Incontinence following pelvic trauma
Urinary incontinence in patient with pelvic fracture urethral distraction defects (PFUDD)

- **Traumatic** lesion to the bladder neck
- **Iatrogenic** lesion to the bladder neck
Traumatic lesion to the bladder neck

Immediate surgical exploration

Traumatic rupture of the bladder neck is more frequently observed in children than in adults, because of the rudimentary nature of the prostate and the pubo-prostatic ligaments.
Iatrogenic lesion to the bladder neck

Initial management of patient in the emergency room
Iatrogenic lesion to the bladder neck

Endoscopic or surgical urethral realignment
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.

Goal of the initial evaluation and management of the patient with PFUDD
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 tractor)
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 ≈ 27% are also associated with other intra-abdominal injuries.

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Pelvic fracture urethral distraction defects (PFUDD)

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

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“... 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”

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.
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

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Imaging techniques

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

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Imaging techniques

Site of lesion

membranous

prostatic

adult

children

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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

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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.

- Preserve the residual sphincter mechanism at the bladder neck
- Avoid jeopardizing sexual function residual to the trauma
- Divert urine away from the site of injury

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proximal

distal
Partial rupture
Complete rupture
In patients with PFUDD, urinary diversion by suprapubic cystostomy is the only method that 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

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Endoscopic urethral realignment

• appropriate operating room

• appropriate instruments

• appropriate patient

• appropriate surgeon
Endoscopic urethral realignment

appropriate operating room?

Center for Reconstructive Urethral Surgery
Endoscopic urethral realignment

appropriate instruments?
Endoscopic urethral realignment

appropriate patient?
Endoscopic urethral realignment

appropriate surgeon?

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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.
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 suggestions for the urologists of XXI century
- ... and more!

The website is up-to-date monthly

This lecture is fully available on our website

Thank you!