

# Guido Barbagli

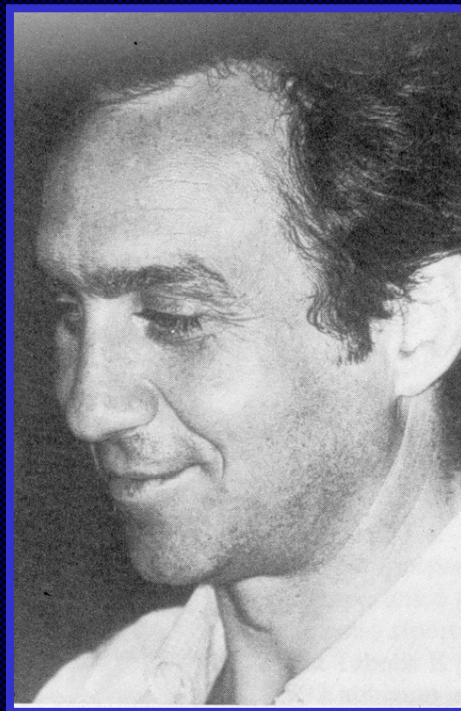
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**Dedicated to Ruggero Lenzi, teacher and  
friend. His passing was a great personal as well as  
professional loss**



**Prof. Ruggero Lenzi**  
**Department of Urology - University of Florence**



# **Initial evaluation and management of the patient with pelvic fracture urethral distraction defects (PFUDD)**



# 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 realignment

**7 – 15 days following trauma**

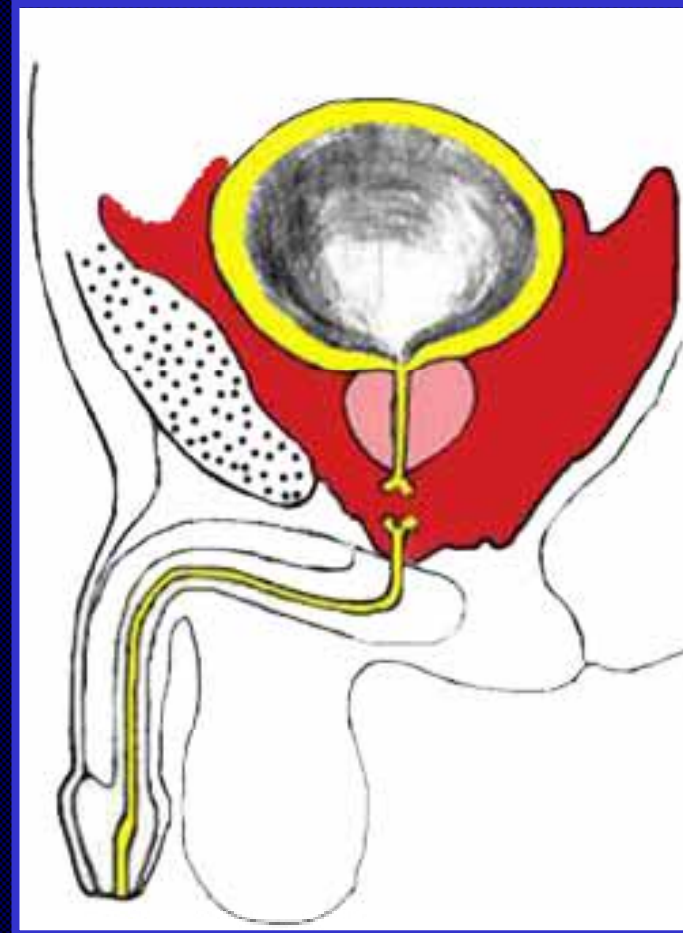
- delayed urethroplasty

**4 months following trauma**





# Pelvic fracture urethral distraction defects (PFUDD)



# Pelvic fracture urethral distraction defects (PFUDD)

- Road traffic accidents (68 to 84%)
- Falls from heights (6 to 25%)
- Industrial accidents
- Agricultural accidents (farm tractors)



# **Pelvic fracture urethral distraction defects (PFUDD)**

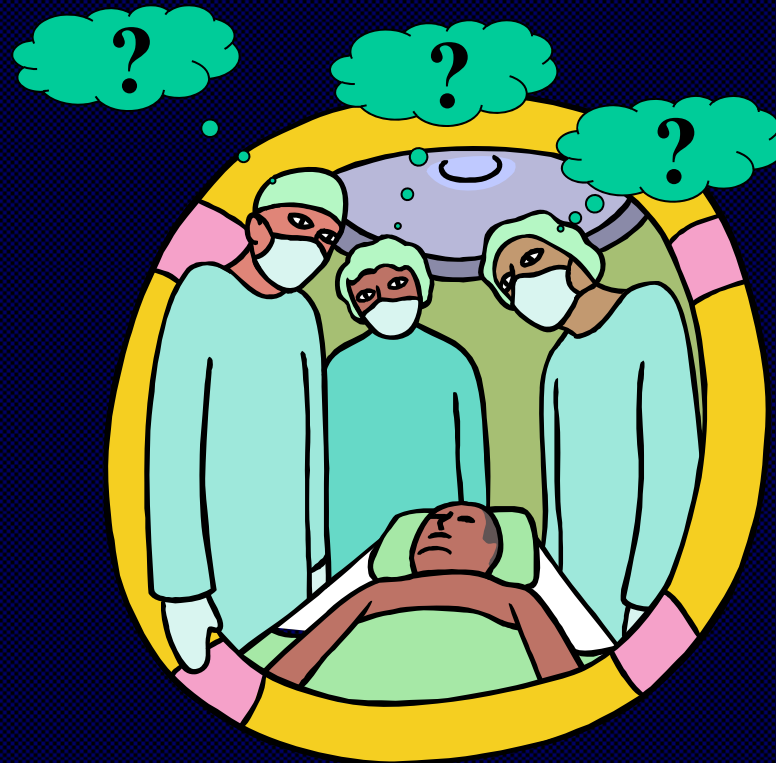
**The association of urethral injuries with pelvic fracture has been quoted as being 3-25% in most studies, and  $\approx 27\%$  are also associated with other intra-abdominal injuries**





# 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



# 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's 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



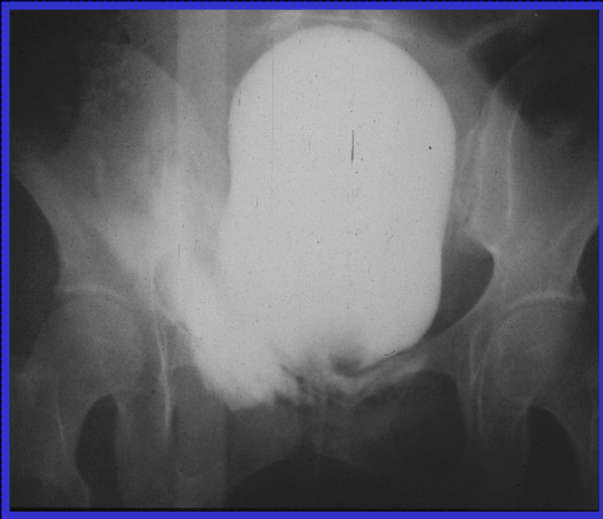
# Imaging techniques

- Associated lesions
- Site of lesions
- Type of lesions



# Imaging techniques

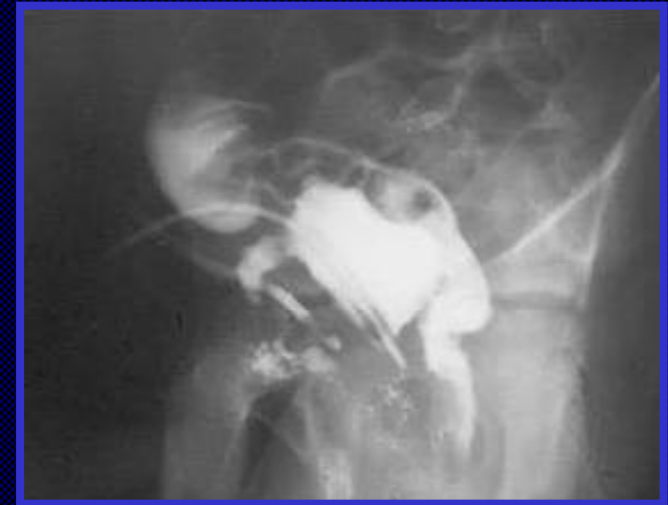
## Associated lesions



**bladder**



**bladder neck**

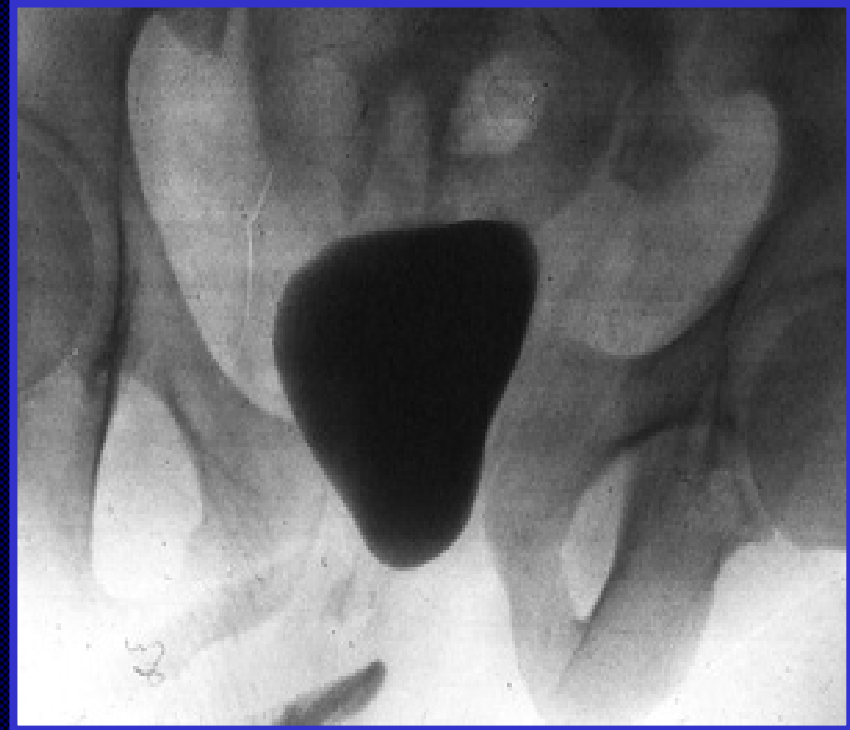
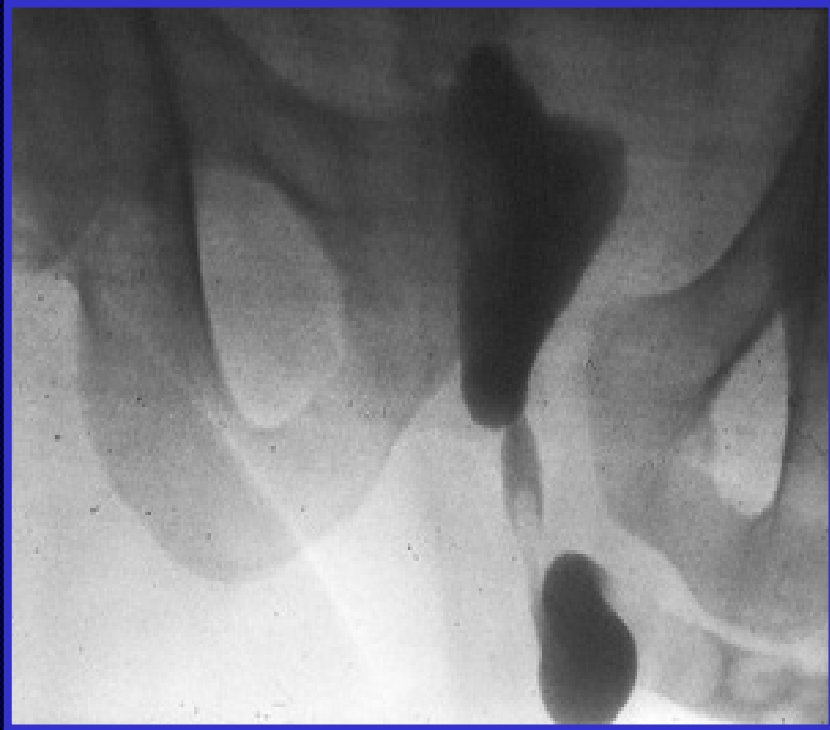


**rectum**





# Imaging techniques



**Hernia of the bladder into the perineum due to pubic  
symphysis diastasis**



# Imaging techniques

## Site of lesion

**membranous**



**adult**

**prostatic**



**children**



# Imaging techniques

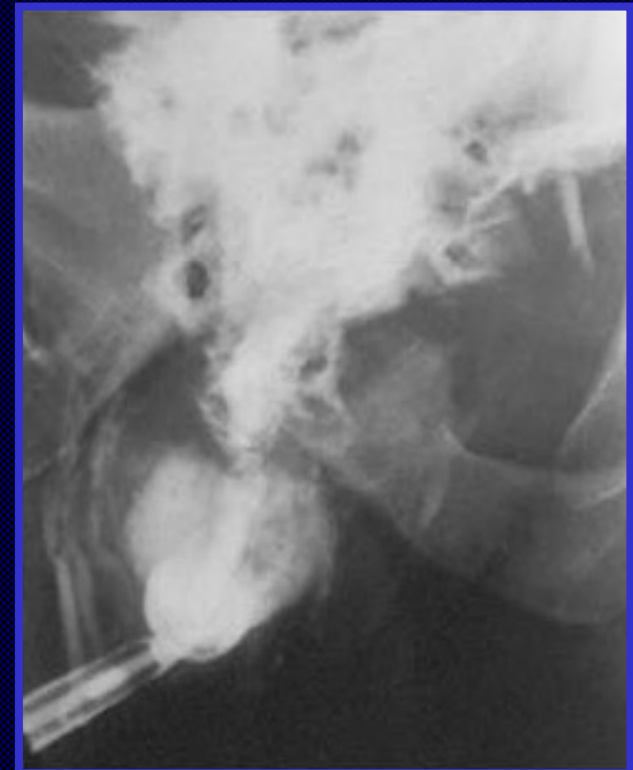
## Type of lesion



**stretched**



**partial rupture**



**complete rupture**



# Immediate management of posterior urethral trauma without associated lesions

urethra

- stretched
- partial rupture
- complete rupture



**Percutaneous suprapubic cystostomy  
under ultrasonographic guidance**



**Why ?**

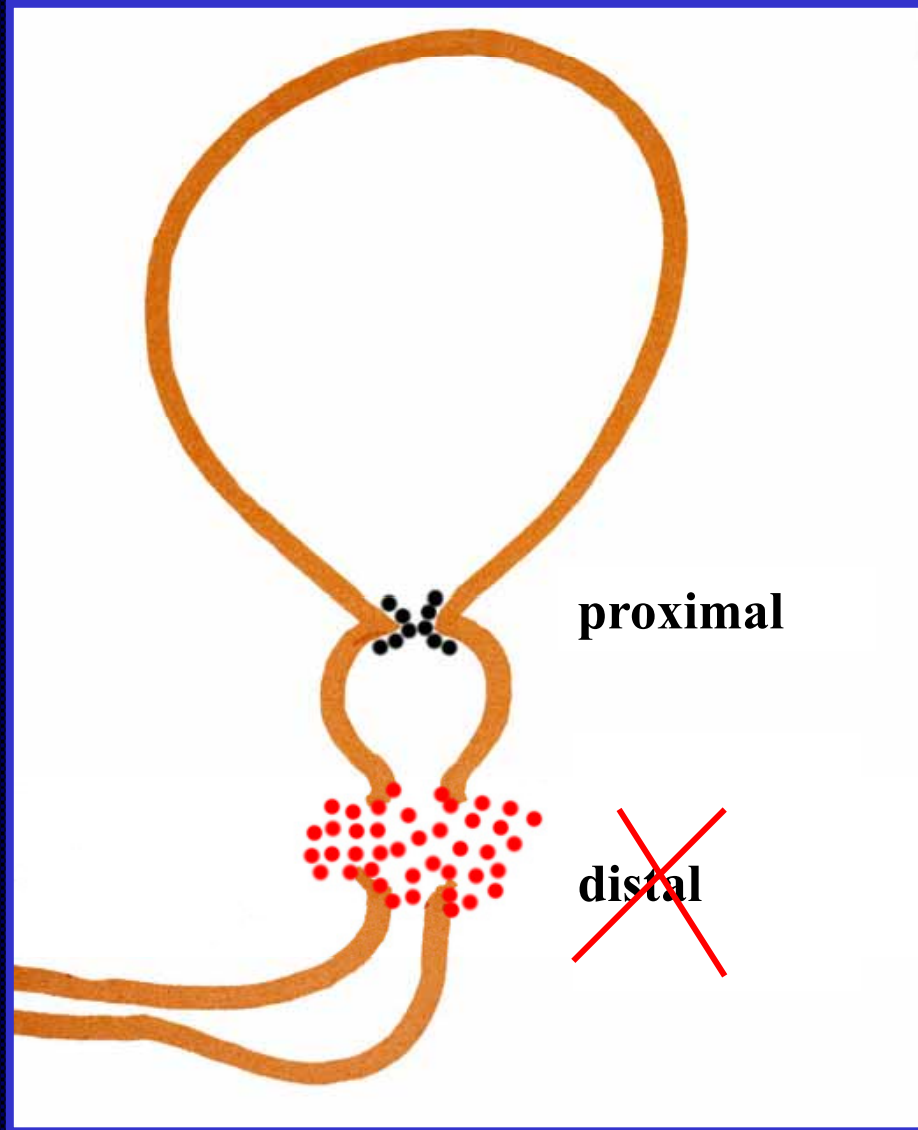




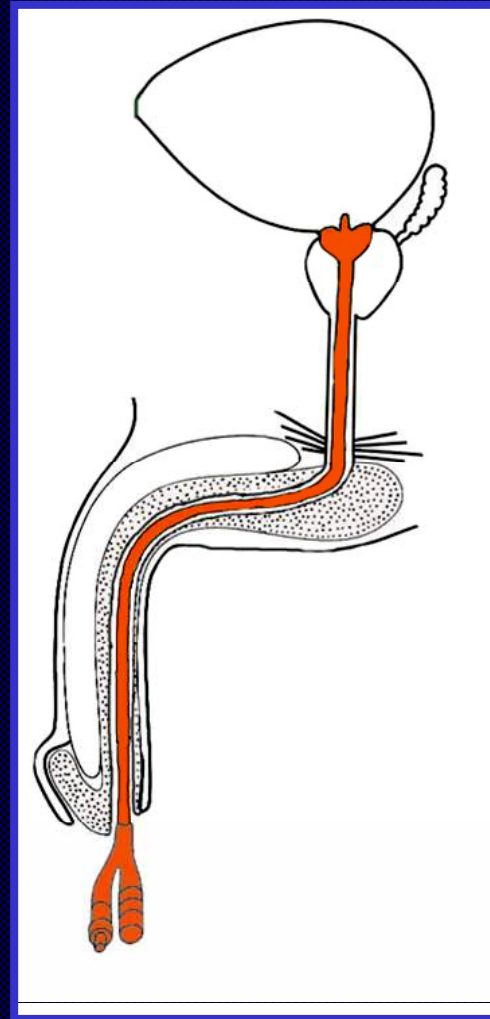
# Goal of the initial evaluation and management of the patient with PFUDD

- The immediate concern, in patients with PFUDD, is resuscitation of the patient to preserve life
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- Avoid jeopardizing sexual function residual to the trauma

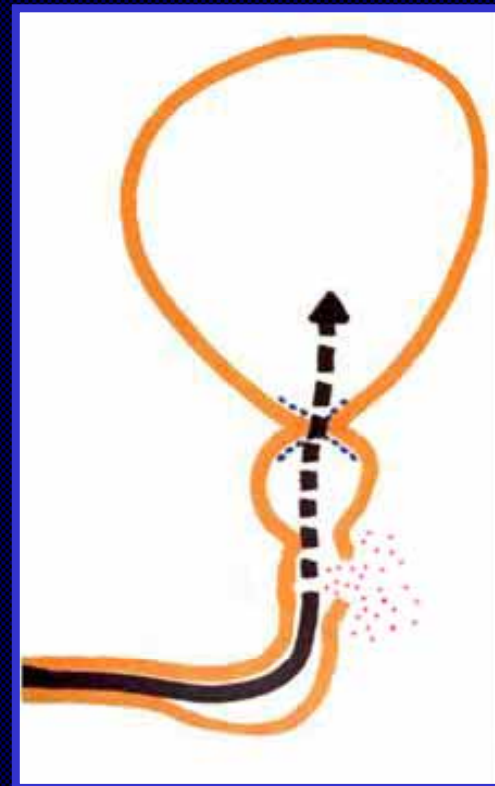




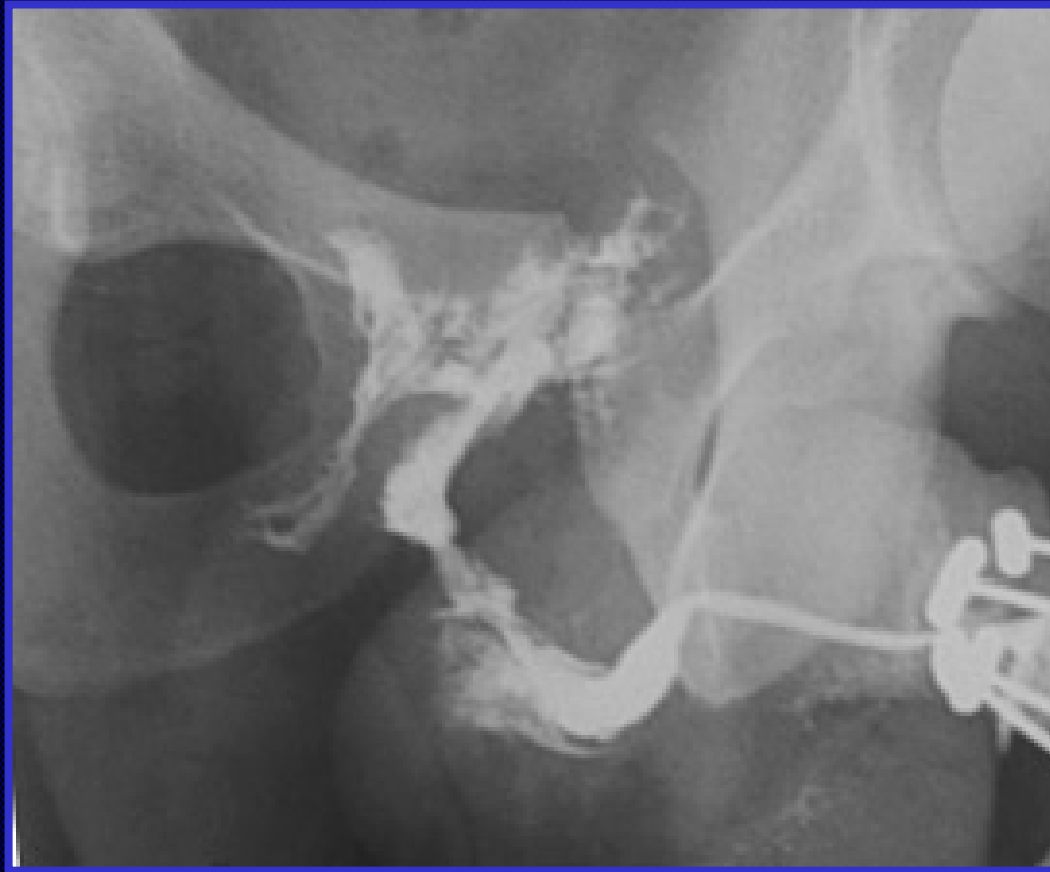
# Stretched



# Partial rupture



# Complete rupture







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

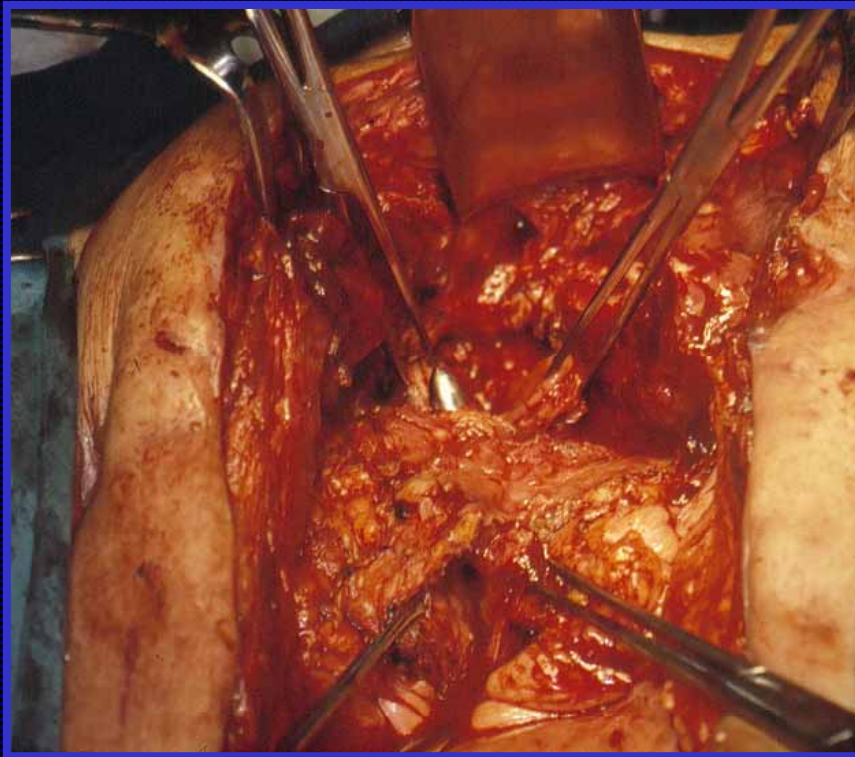


# Emergency treatment of posterior urethral trauma

- **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



# Immediate management of urethral trauma with associated lesions



- bladder rupture
- bladder neck lesions
- rectal tear



**Immediate surgical exploration**



# Endoscopic urethral realignment

- adequate operating room
- adequate instruments
- adequate patient
- adequate surgeon





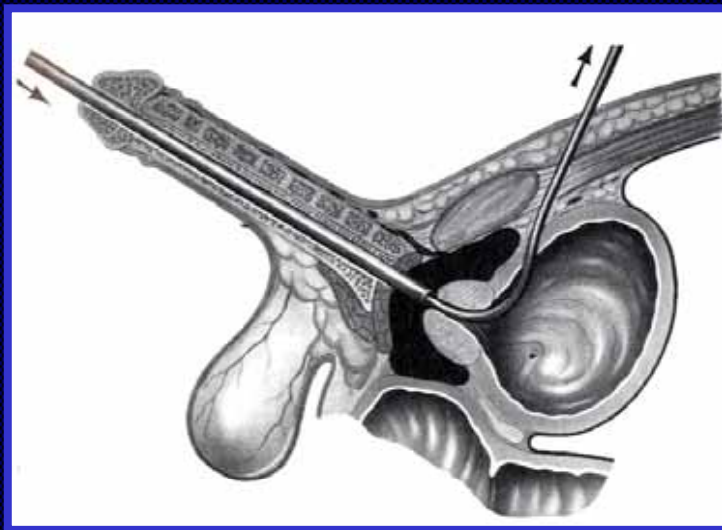
# Endoscopic urethral realignment



adequate operating room ?



# Endoscopic urethral realignment



adequate instruments ?





# Endoscopic urethral realignment



**adequate patient ?**

# Endoscopic urethral realignment



adequate surgeon ?



**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**





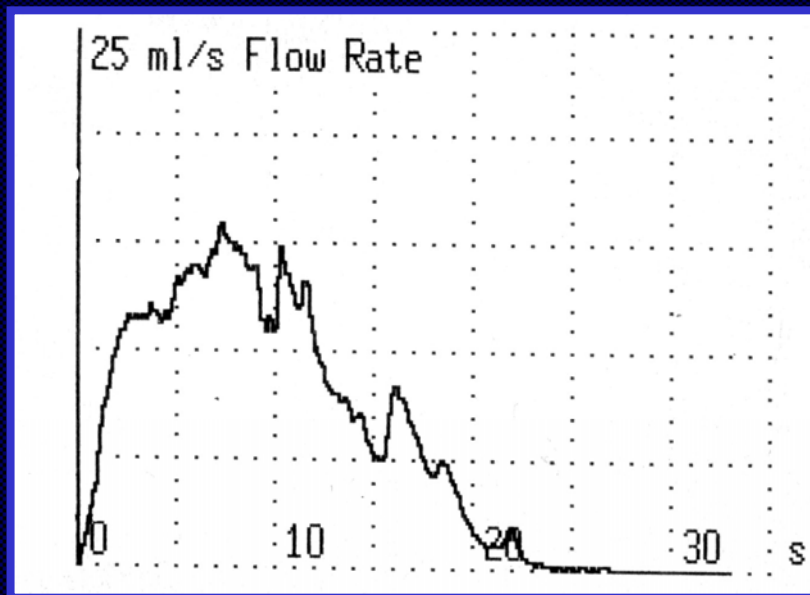
Center for Reconstructive Urethral Surgery





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

**Restore the urethral lumen, preserving urinary continence without jeopardizing sexual function residual to the trauma**



**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 on our website**

**Thank you !**



**Center for Reconstructive Urethral Surgery**

