

Center for Reconstructive Urethral Surgery



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Annual Congress

Mexican Urological Society

Monterrey - México

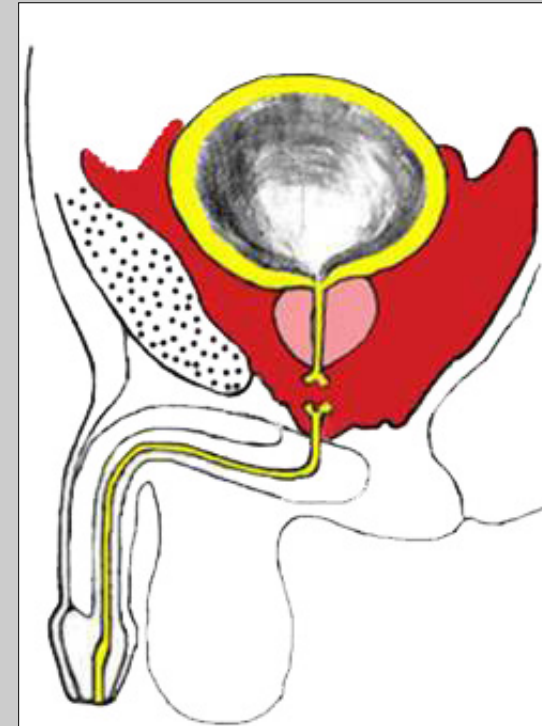
November 17 – 22, 2009

Management of pelvic trauma and posterior urethral disruption

Traumatic posterior urethral disruption



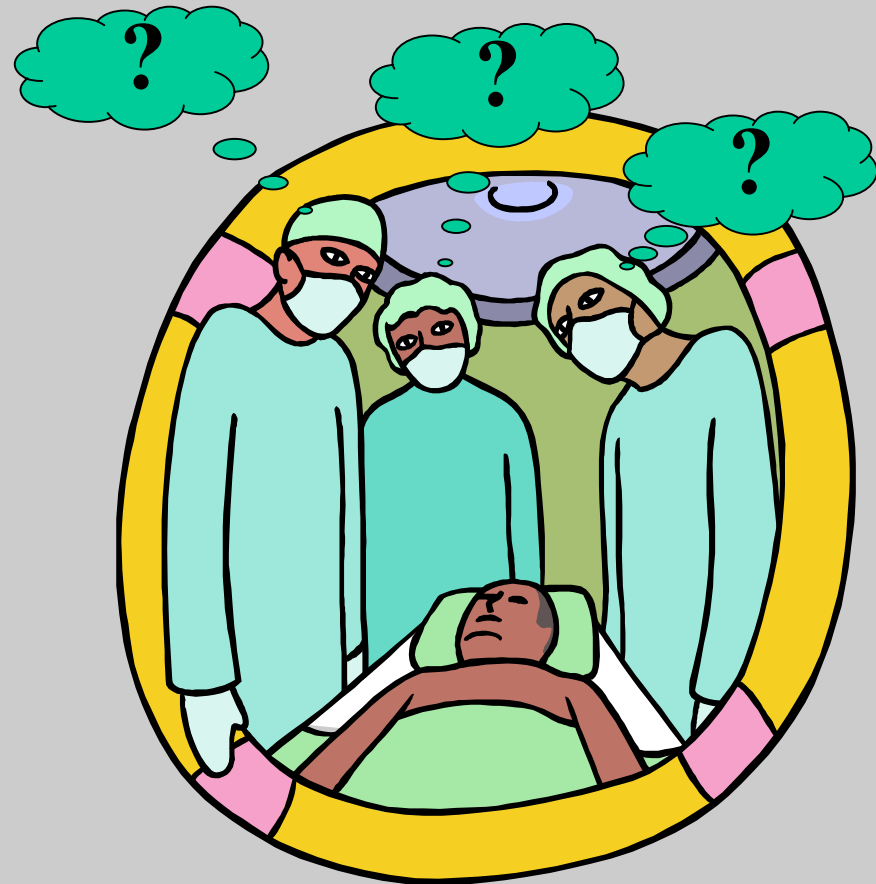
PFUDD



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

Emergency treatment of posterior urethral trauma

suprapubic urinary diversion
immediate

endoscopic urethral realignment
7 – 15 days following trauma

delayed urethroplasty
4 months following trauma

Initial management of patient in the emergency room



Young urologist

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

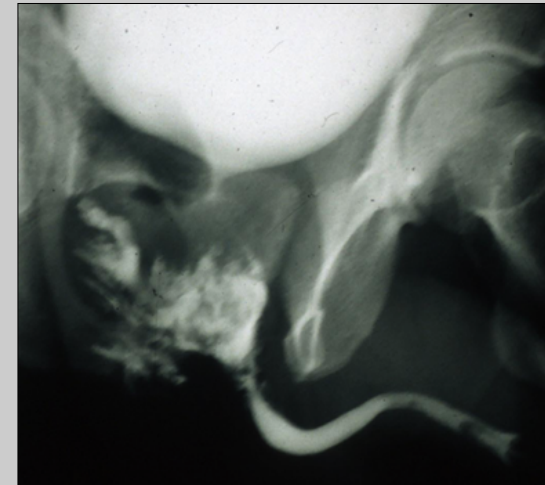
Preserve the residual sphincter mechanism at the bladder neck

Avoid jeopardizing sexual function residual to the trauma

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 !**

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

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

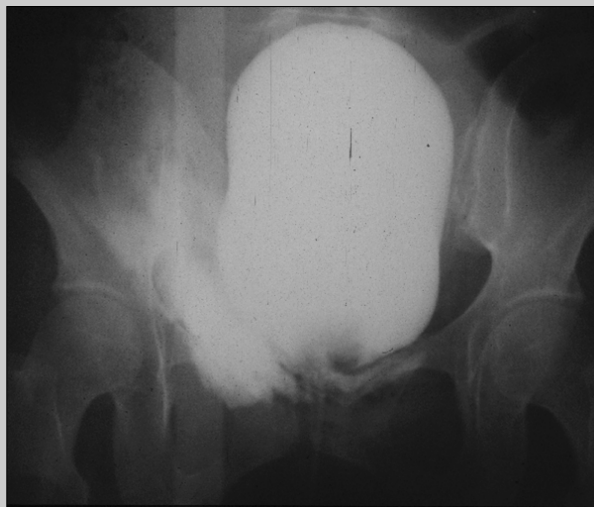
Associated lesions

Site of lesions

Type of lesions

Imaging techniques

Associated lesions



bladder

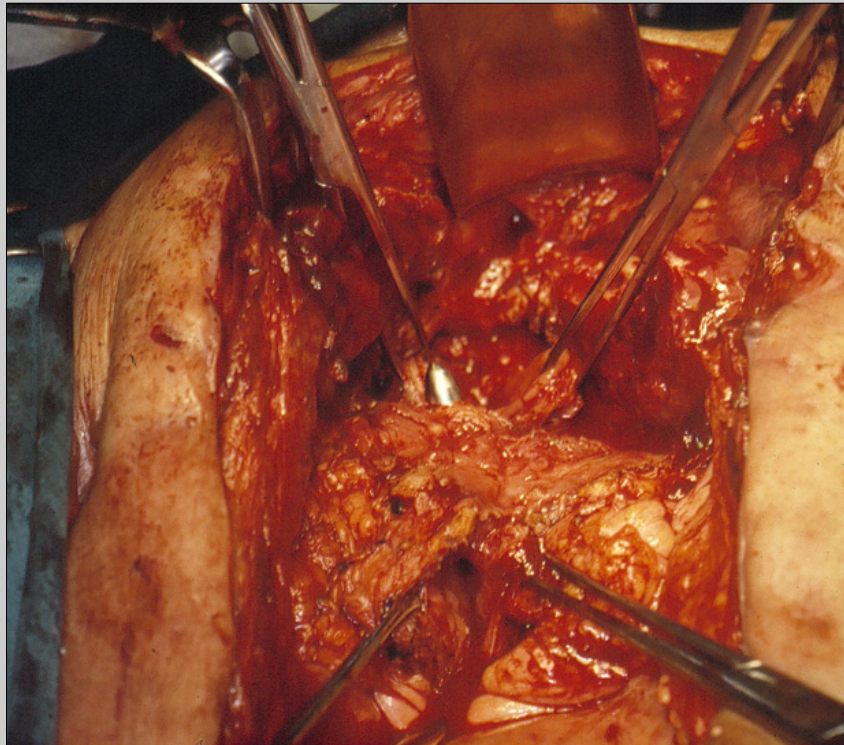


bladder neck



rectum

Immediate management of urethral trauma with associated lesions



- bladder rupture
- bladder neck lesions
- rectal tear



Immediate surgical exploration

Imaging techniques

Site of lesion

membranous



adult

prostatic



children

Imaging techniques

Type of urethral lesion



stretched



partial rupture



complete rupture

Question for the Audience



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Wait and see

Retrograde urethrography

Urethroscopy

Suprapubic cystostomy

Question for the Audience



?

Wait and see

Urethroscopy

Catheter

Suprapubic cystostomy

Question for the Audience



?

Urethroscopy

Catheter

Suprapubic cystostomy

Immediate open repair

Question for the Audience

?



Suprapubic cystostomy



Immediate endoscopic realignment

Immediate open repair

Question for the Audience



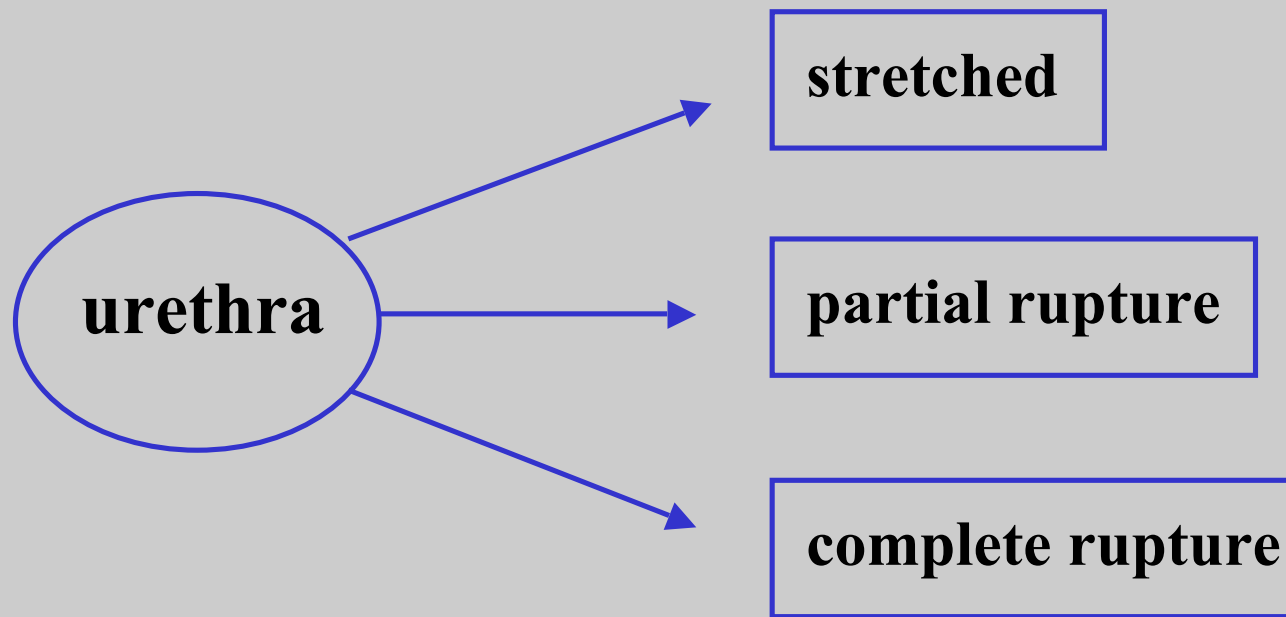
?

Suprapubic cystostomy

Immediate endoscopic realignment

Immediate open repair

Immediate management of posterior urethral trauma without associated lesions



**Percutaneous suprapubic cystostomy
under ultrasonographic guidance**

Why ?

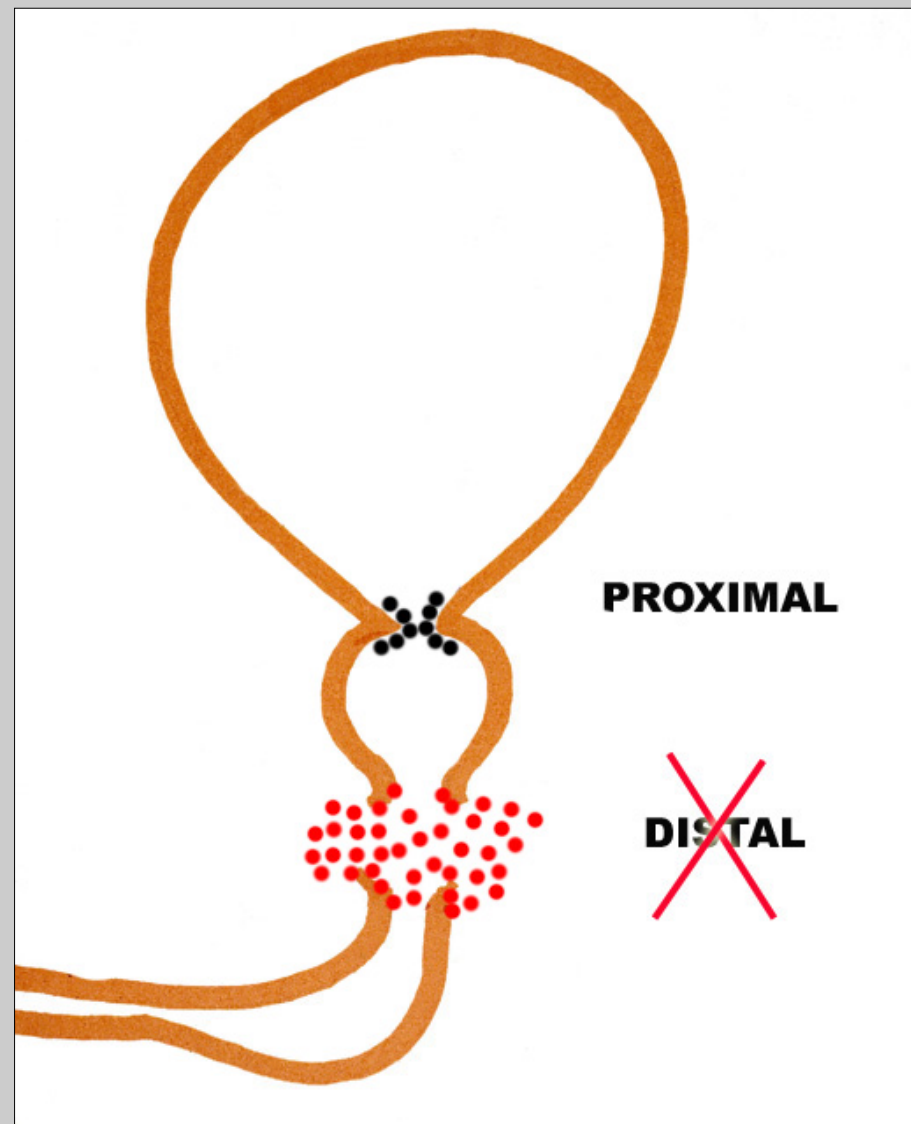
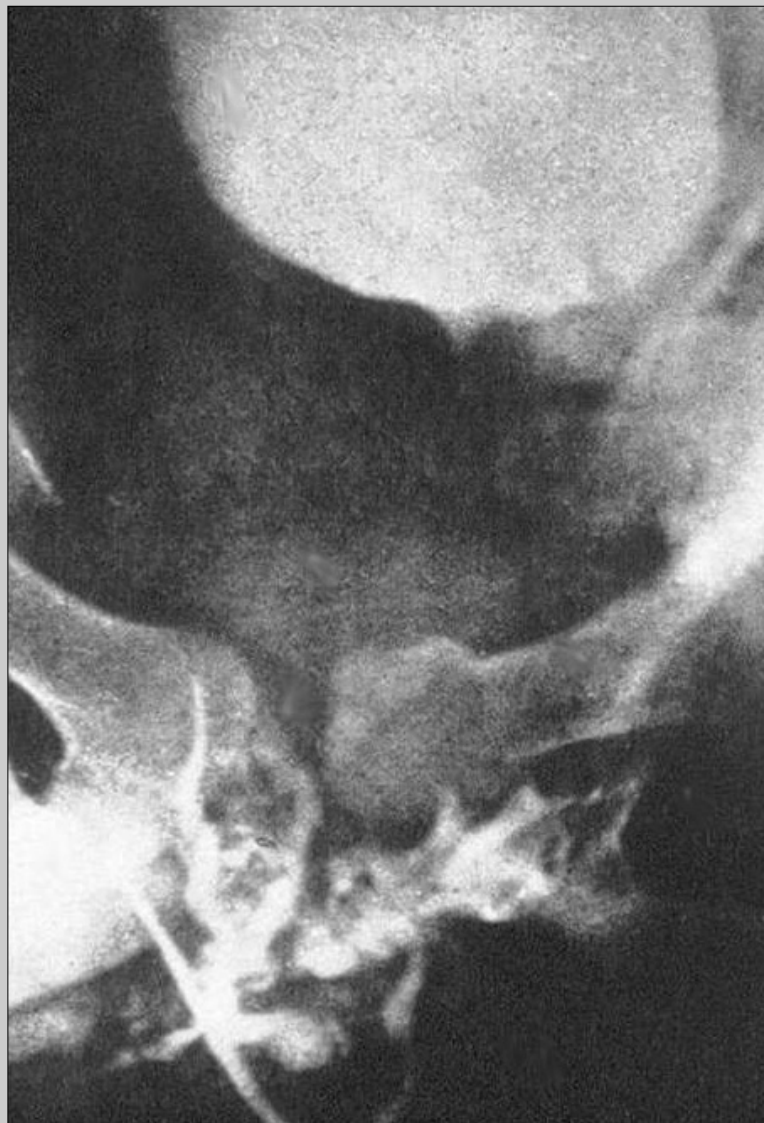
Goal of the initial evaluation and management of the patient with PFUDD

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

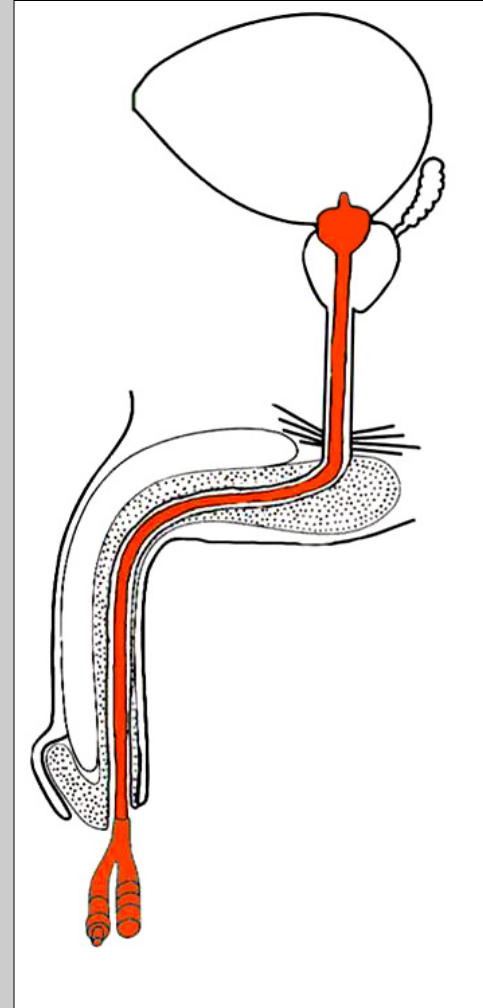
Divert urine away from the site of injury

Preserve the residual sphincter mechanism at the bladder neck

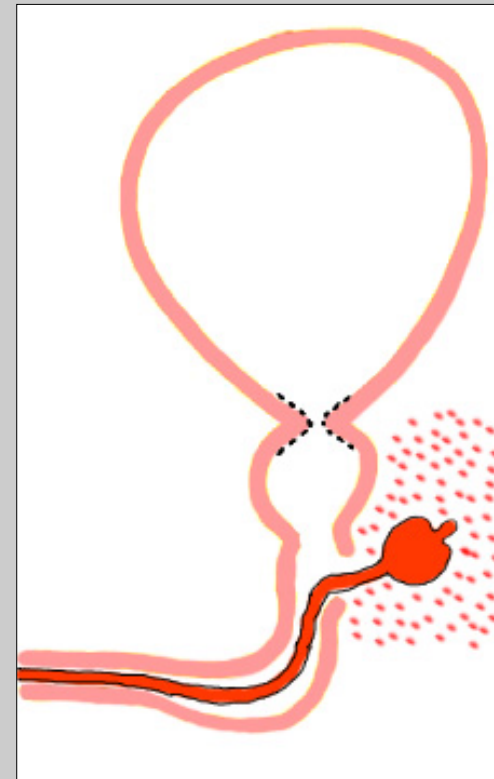
Avoid jeopardizing sexual function residual to the trauma



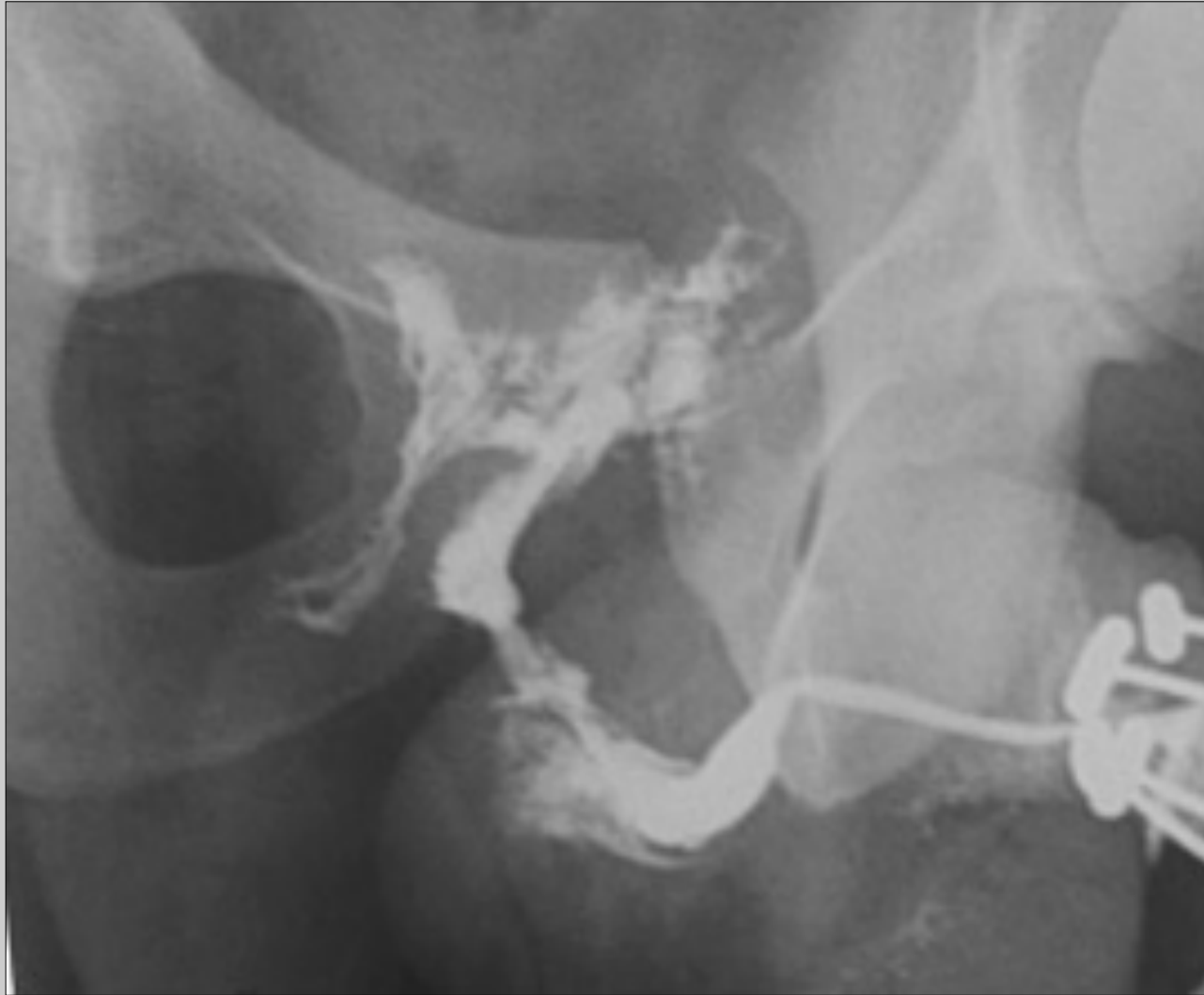
Urethra: stretched

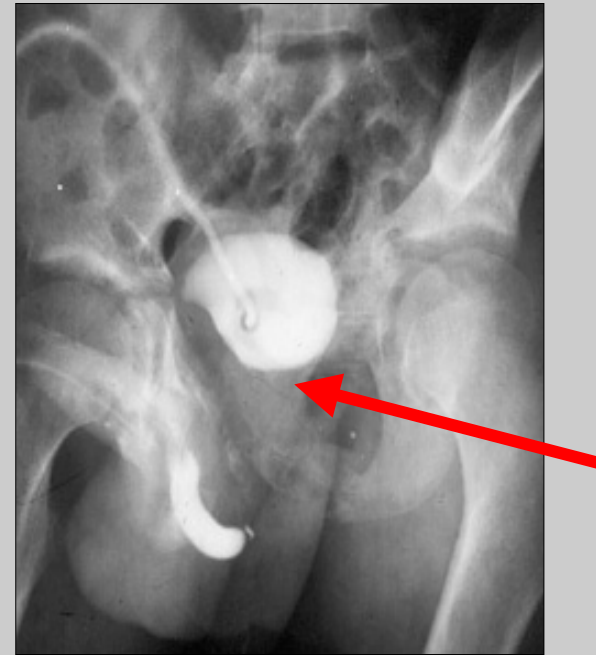
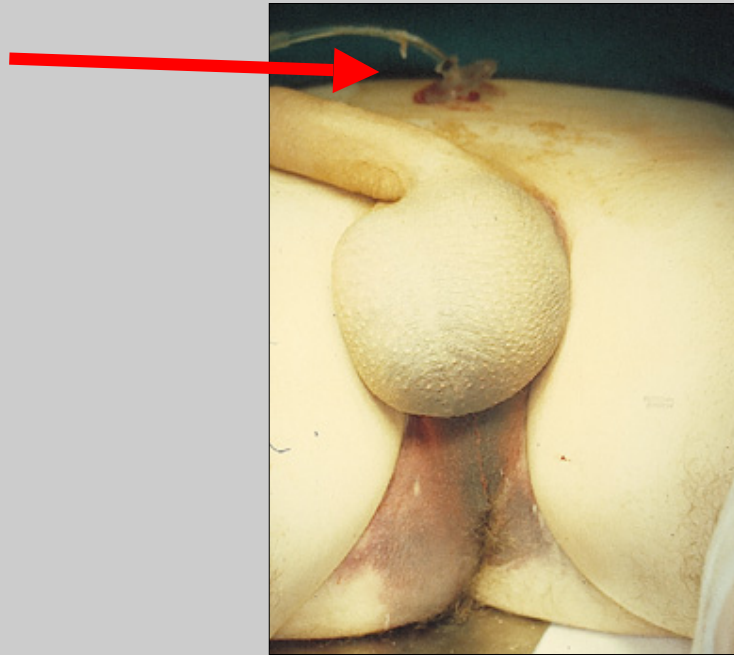


Urethra: partial rupture



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



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Old urologist

Endoscopic urethral realignment

appropriate operating room

appropriate instruments

appropriate patient

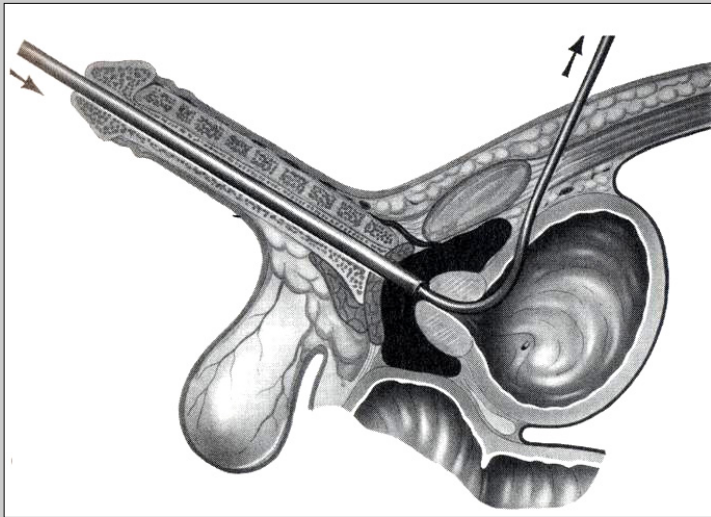
appropriate surgeon

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



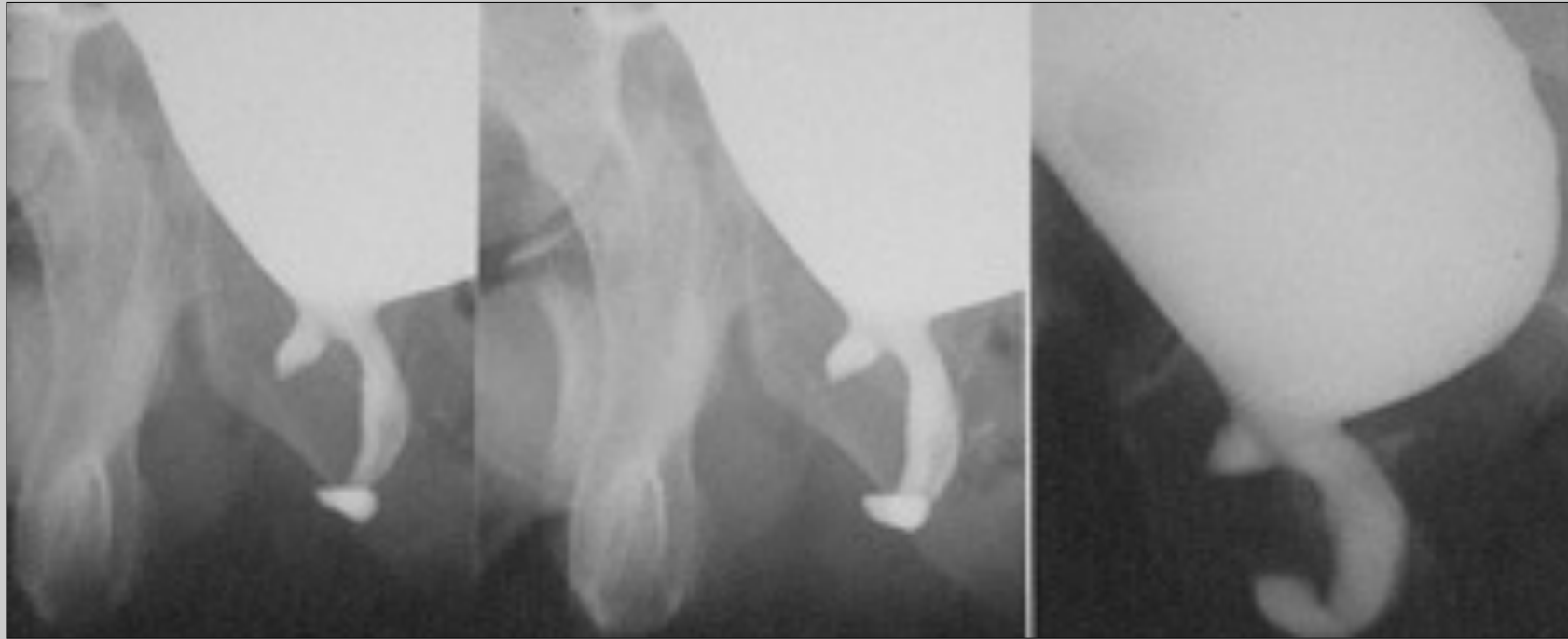
Immediate or Delayed ?

Question for the Audience

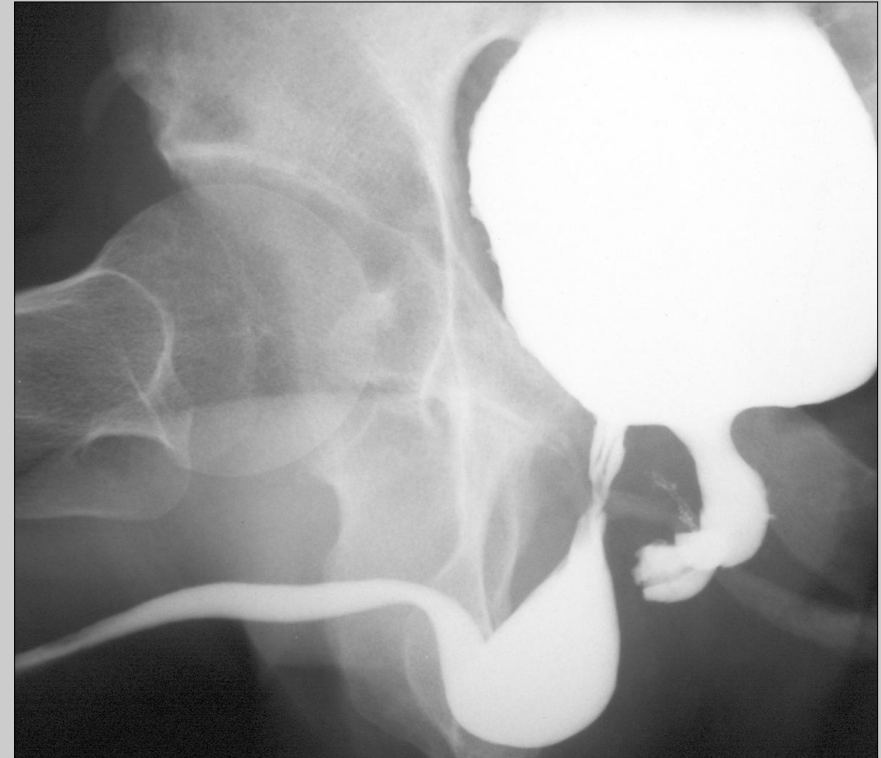
Endoscopic urethral realignment



Simple or Complex procedure ?



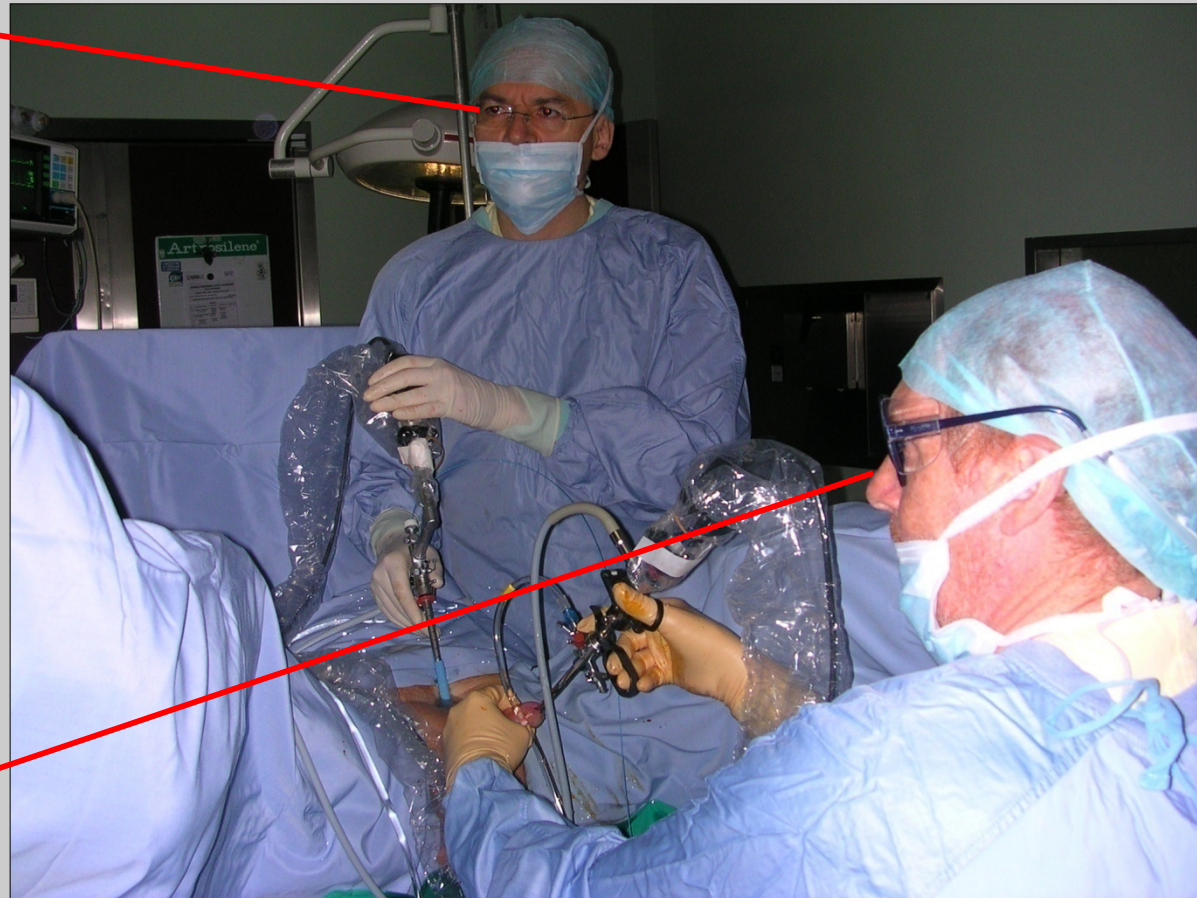
Four-hour **emergency (?) urethral realignment **in the**
plaster-cast room (?)**



Five-hour **emergency (?)** urethral realignment



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



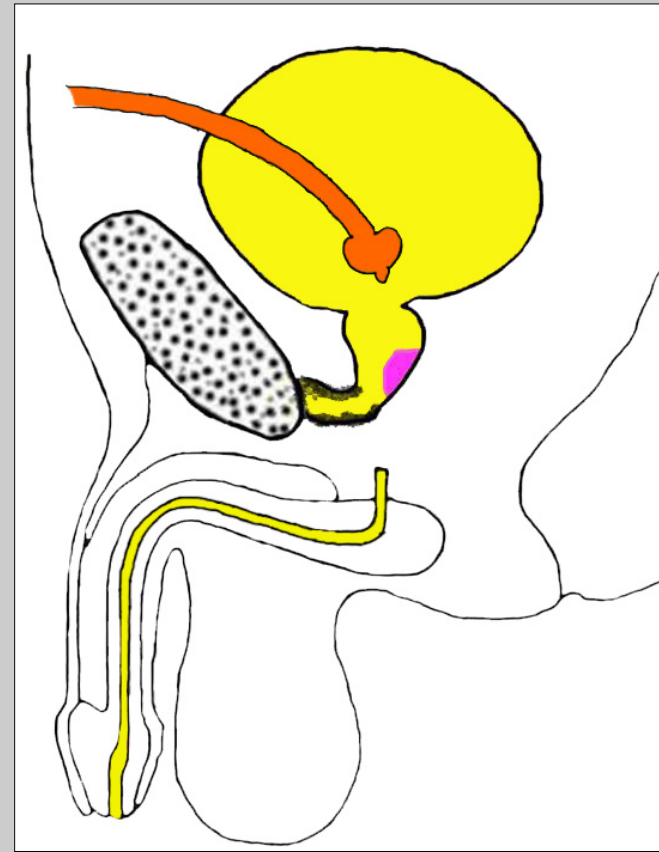
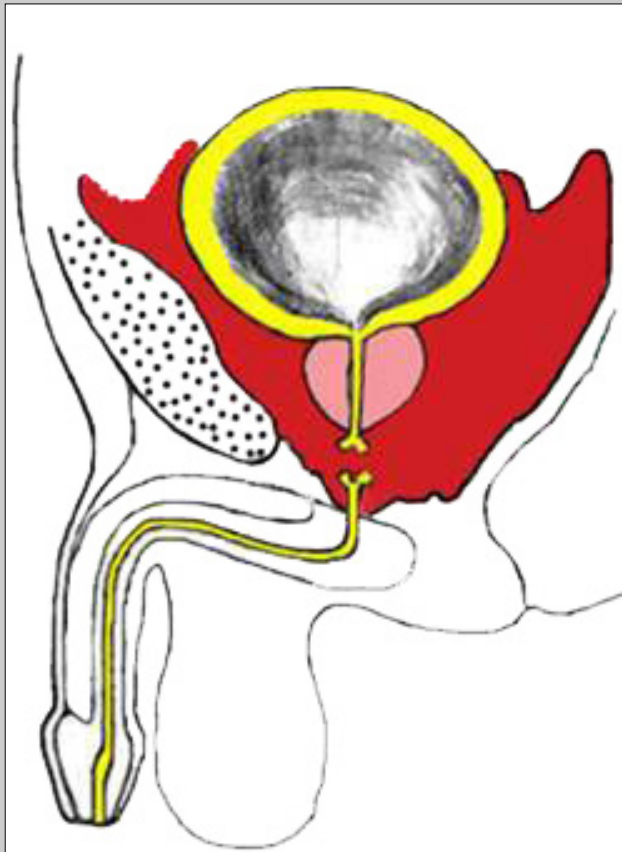
Endoscopic urethral realignment

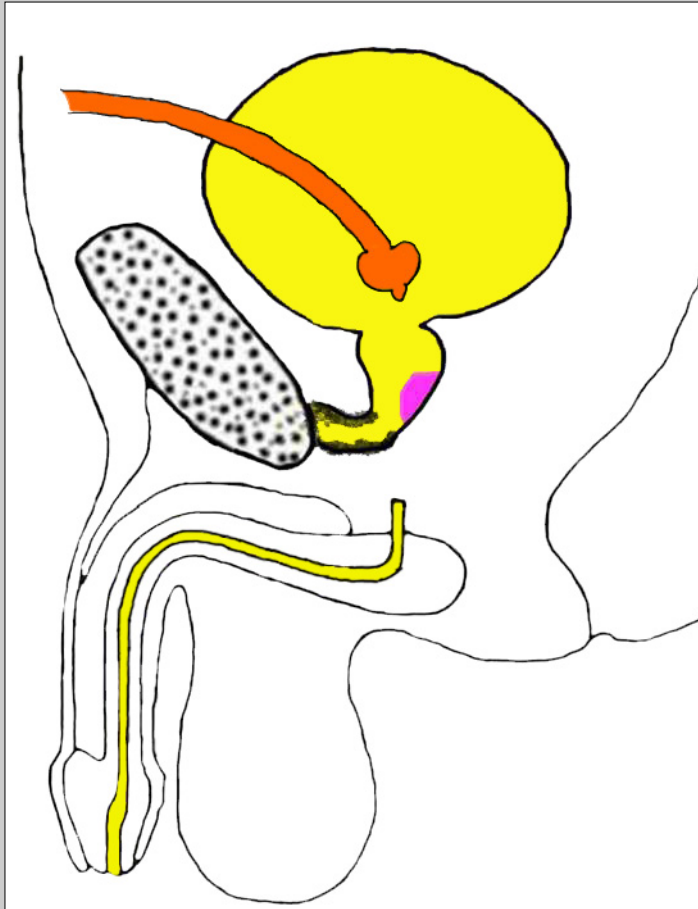
7 – 15 days following trauma

Why ?

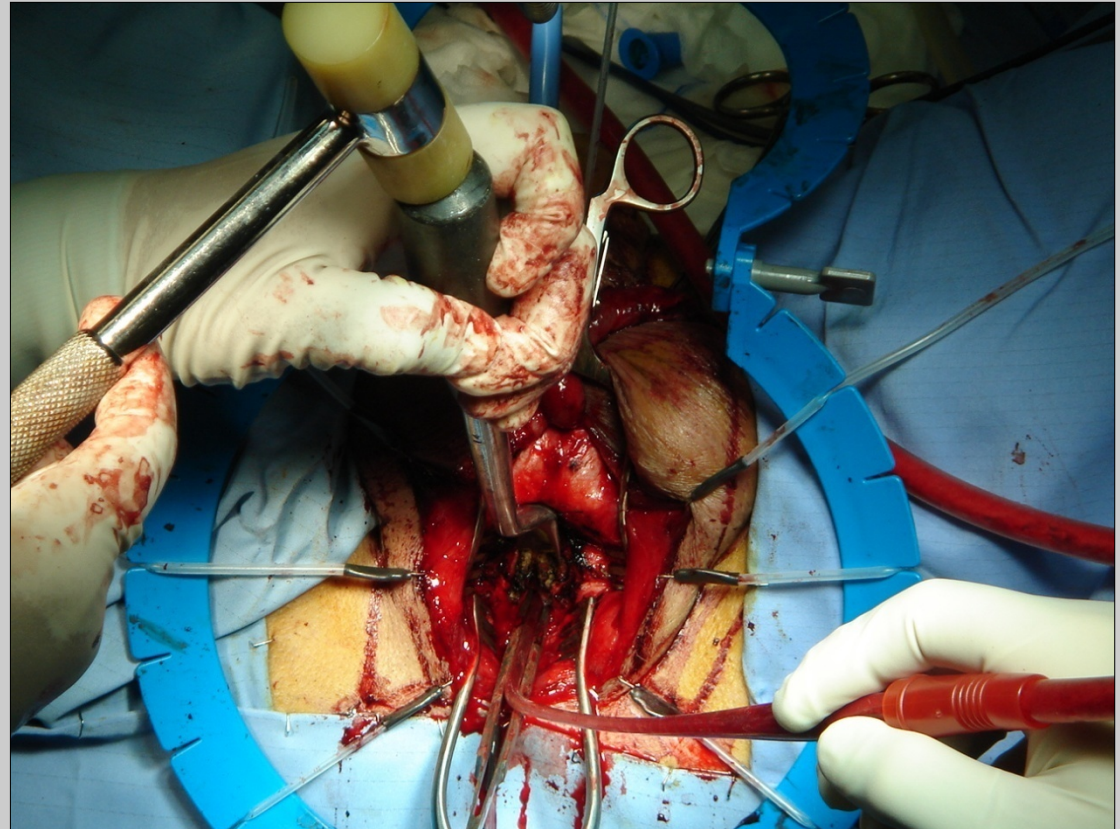
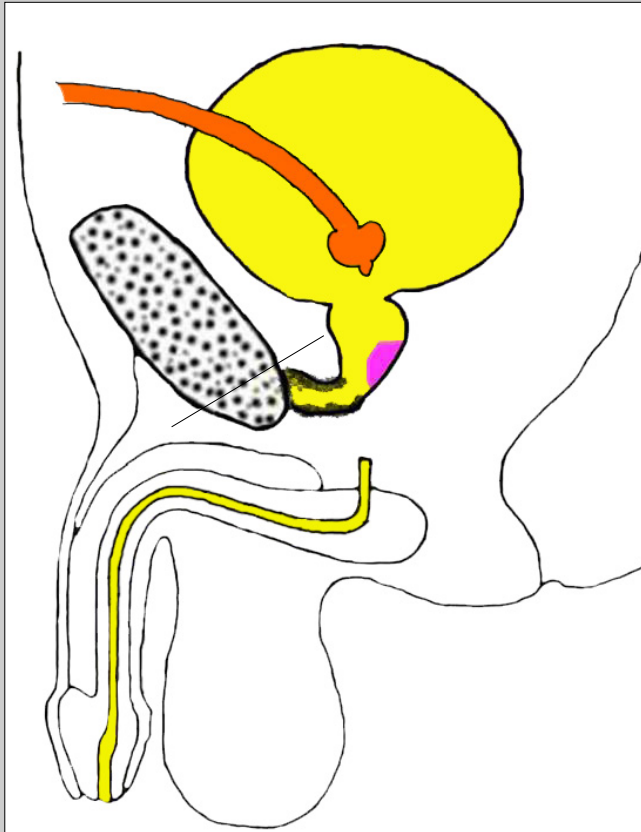
NO

Endoscopic urethral realignment

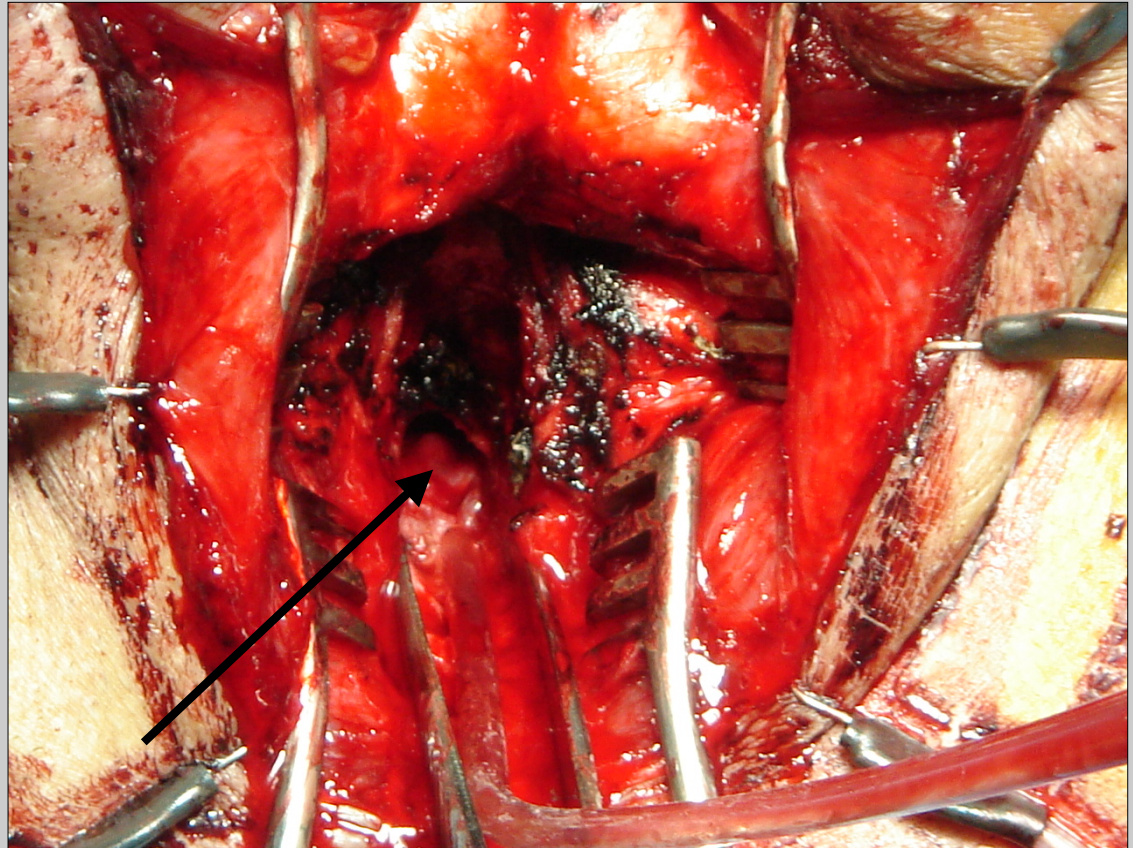
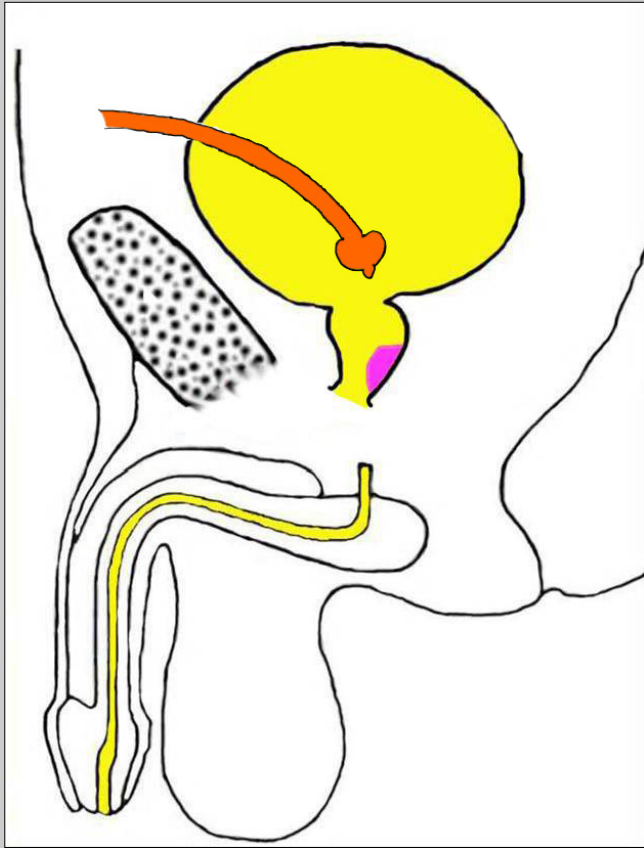




Complex posterior urethral stricture



Perineal pubectomy



Perineal pubectomy

Question for the Audience

Complex posterior urethral stricture



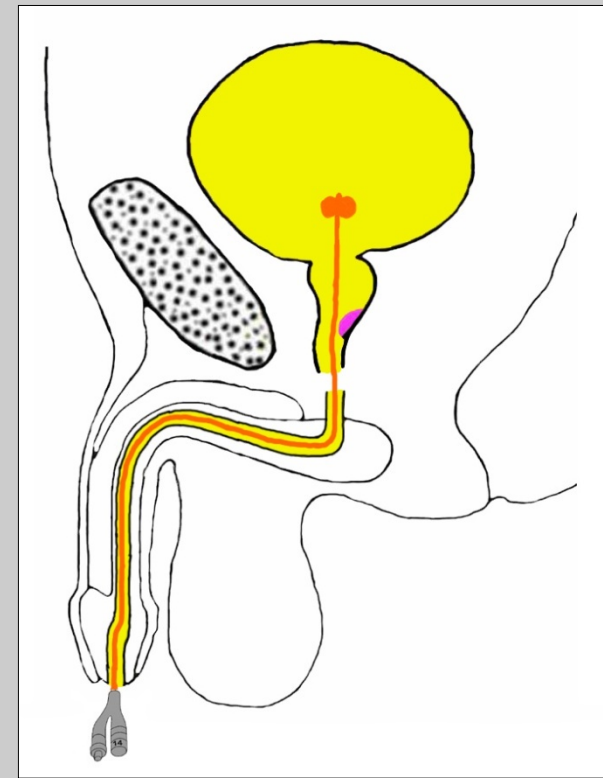
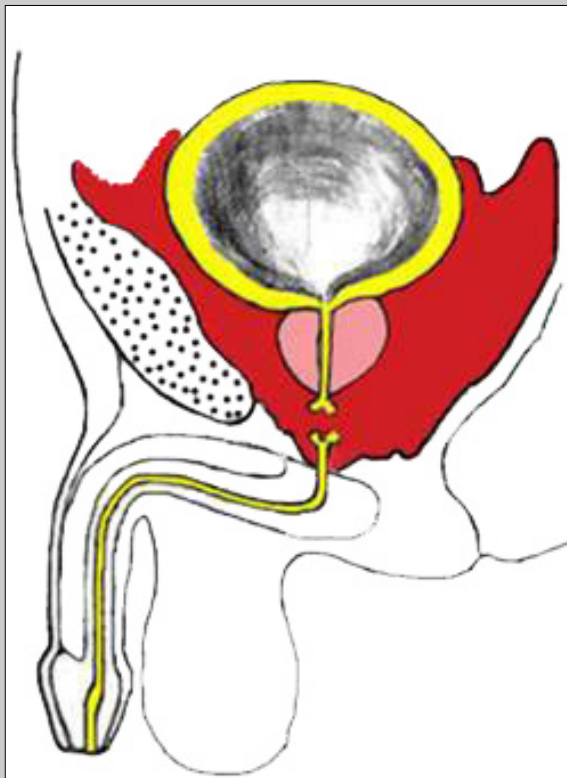
Send the patient to the Referral Center

or

perform the urethroplasty myself ?

YES

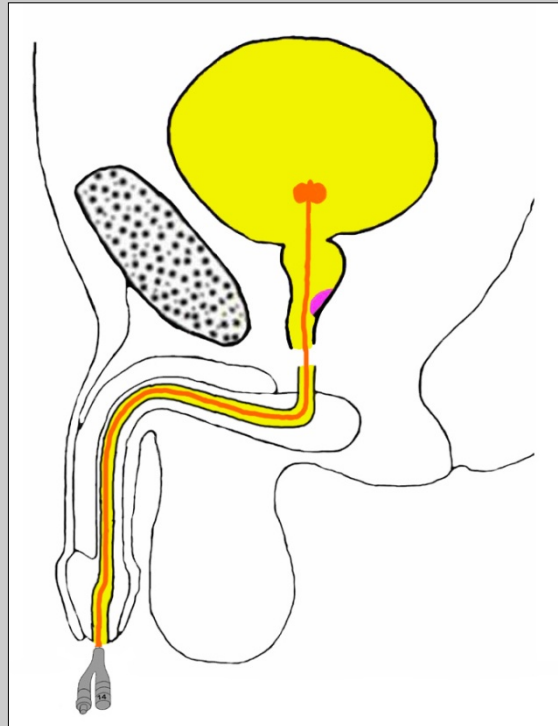
Endoscopic urethral realignment



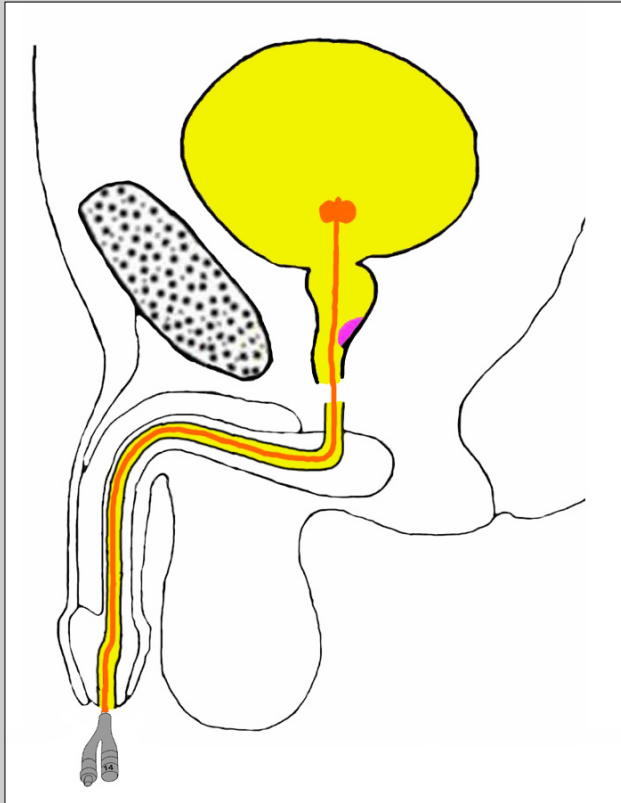
Question for the Audience

Endoscopic urethral realignment prevent stricture development ?

YES



NO



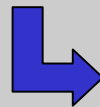
Simple posterior urethral stricture

Question for the Audience

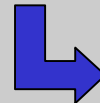
Simple posterior urethral stricture



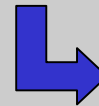
Send the patient to the Referral Center



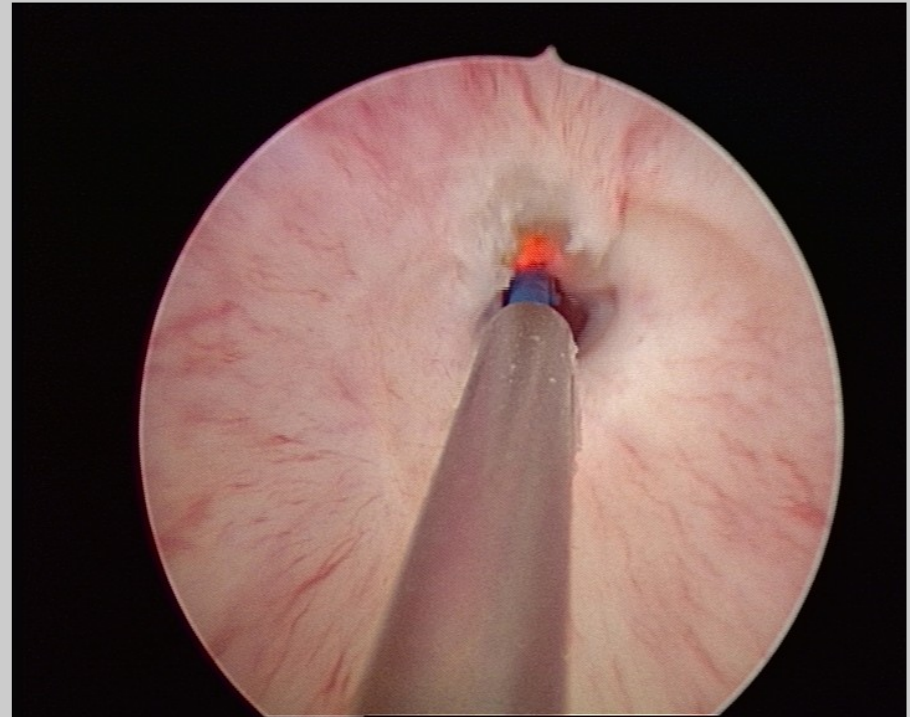
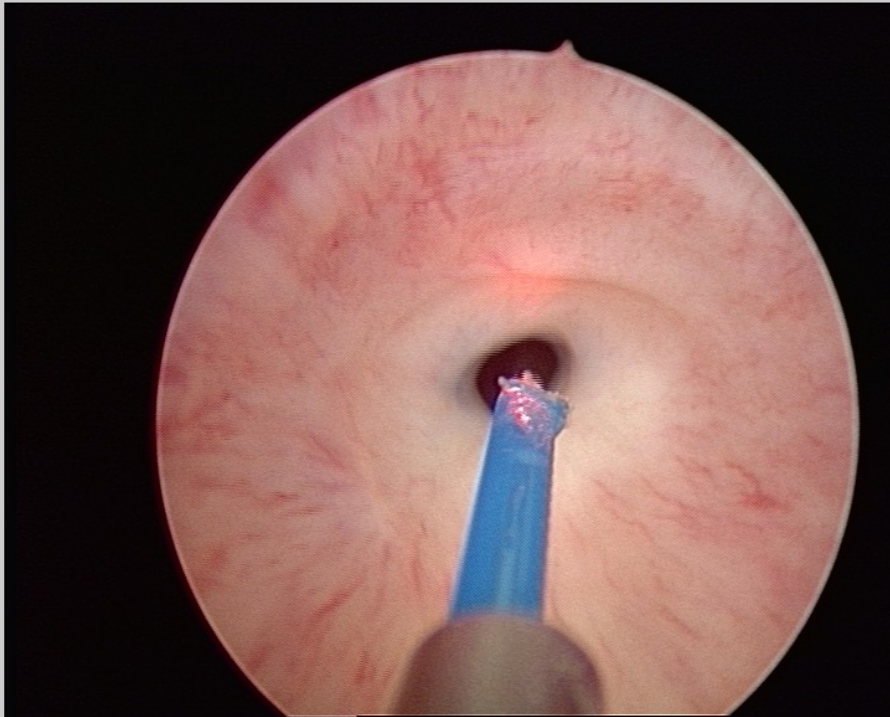
Urethrotomy



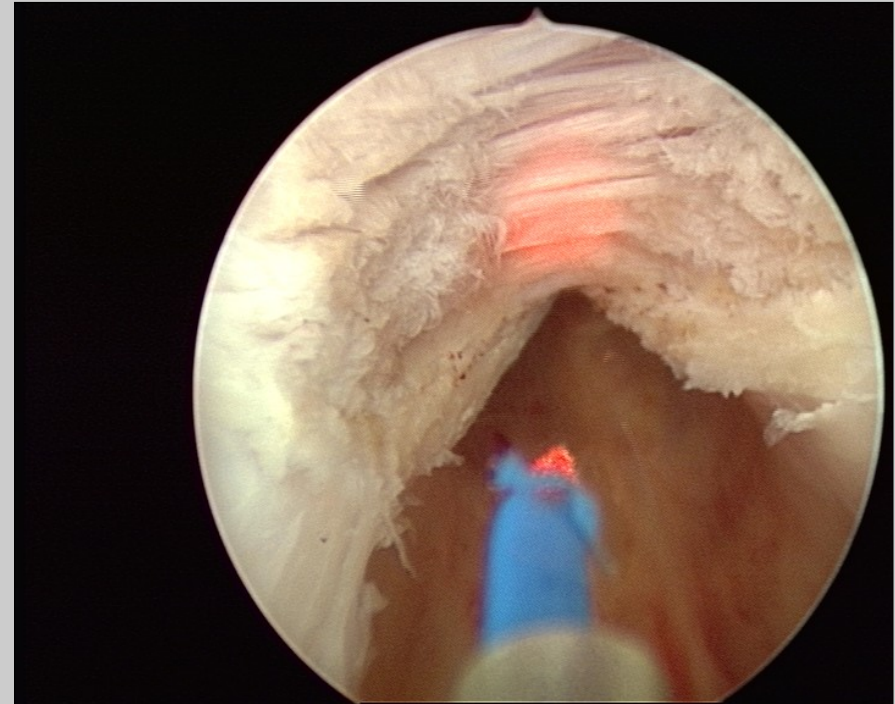
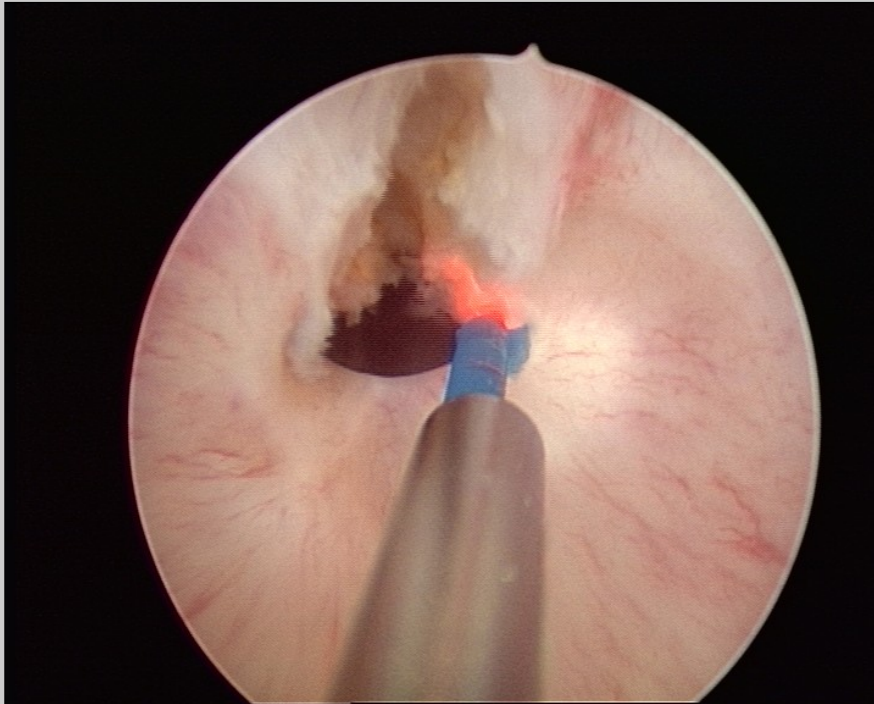
Stent



Urethoplasty

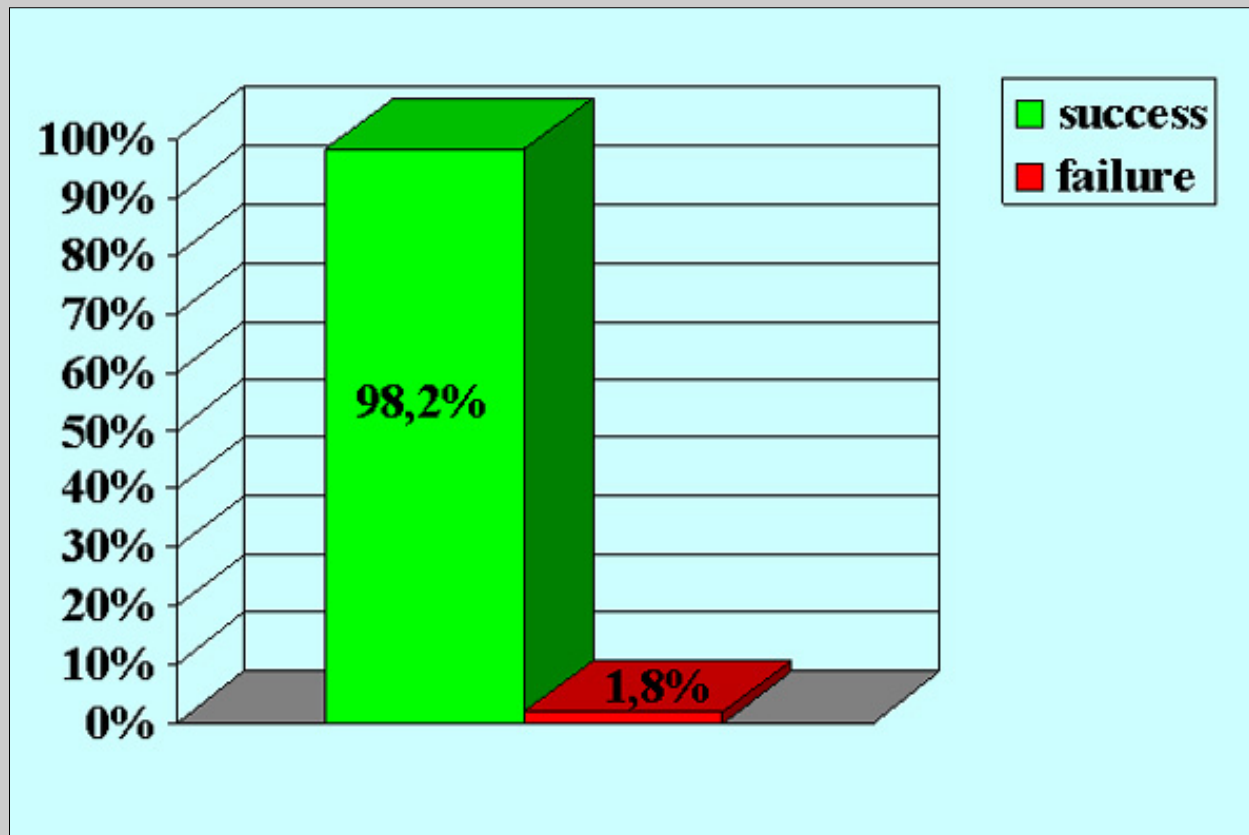


Holmium laser urethrotomy



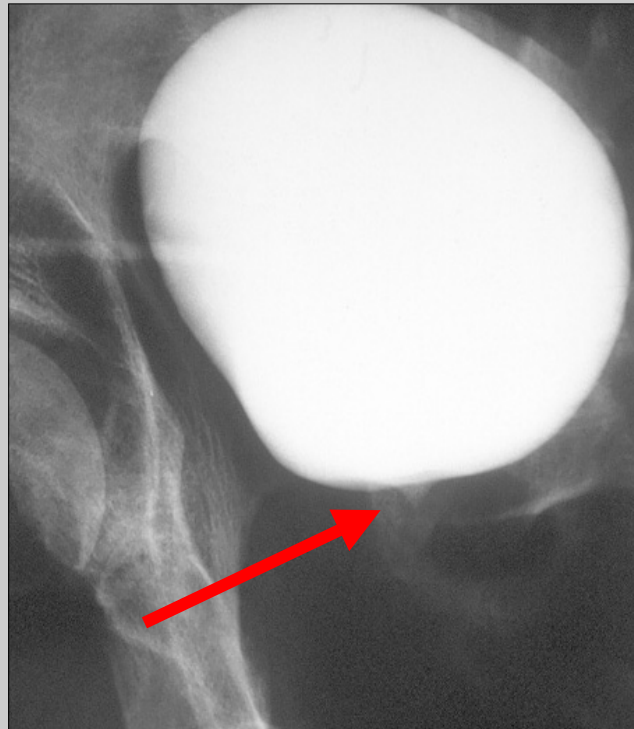
Holmium laser urethrotomy

Results on 25 patients who underwent holmium laser urethrotomy for posterior urethral strictures following pelvic trauma



Mean follow-up 55 months (12 – 65 months)

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

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



Avoid jeopardizing sexual function residual to the trauma

www.urethralcenter.it



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

Thank you !