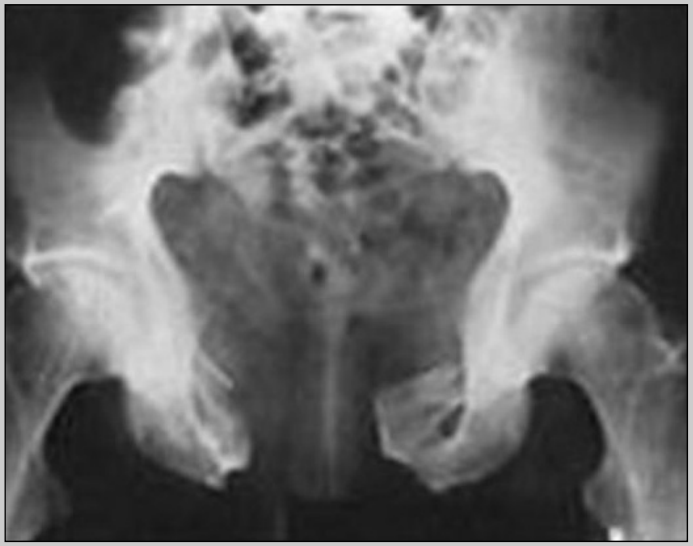
website: www.urethralcenter.it

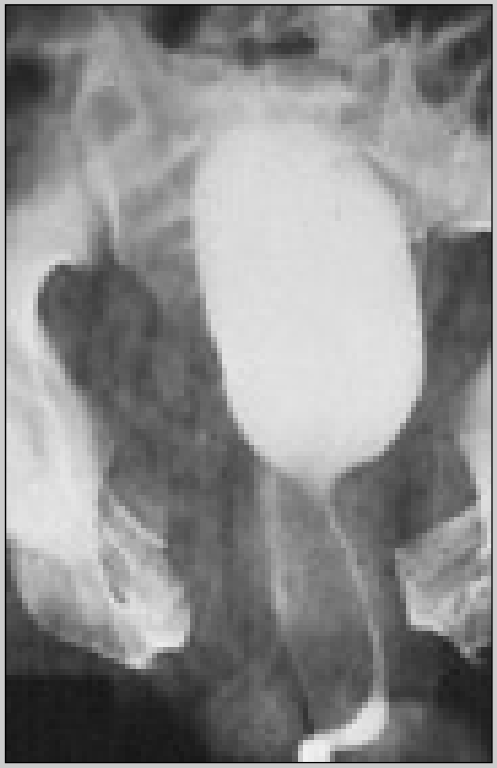
Question for the Audience

?



- Wait and see
- Retrograde urethrography
- Urethroscopy
- Suprapubic cystostomy

Question for the Audience



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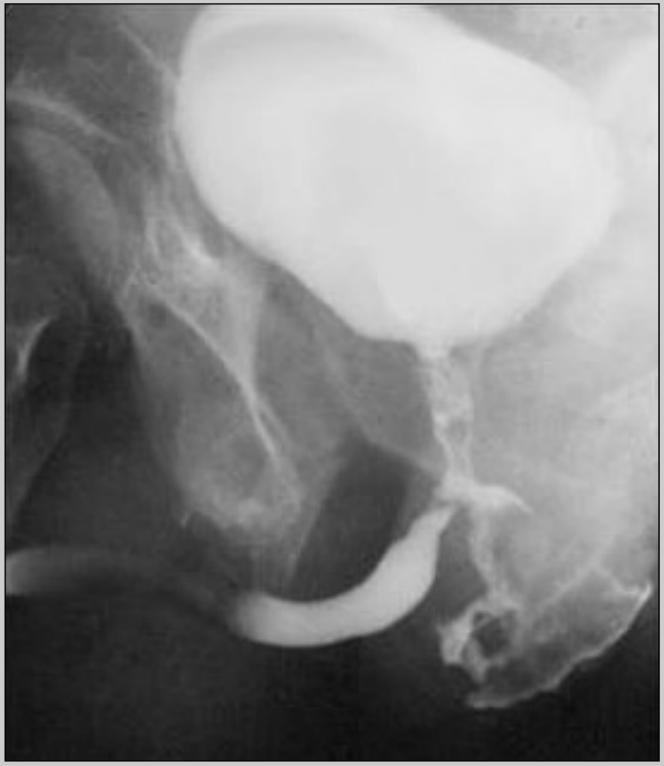
- Wait and see
- Urethroscopy
- Catheter
- Suprapubic cystostomy

Question for the Audience



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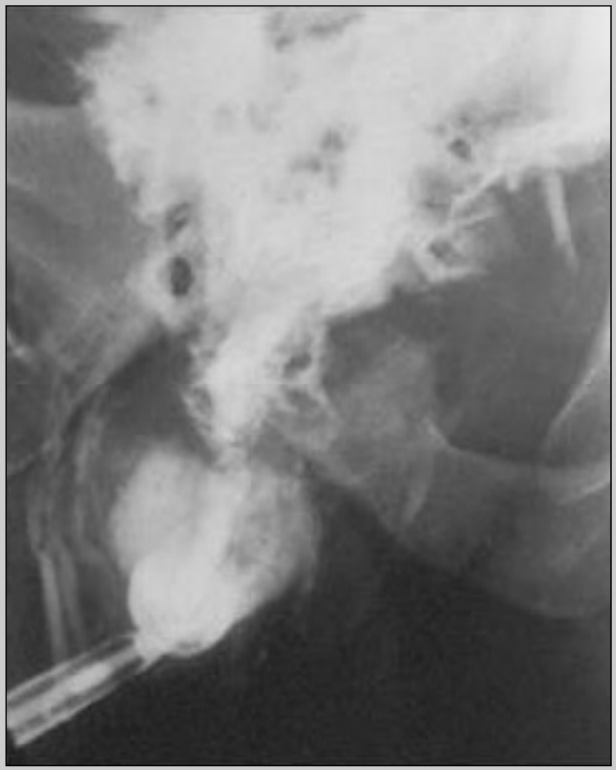
- Urethroscopy
- Catheter
- Suprapubic cystostomy
- Immediate open repair

Question for the Audience



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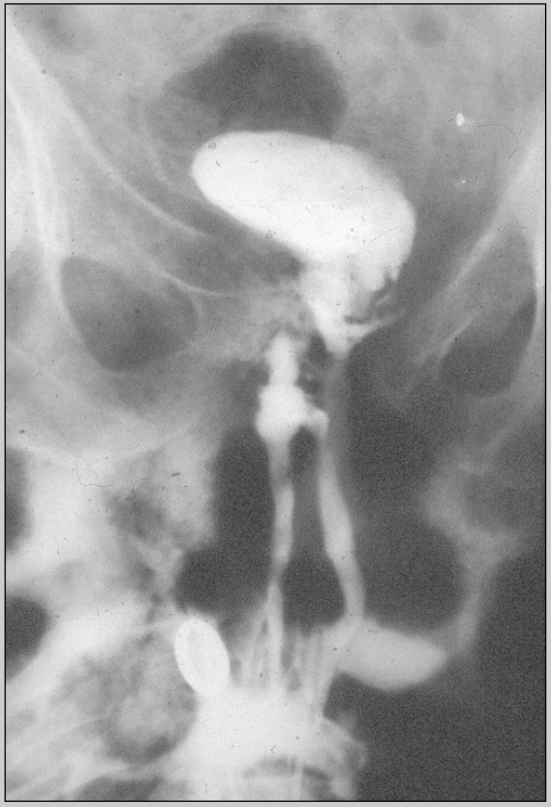
- Suprapubic cystostomy
- Immediate endoscopic realignment
- Immediate open repair

Question for the Audience



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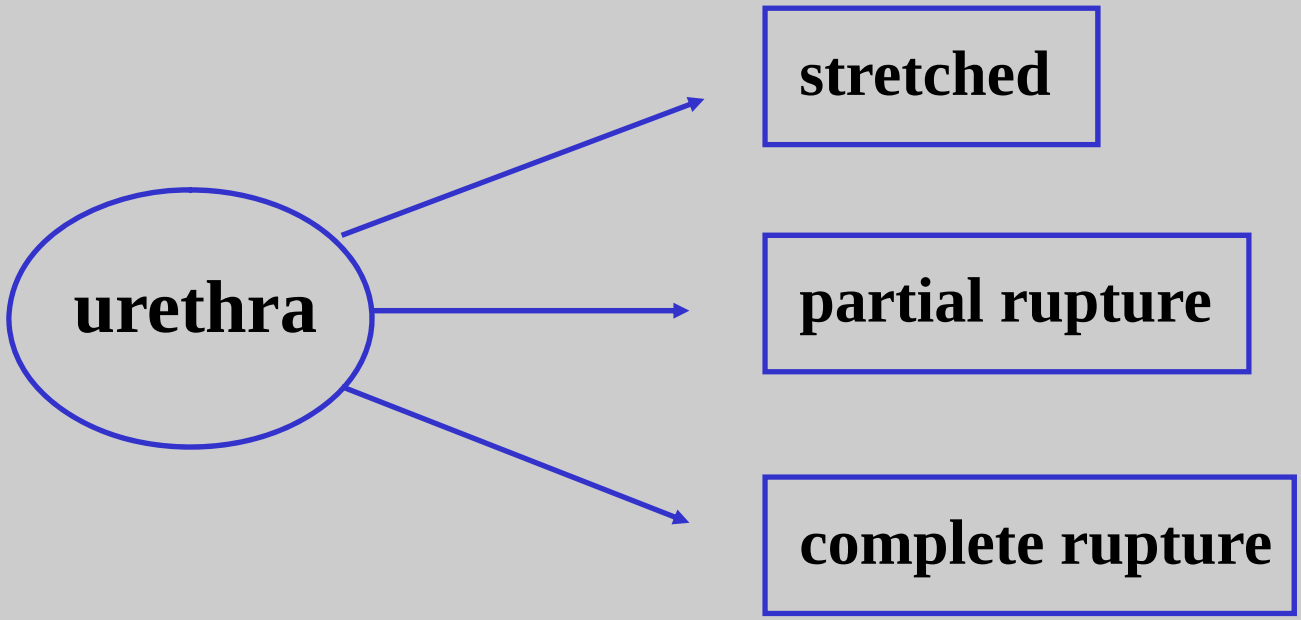
- Suprapubic cystostomy
- Immediate endoscopic realignment
- Immediate open repair

Immediate management of posterior urethral trauma without associated lesions



Percutaneous suprapubic cystostomy

under ultrasonographic guidance

e-mail: info@urethralcenter.it website: www.urethralcenter.it

Why ?

e-mail: info@urethralcenter.it website: www.urethralcenter.it

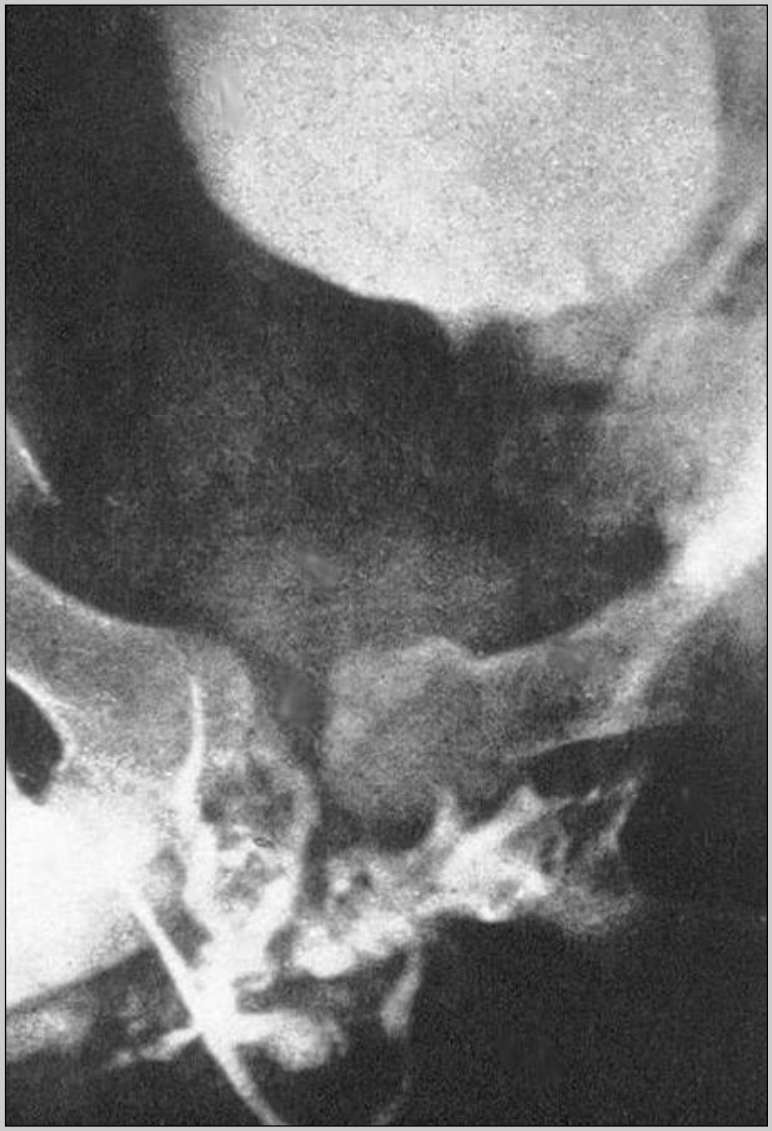
Goal of the initial evaluation and management of the patient with PFUDD

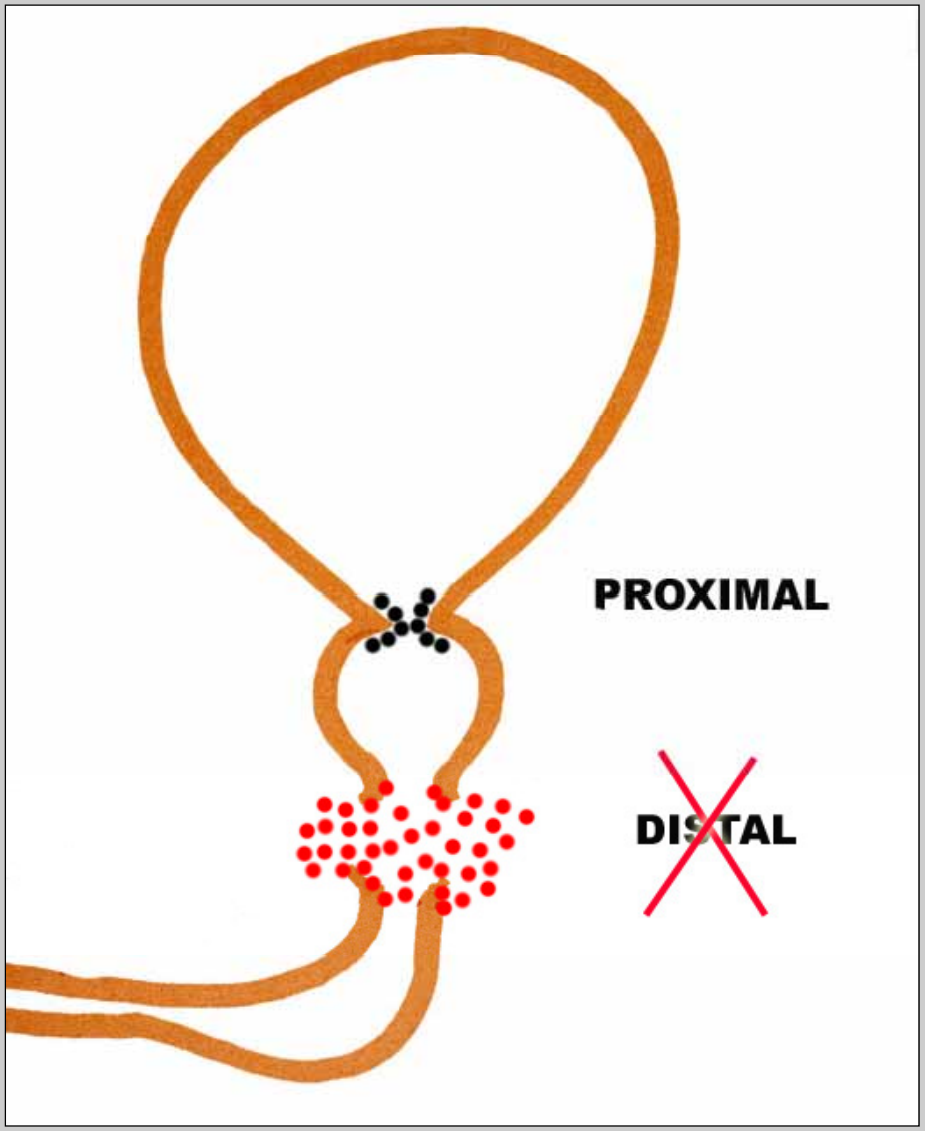
The immediate concern, in the patient with PFUDD, is resuscitation of the patient to preserve life

Preserve the residual sphincter mechanism at the bladder neck

Divert urine away from the site of injury

Avoid jeopardizing sexual function residual to the trauma





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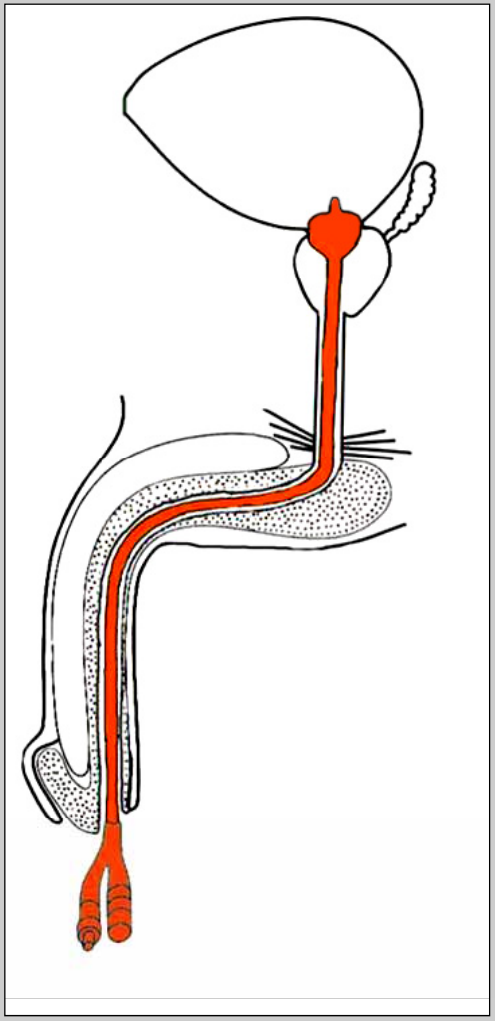
website: www.urethralcenter.it

Urethra: stretched



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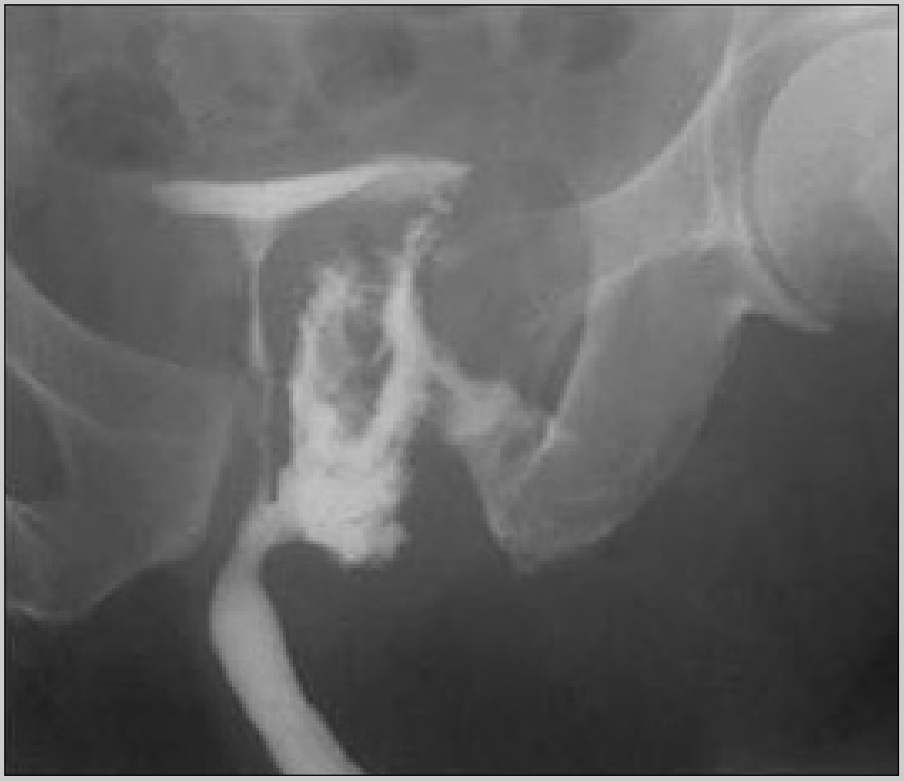
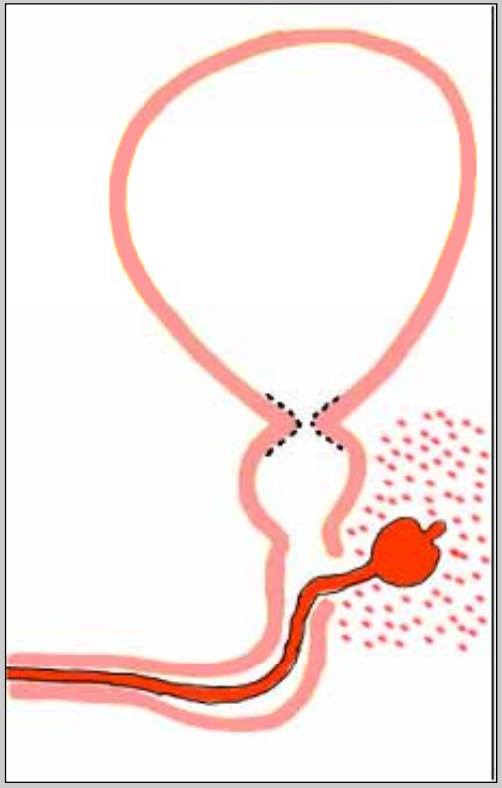
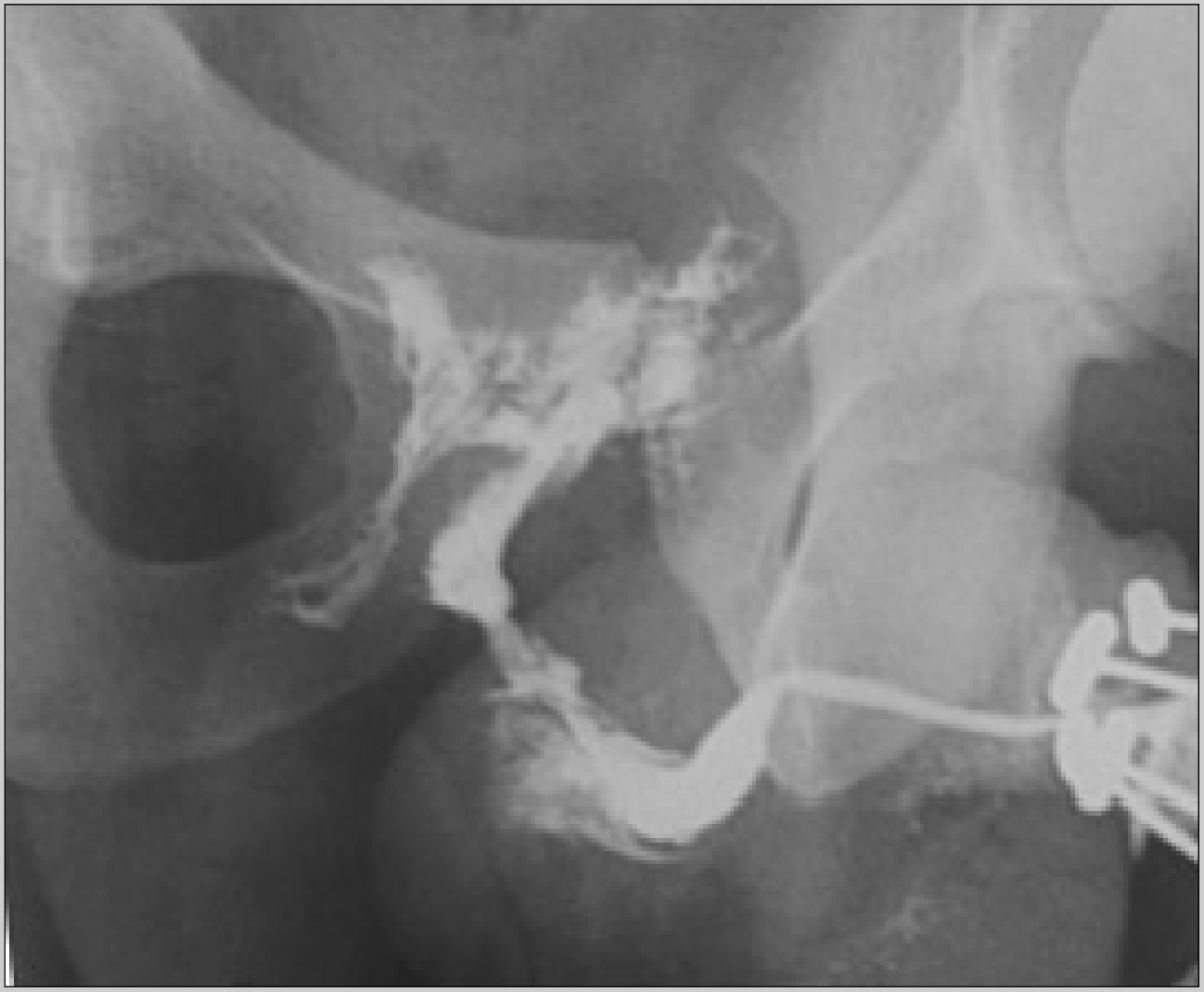
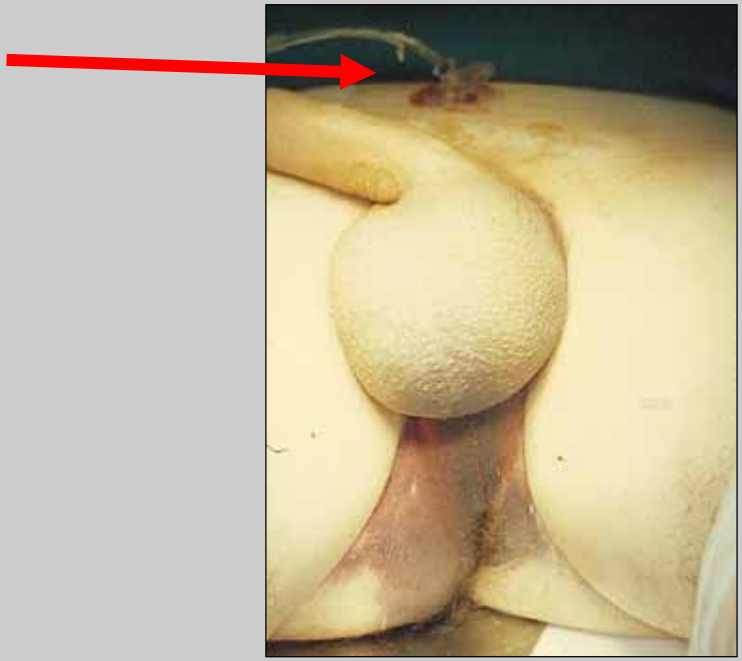
Urethra: partial rupture

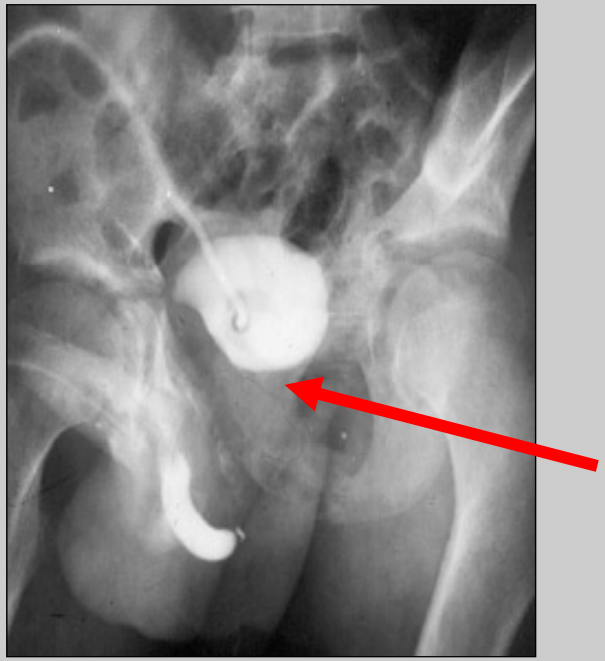




Urethra: complete rupture







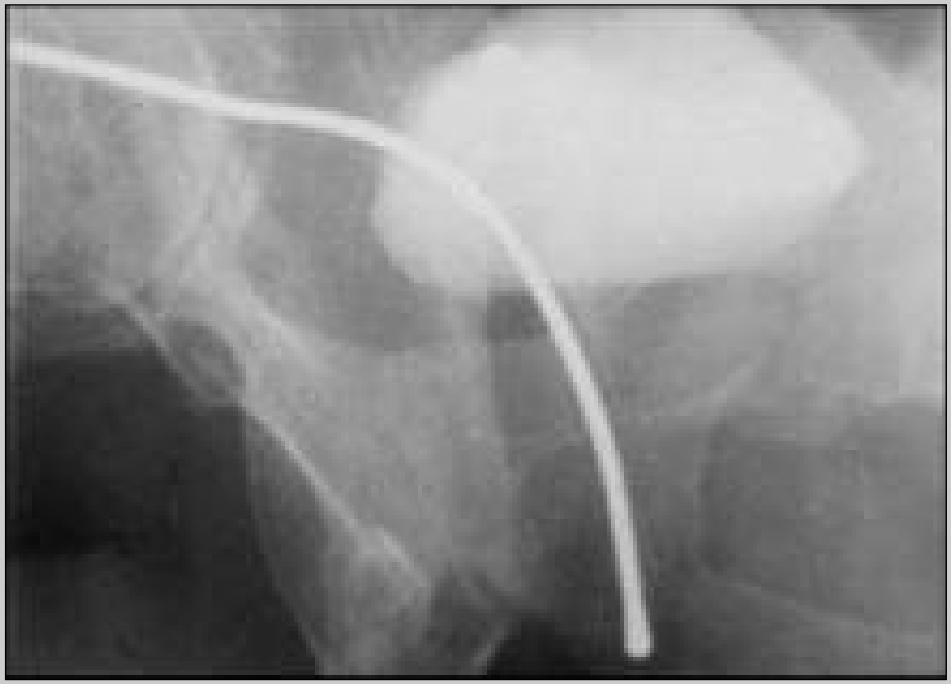
In patients with PFUDD, urinary diversion by suprapubic cystostomy is the only method than can surely avoid damage to the bladder neck, thus fully preserving urinary continence !

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**

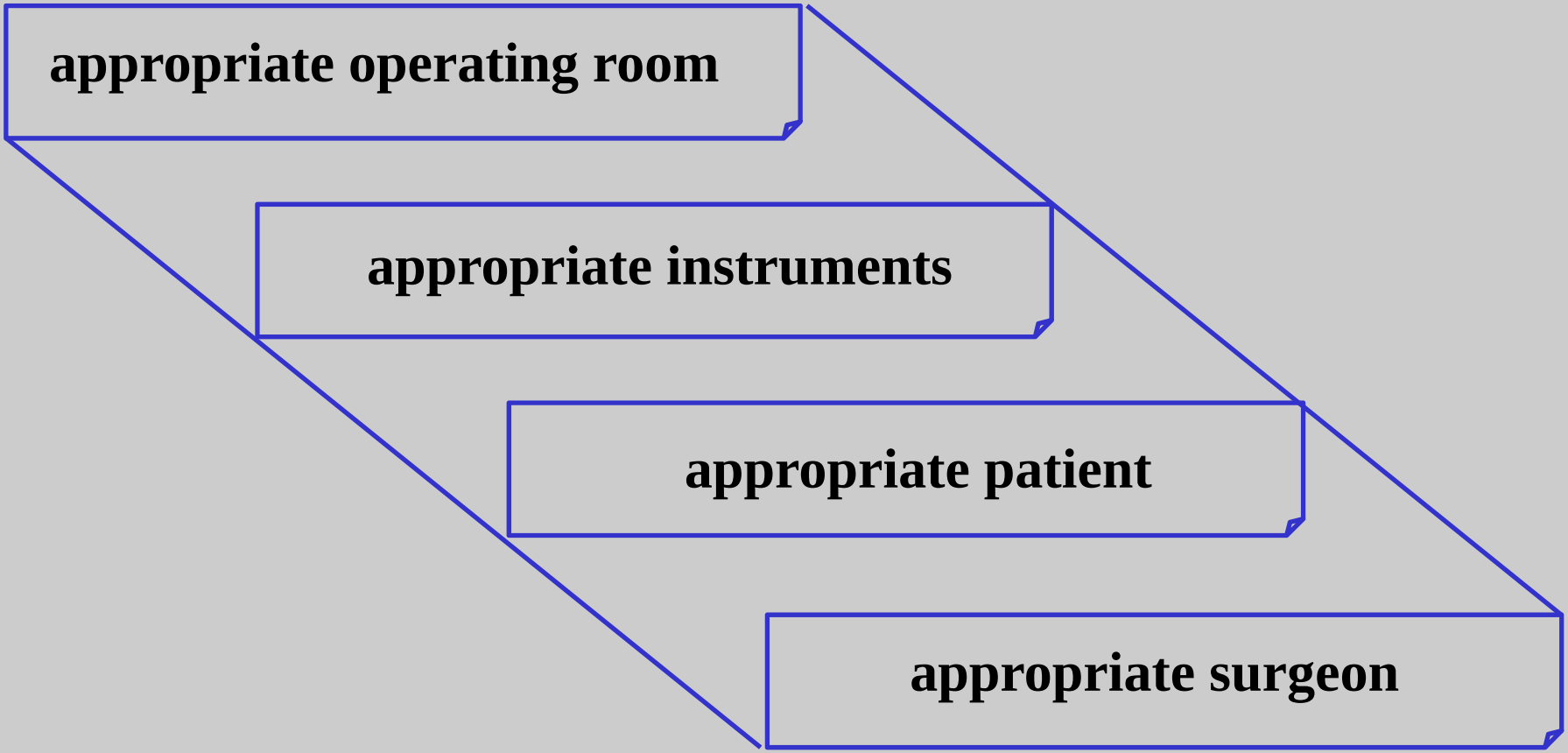
Endoscopic urethral realignment



?

Old urologists

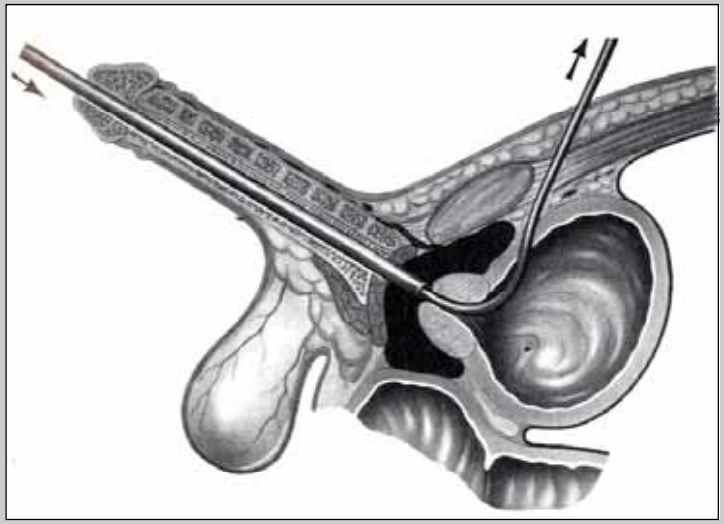
Endoscopic urethral realignment

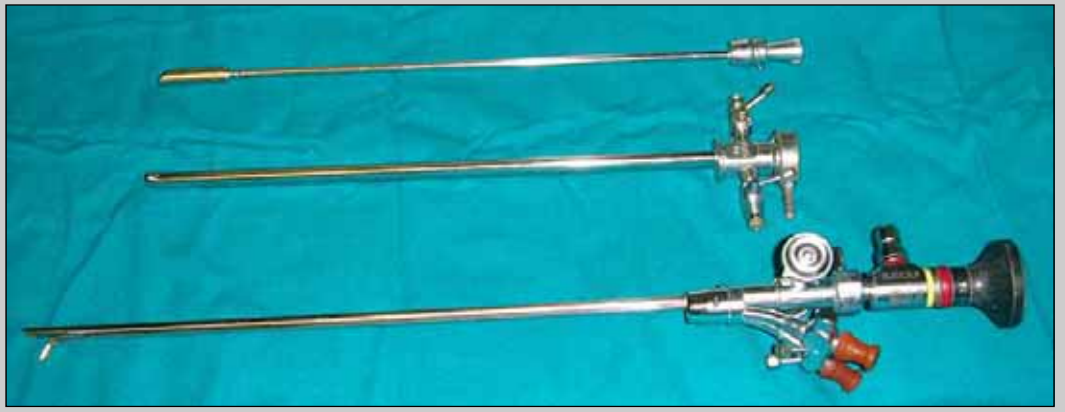


Endoscopic urethral realignment

appropriate operating room ?

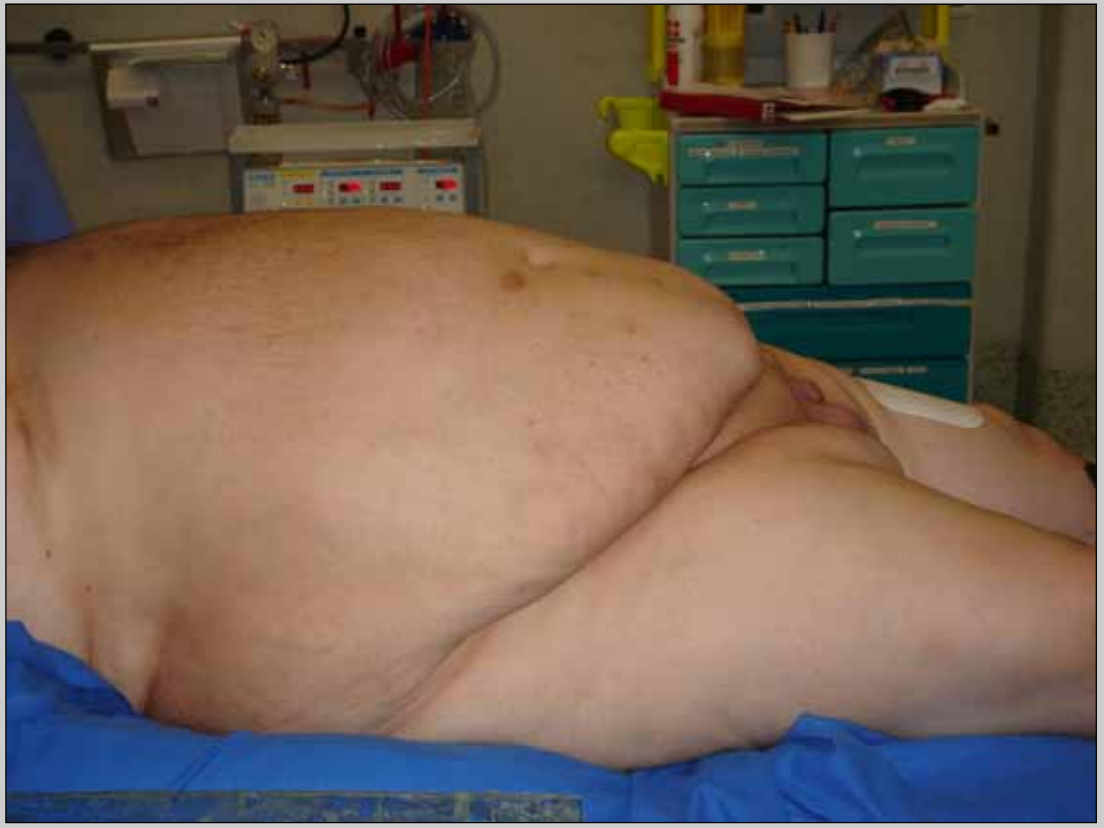
Endoscopic urethral realignment





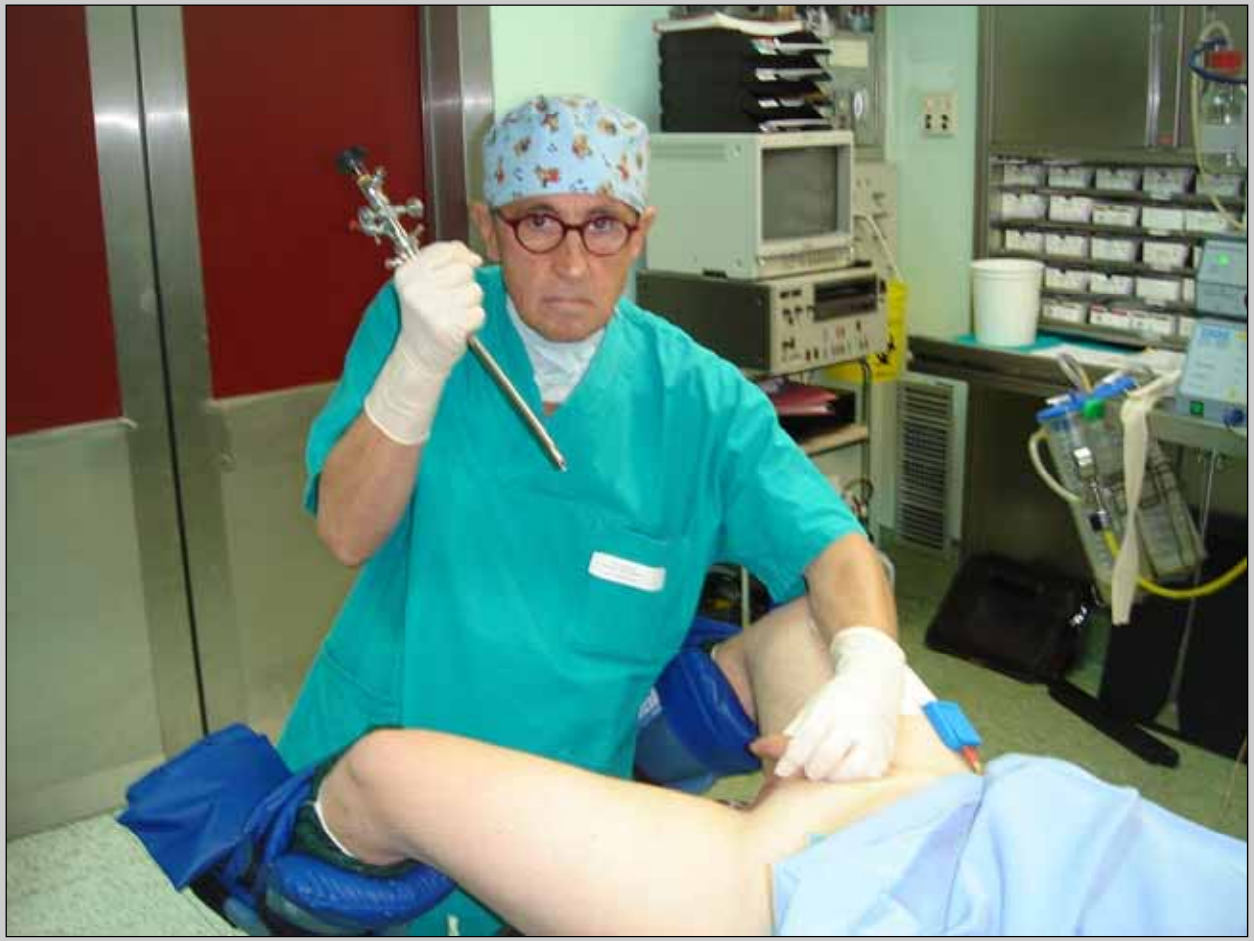
appropriate instruments ?

Endoscopic urethral realignment



appropriate patient ?

Endoscopic urethral realignment



appropriate surgeon ?

Question for the Audience

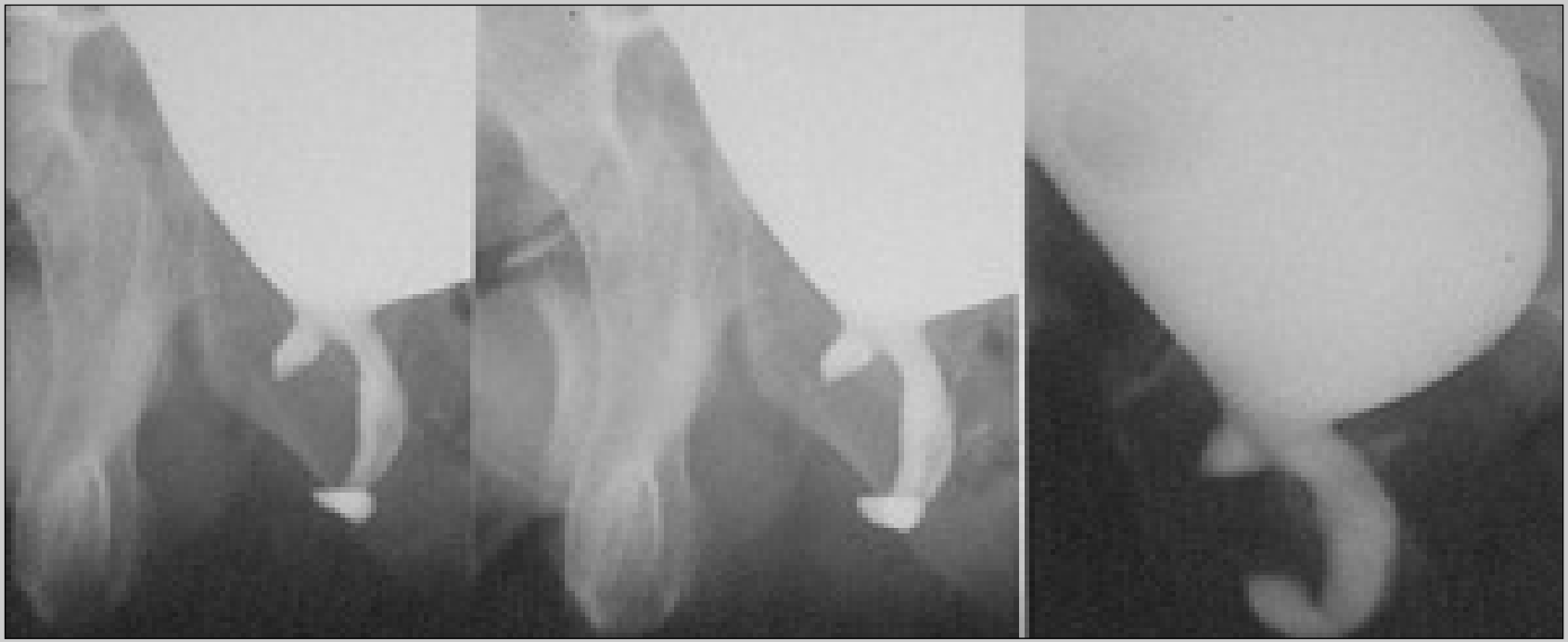
Endoscopic urethral realignment

Immediate or Delayed ?

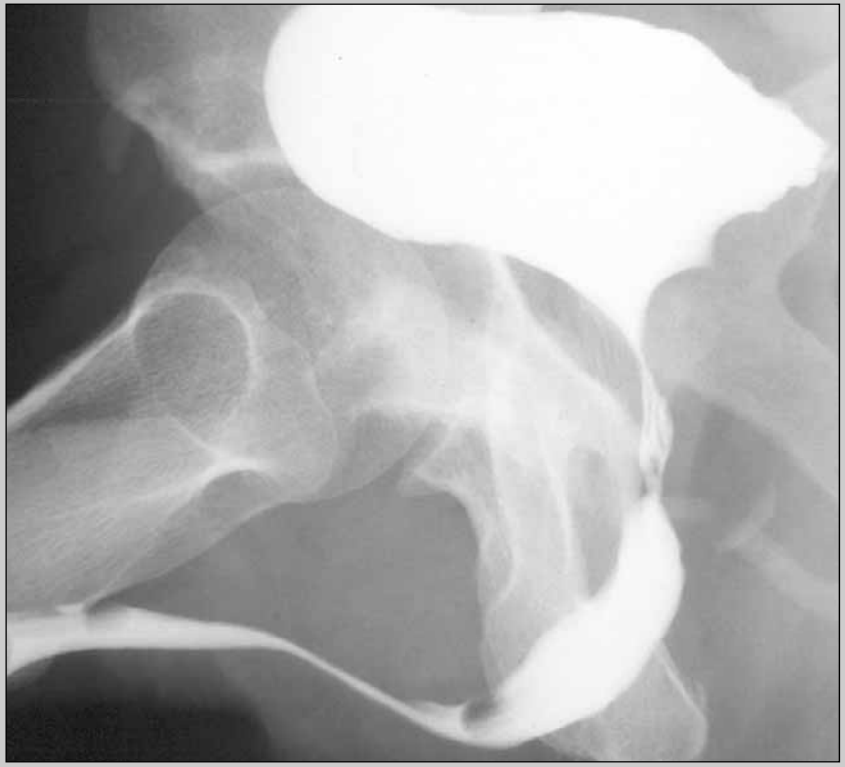
Question for the Audience

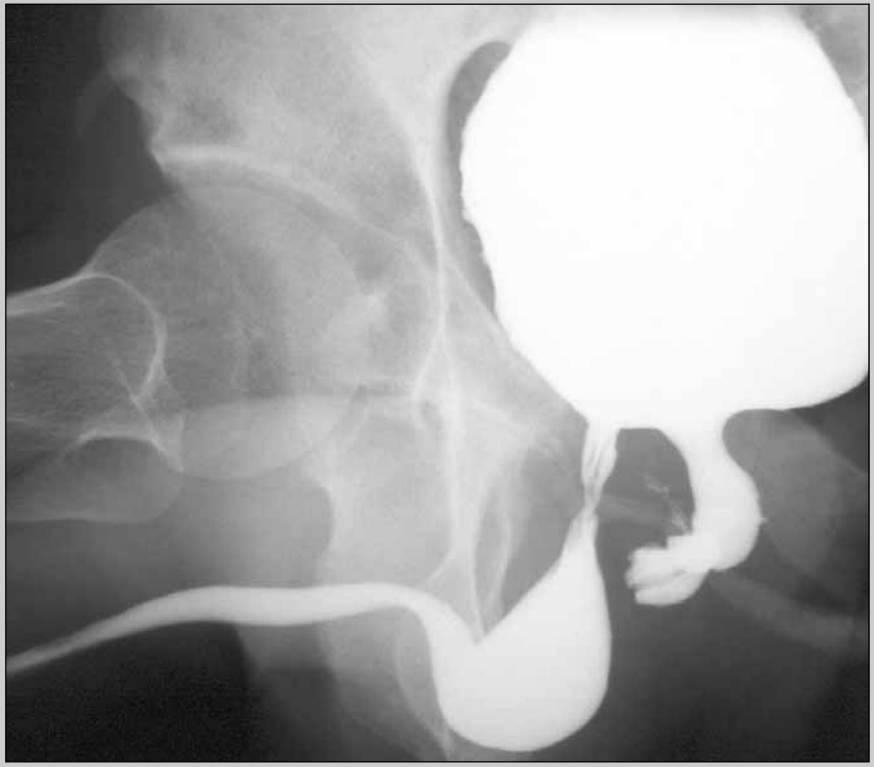
Endoscopic urethral realignment

Simple or Complex procedure ?



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





Five-hour emergency (?) urethral realignment

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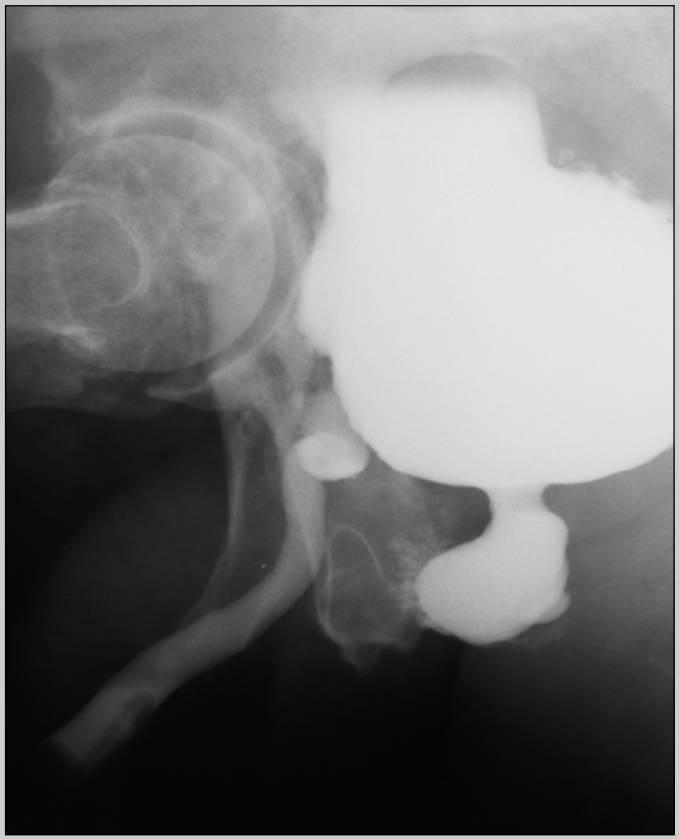

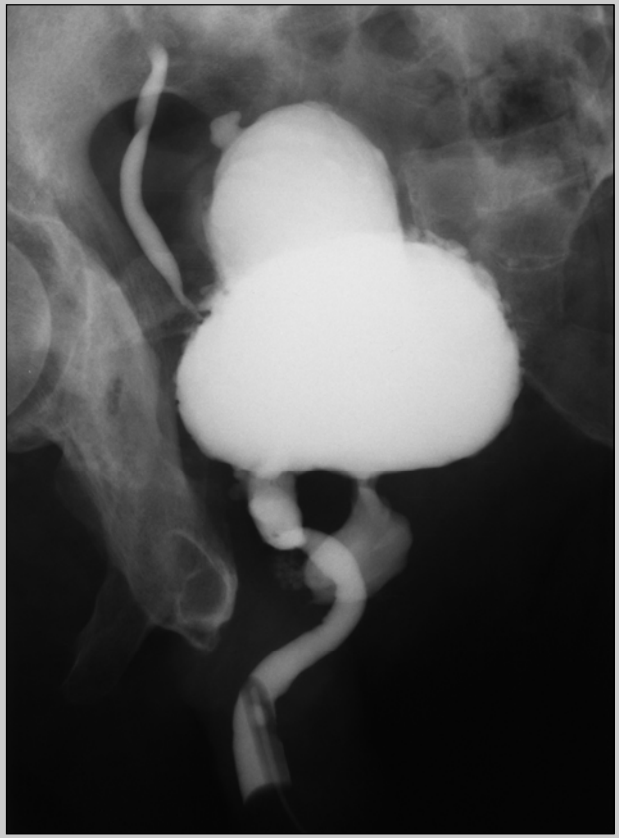

In one week, this patient underwent five attempts (?) to perform endoscopic and surgical urethral realignment

Center for Reconstructive Urethral Surgery
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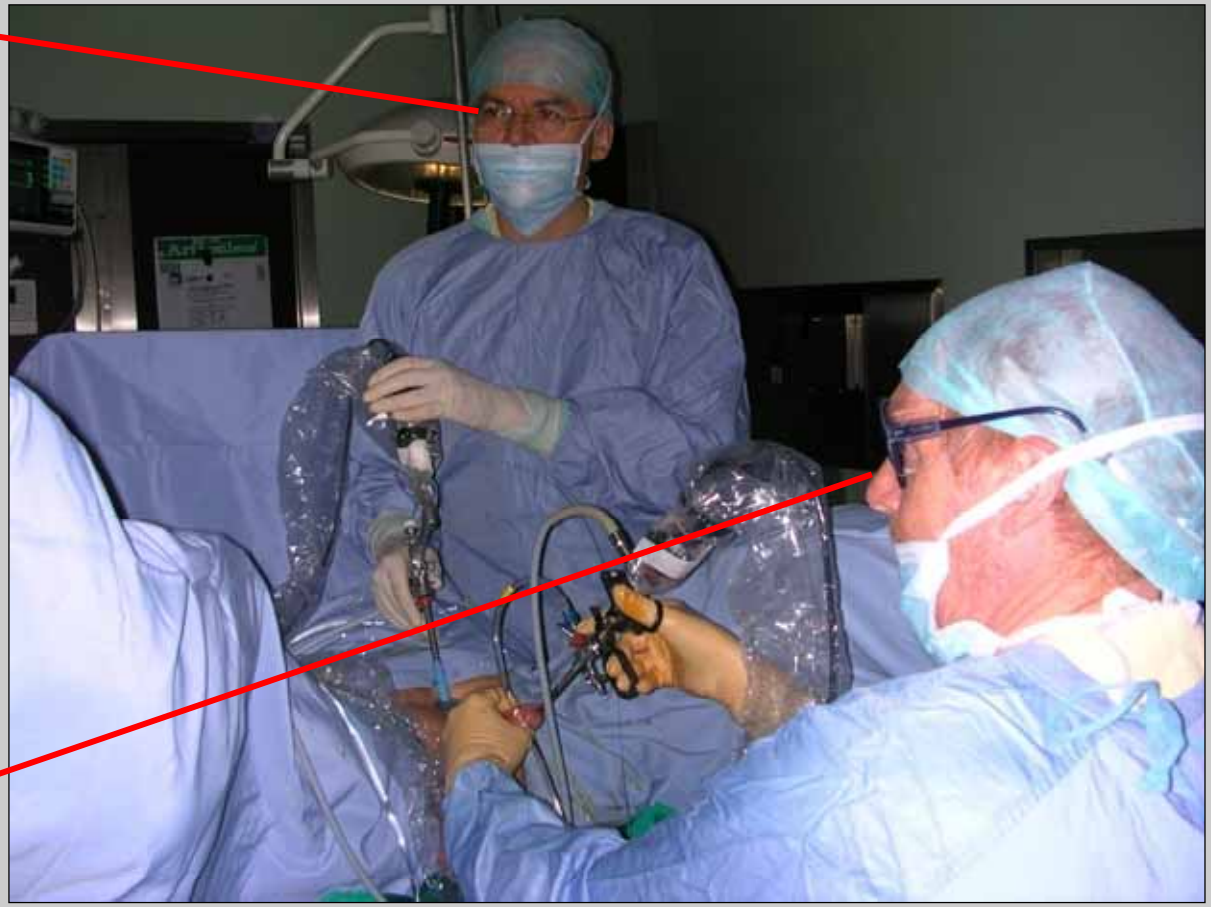

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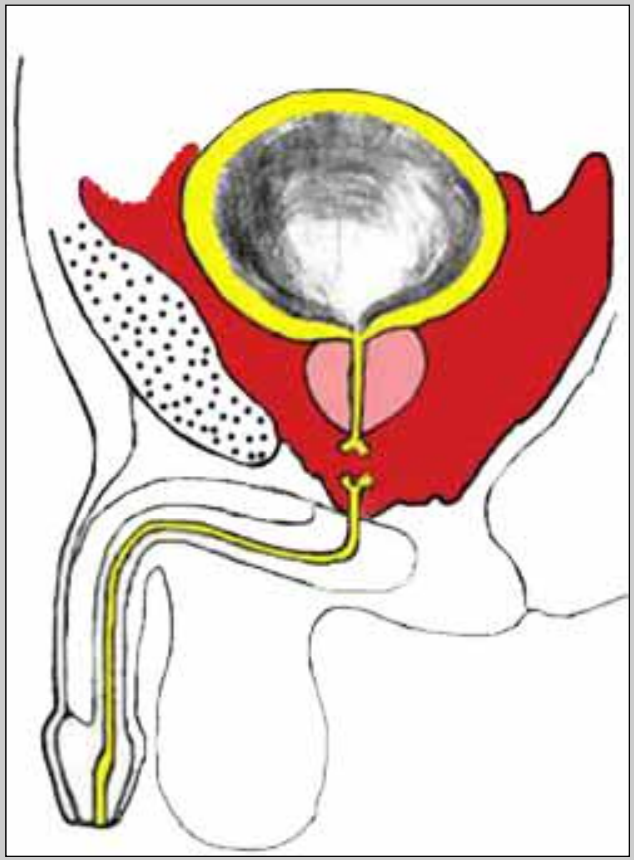
Endoscopic urethral realignment

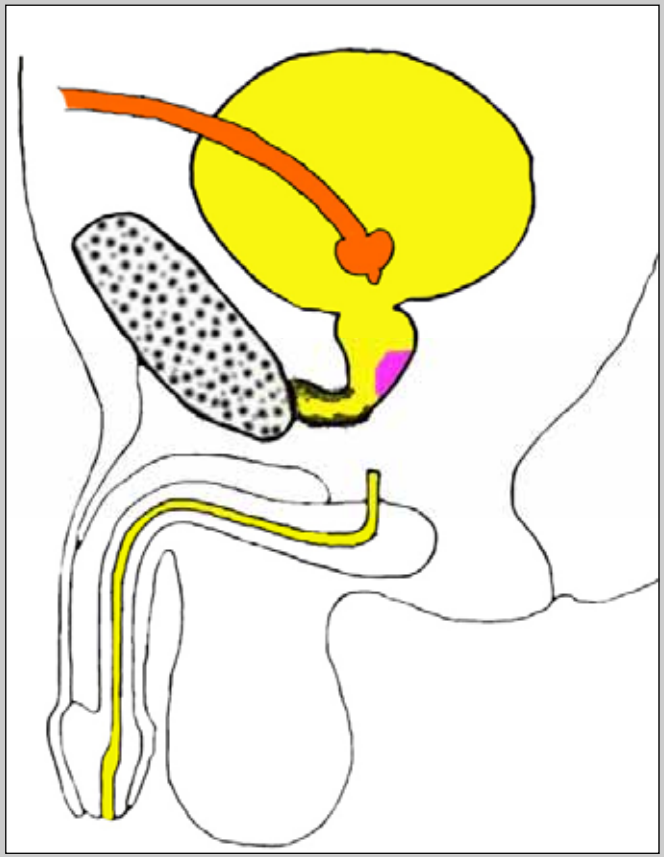
7 – 15 days following trauma

Why ?

NO

Endoscopic urethral realignment





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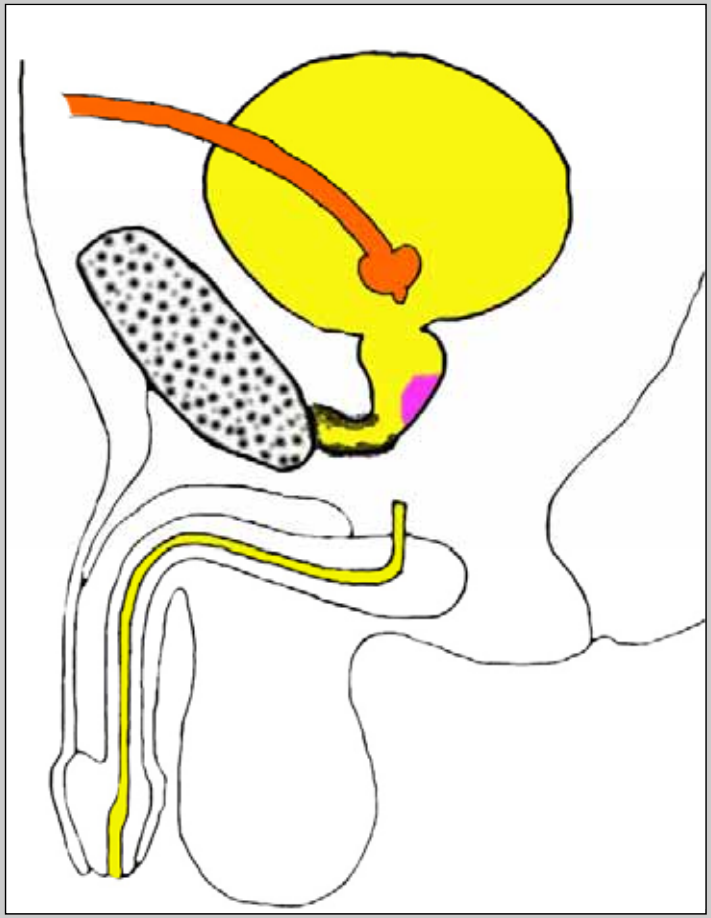

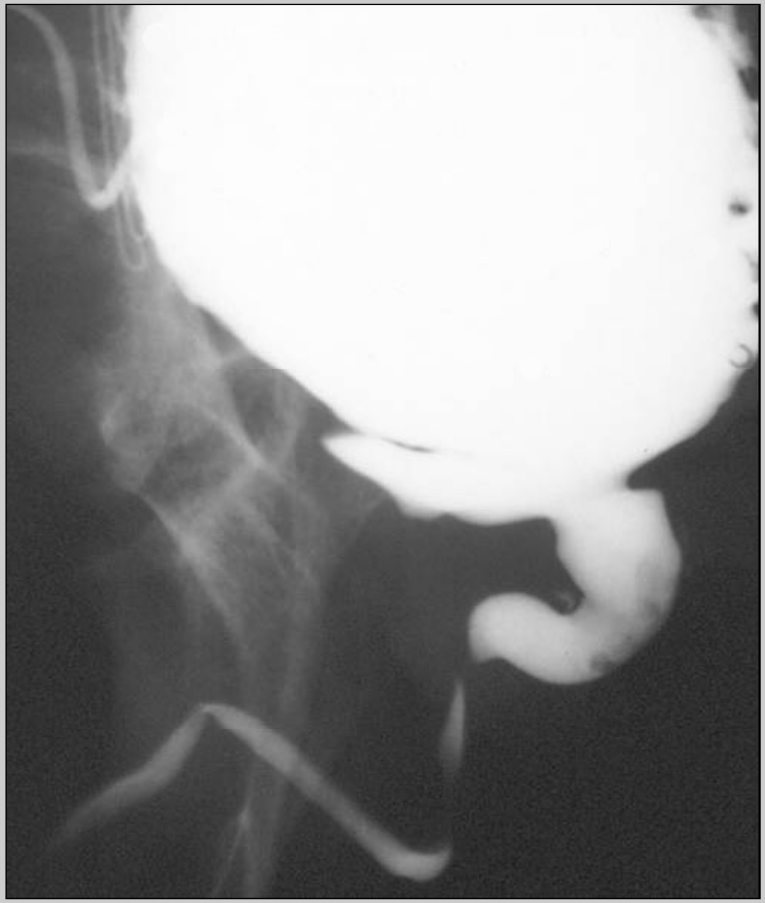

Complex posterior urethral stricture

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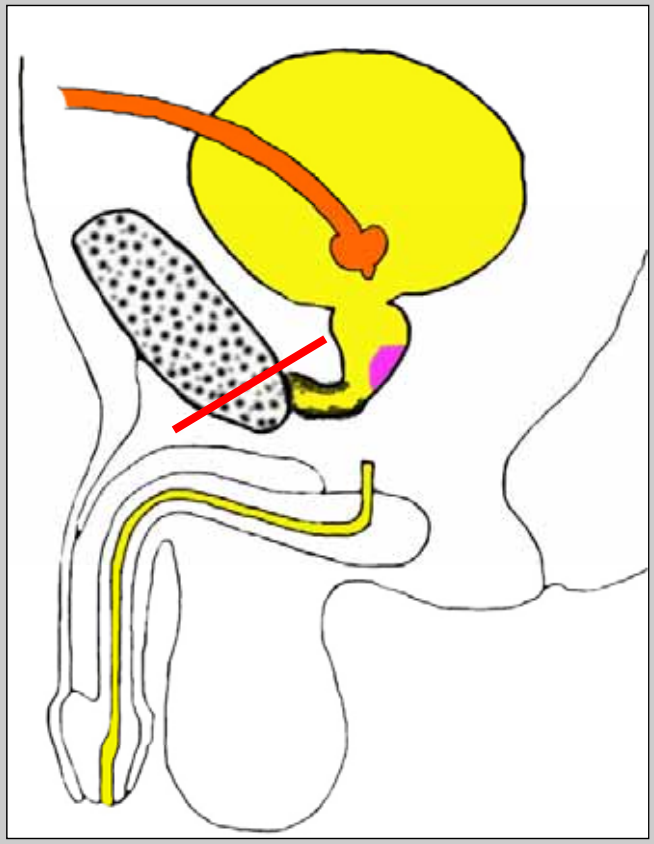

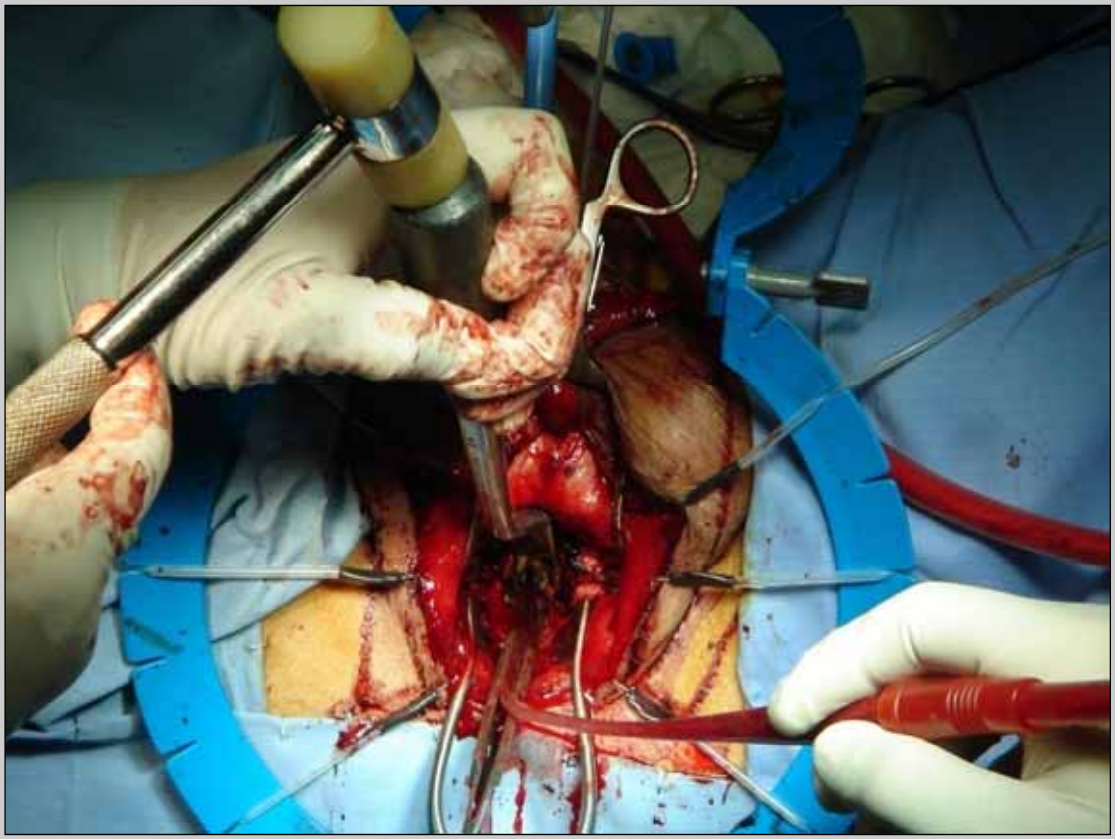

Perineal pubectomy

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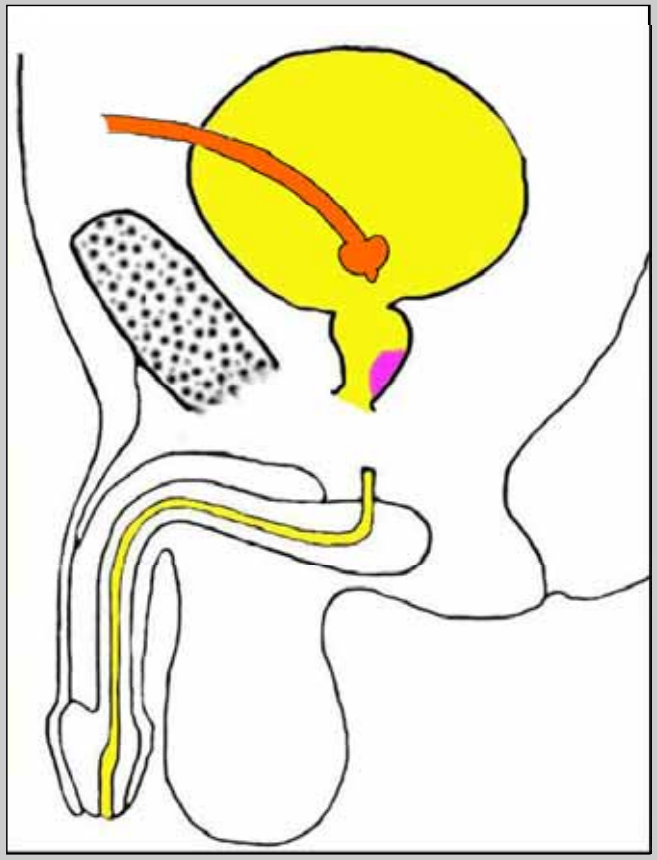

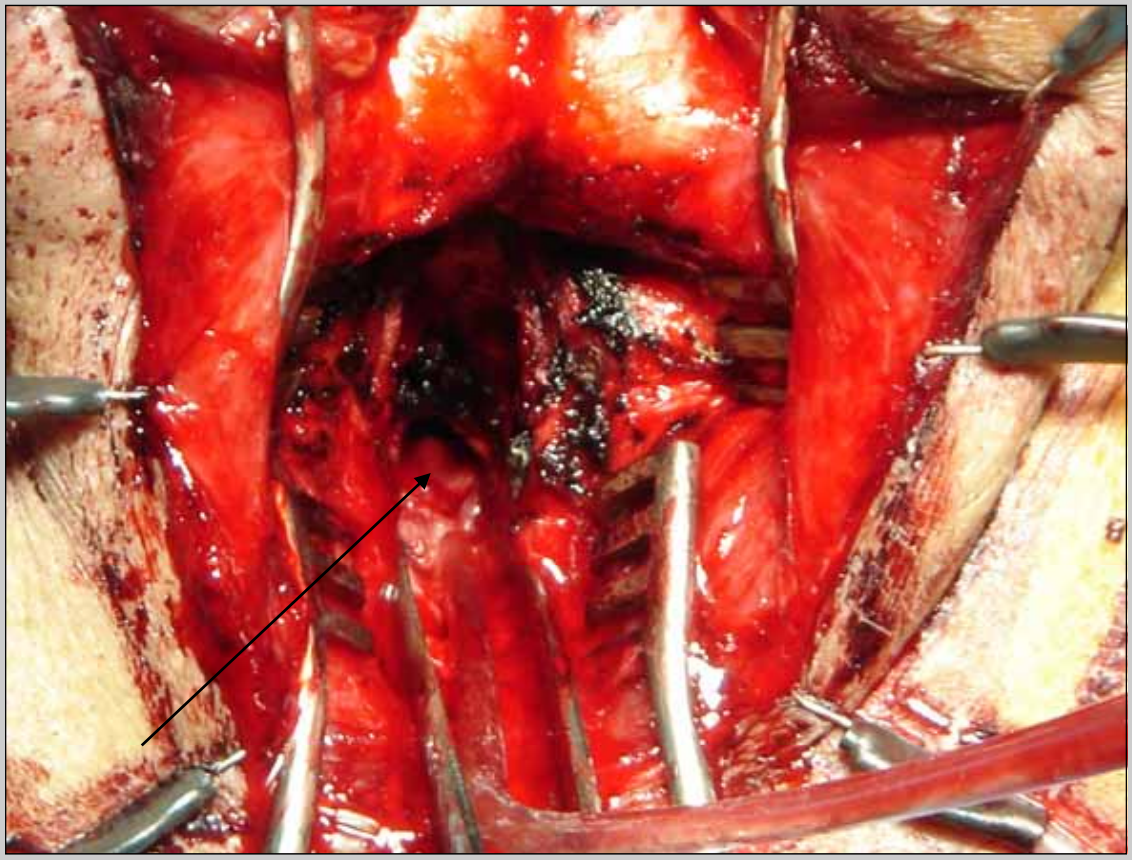

Perineal pubectomy

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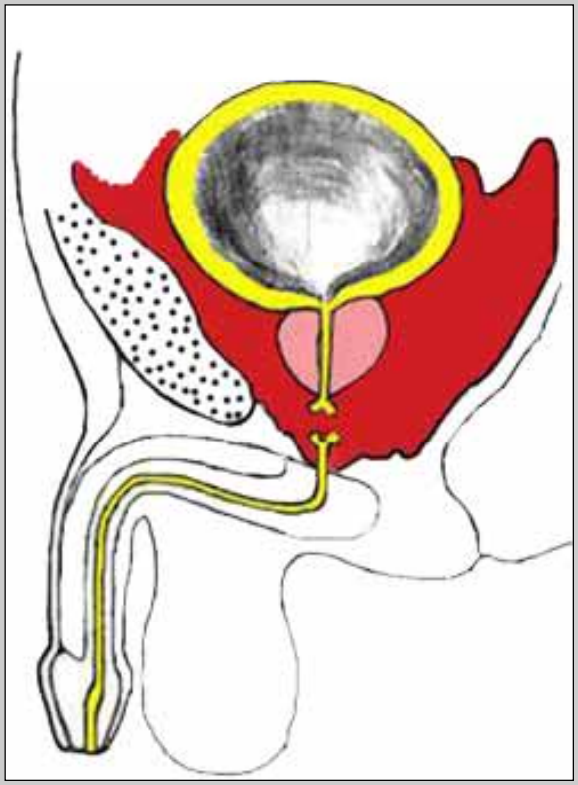
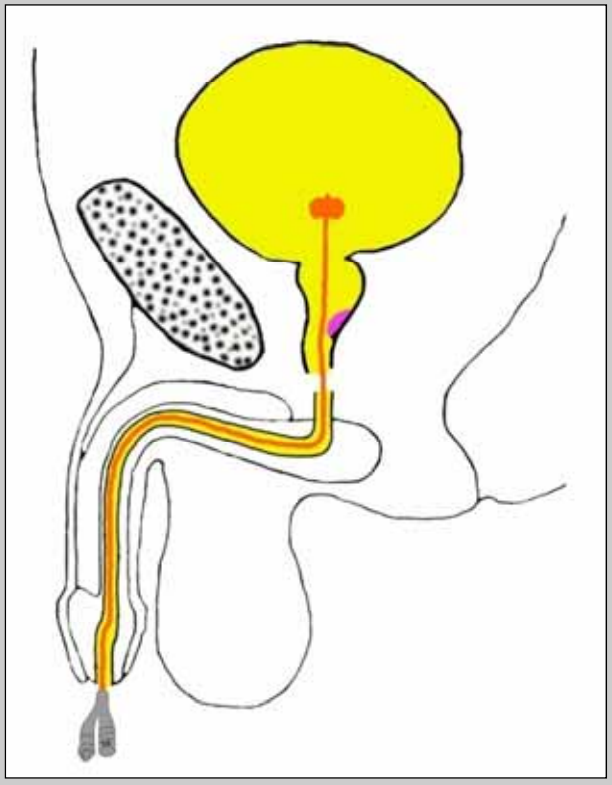
YES

Endoscopic urethral realignment





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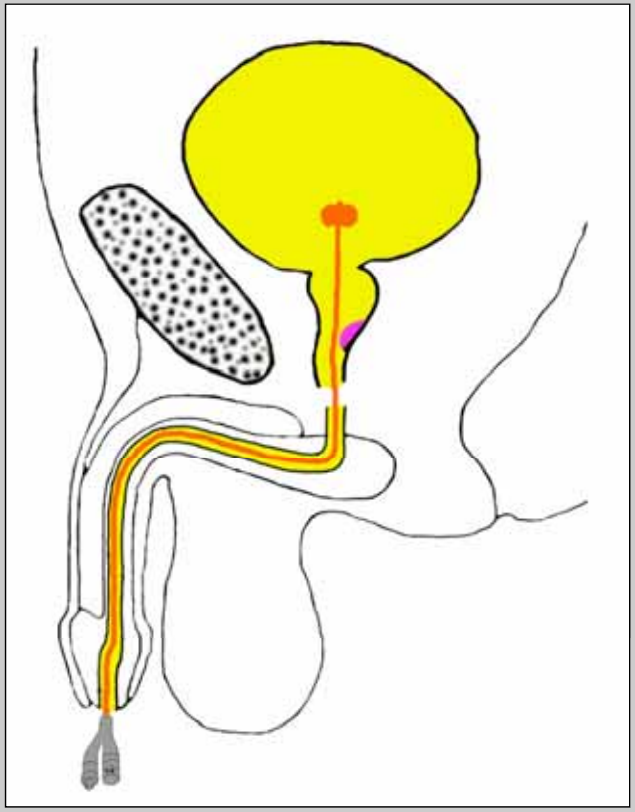

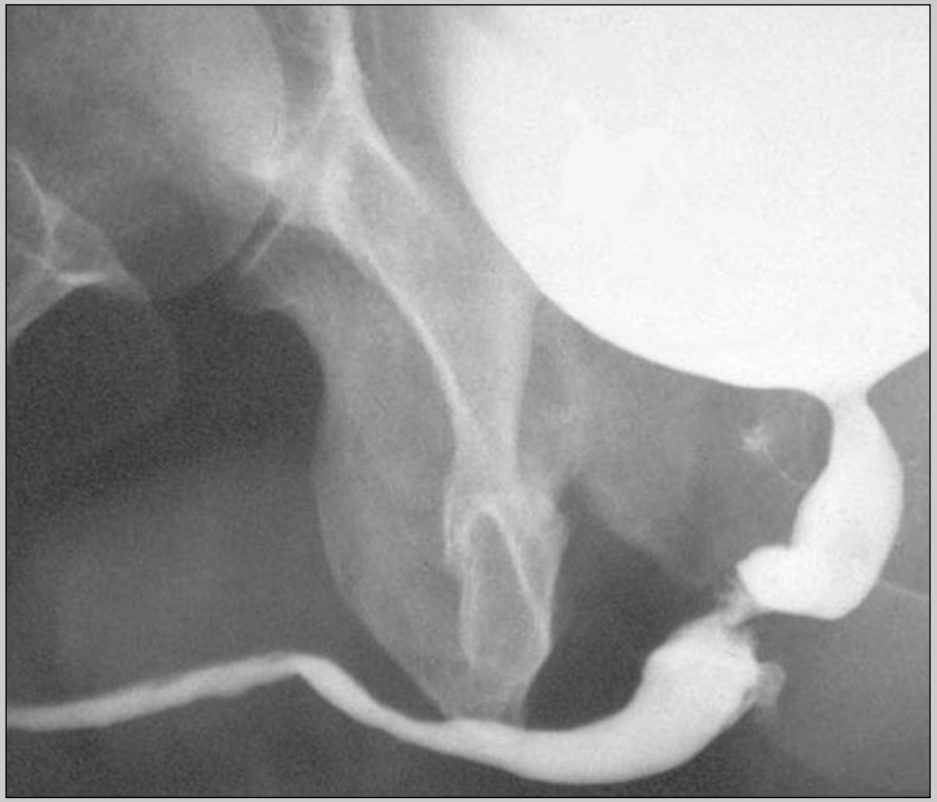

Simple posterior urethral stricture

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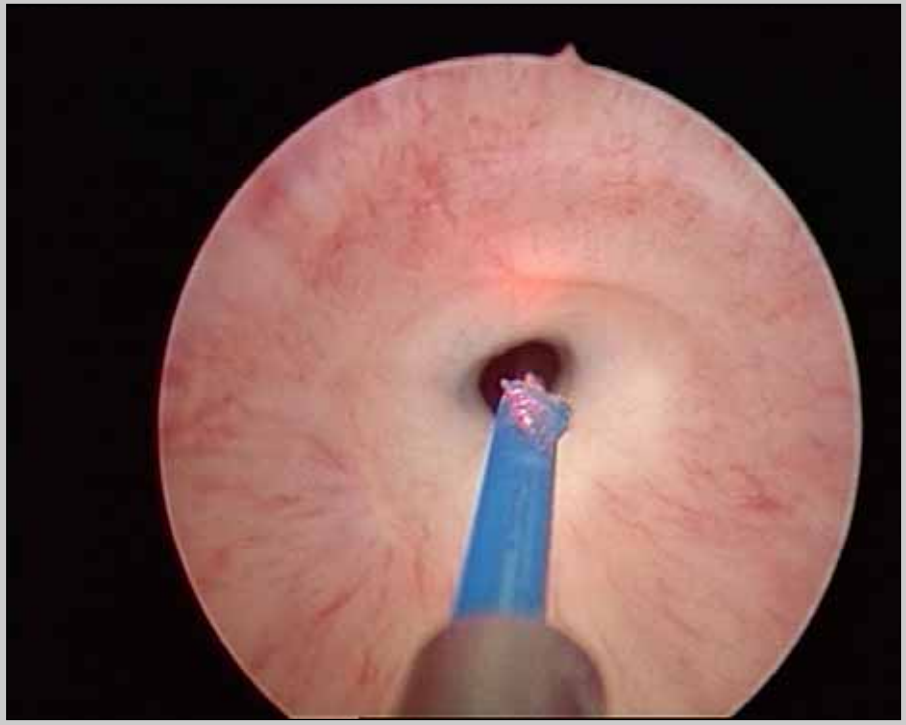

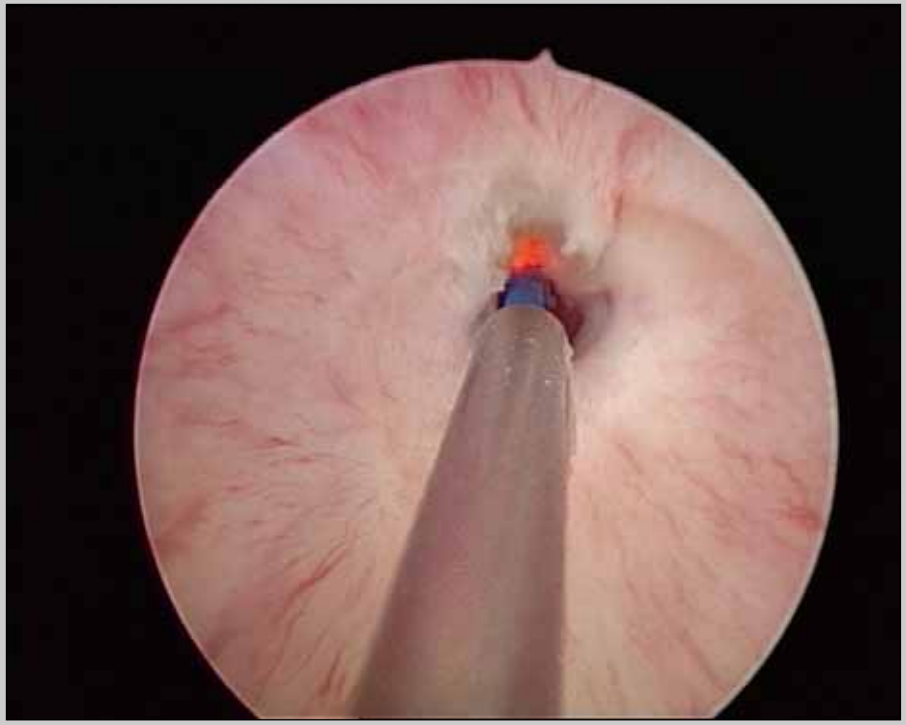

Holmium laser urethrotomy

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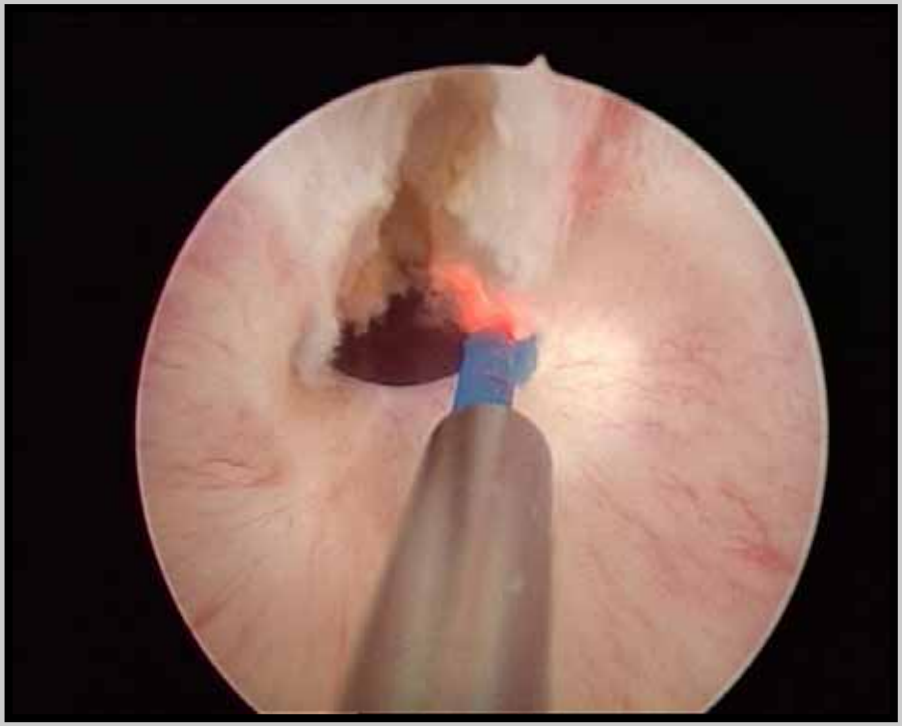

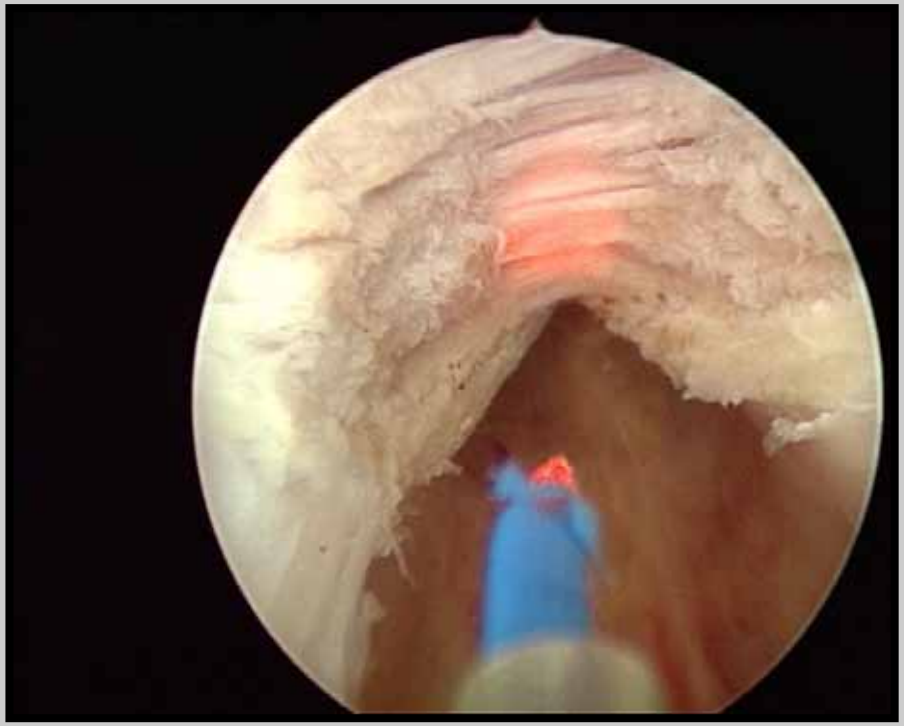

Holmium laser urethrotomy

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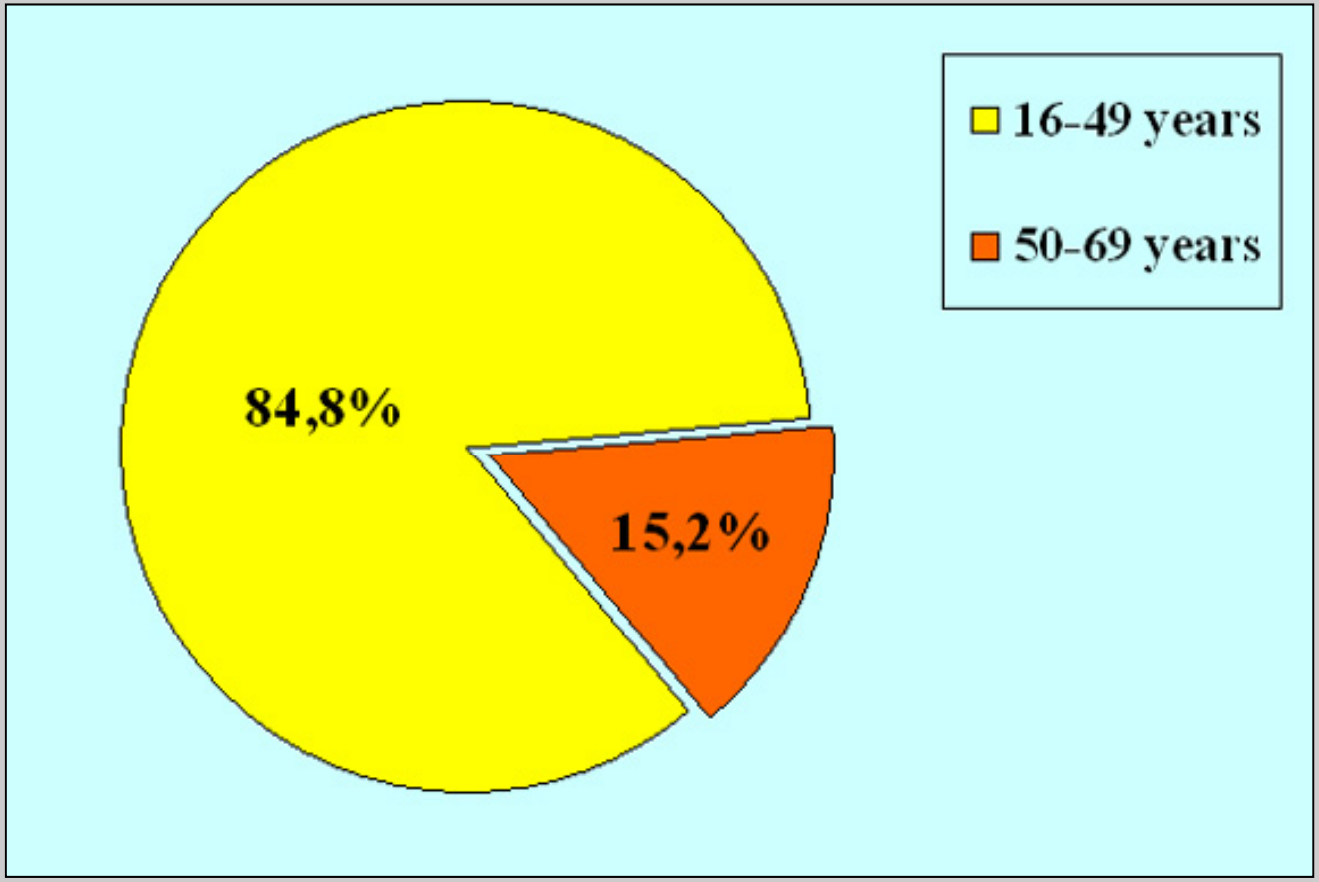
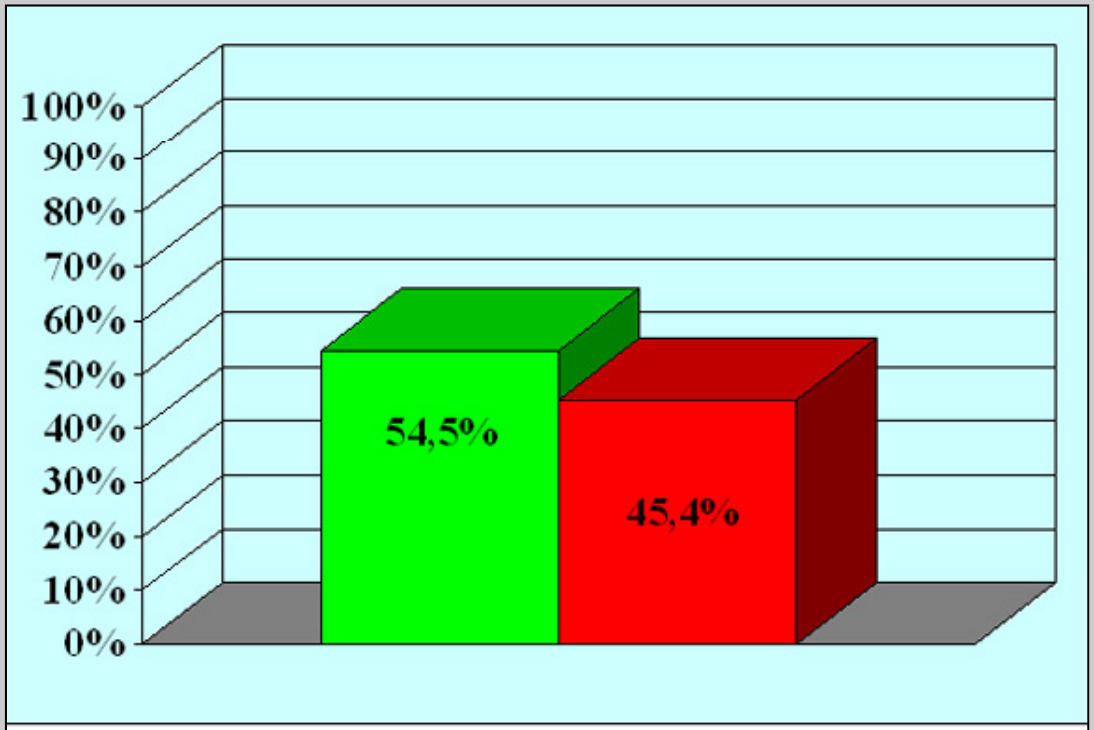
Results on 33 patients who underwent holmium laser urethrotomy for traumatic posterior urethral strictures



Age

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

Results on 33 patients who underwent holmium laser urethrotomy



success	18 (54.5%)
failure	15 (45.5%)

Result after one urethrotomy

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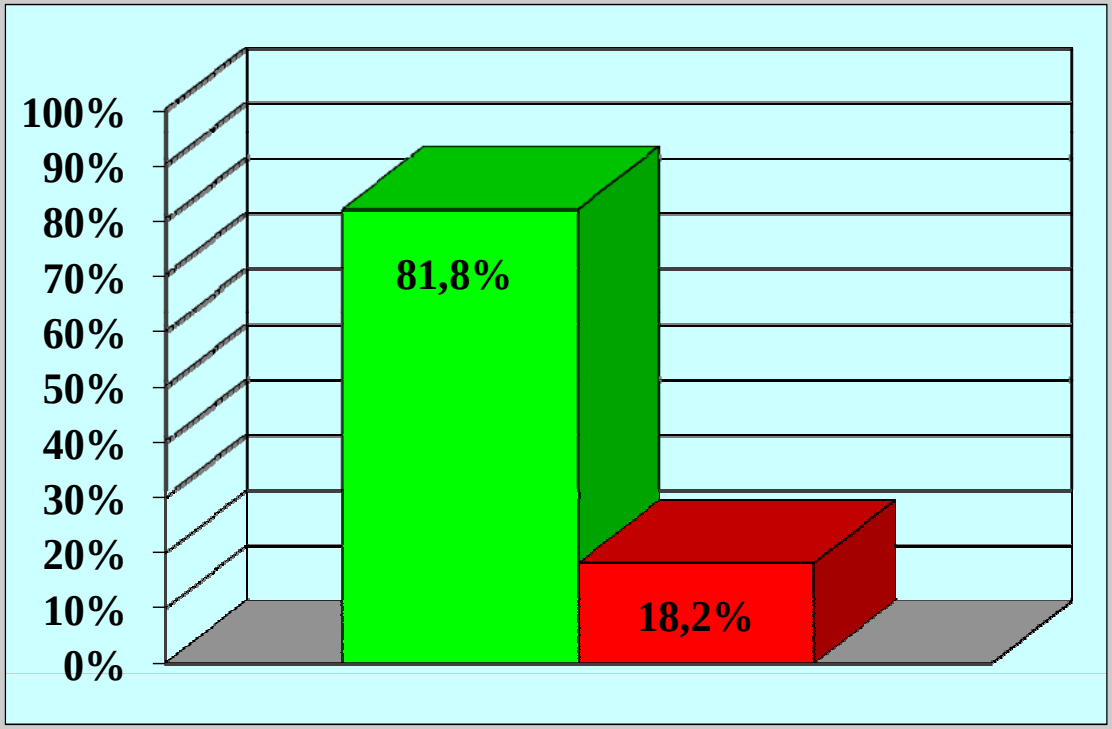
Results on 33 patients who underwent holmium laser urethrotomy



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

Result after two urethrotomies

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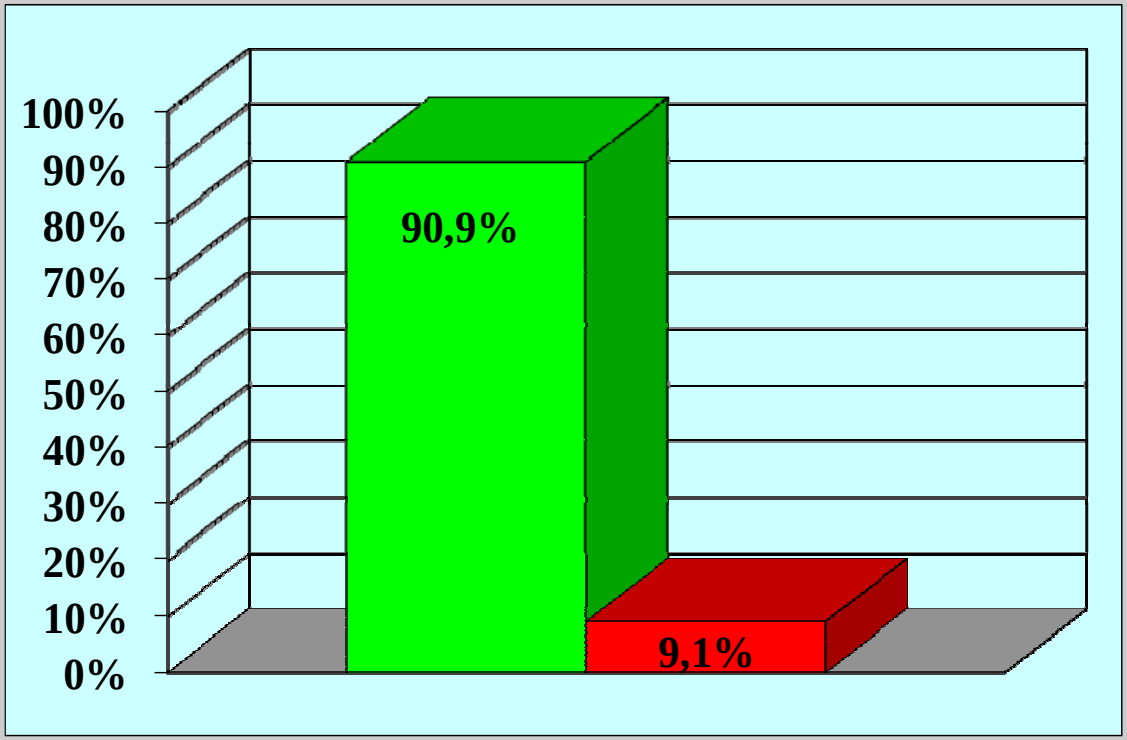
Results on 33 patients who underwent holmium laser urethrotomy



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

Result after three urethrotomies

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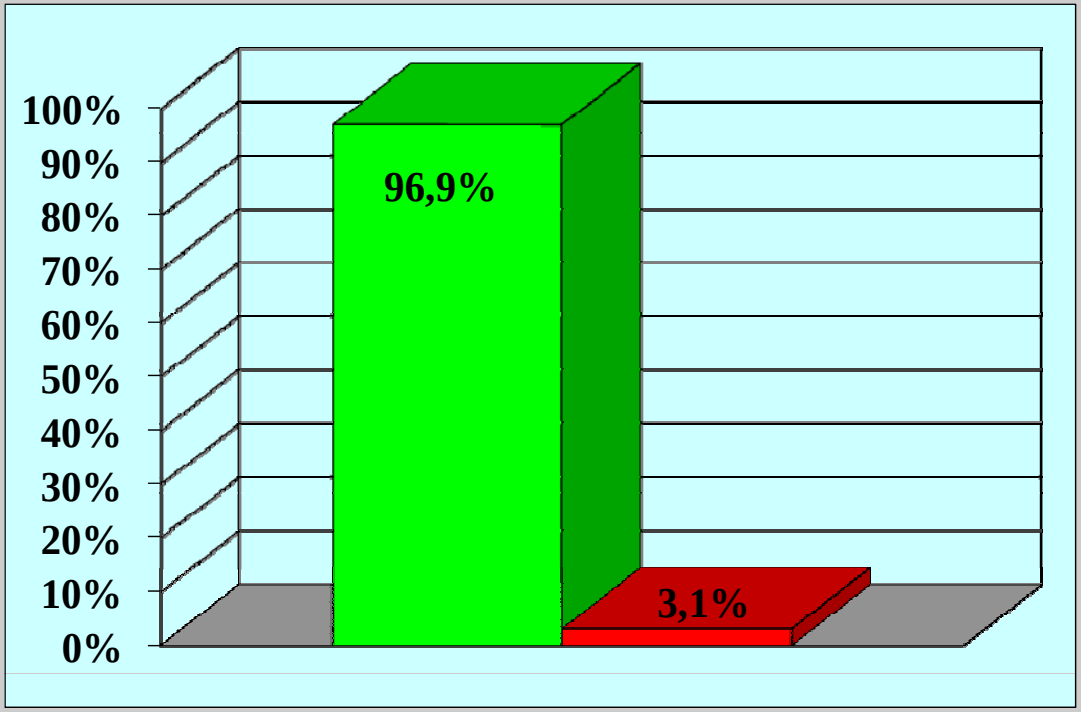
Results on 33 patients who underwent holmium laser urethrotomy



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

Result after five urethrotomies

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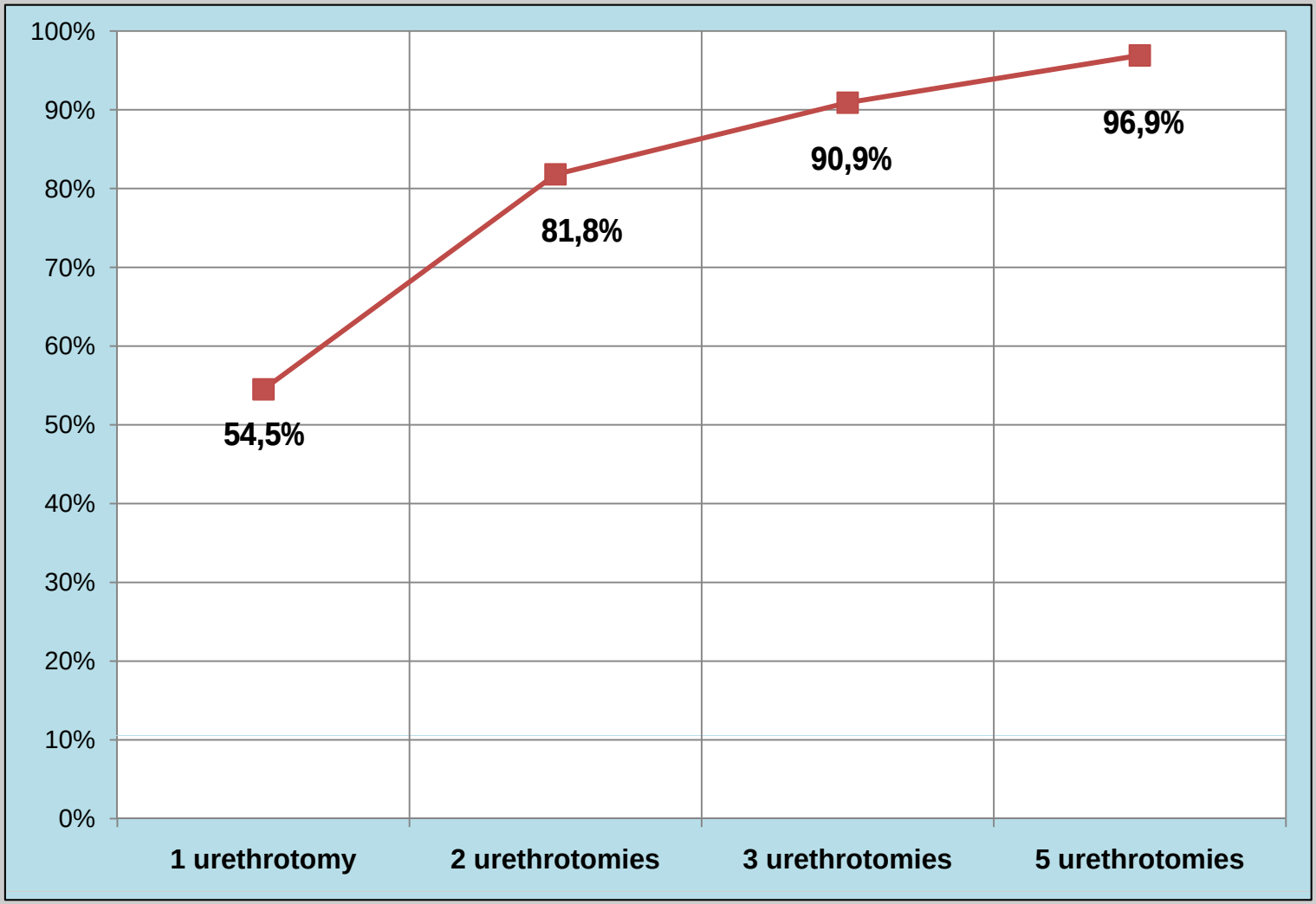
Results on 33 patients who underwent holmium laser urethrotomy



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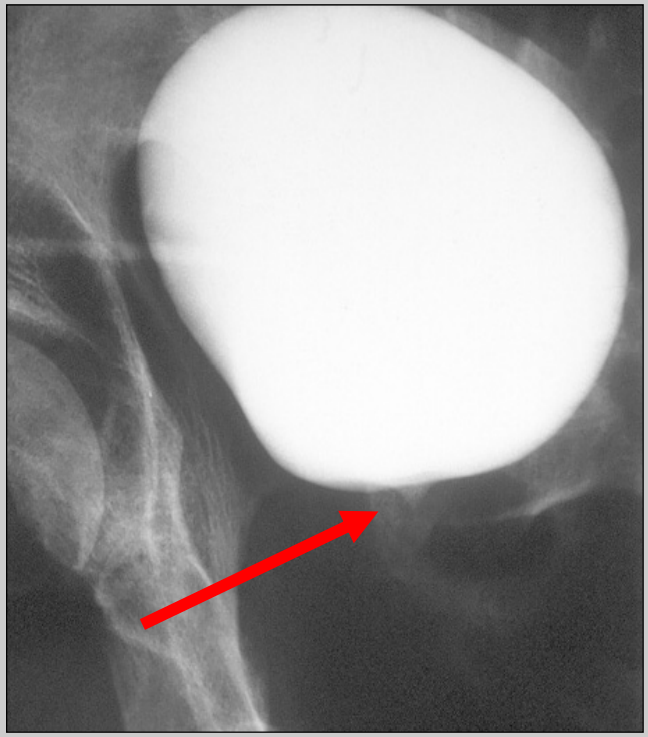
The use of holmium laser urethrotomy may represents rationale option in patients with posterior traumatic No-obliterative short urethral stricture

No damage to the erectile neuro-vascular tissue

Patient should be fully informed that only 54.5% of patients require only one urethrotomy

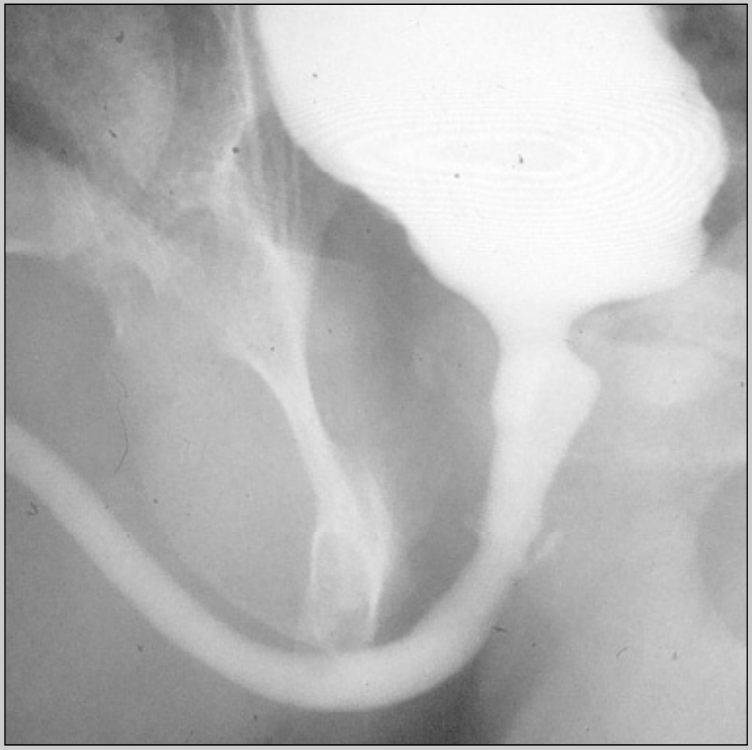
45.5% of patients require two or more urethrotomies to obtain a stable result over time

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



Preserve the residual sphincter mechanism at the bladder neck

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



Realignment of the injured urethra and restore the urethral lumen

Register now !!!

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