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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)

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

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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.
Pelvic fracture urethral distraction defects (PFUDD)

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

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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”

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
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
Imaging techniques

Site of lesion

membranous
prostatic

adult
children

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Imaging techniques

Type of lesion

stretched  partial rupture  complete rupture

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Immediate management of posterior urethral trauma without associated lesions

- stretched urethra
- 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

• 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
Stretched

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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.

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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?

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Endoscopic urethral realignment

adequate instruments?
Endoscopic urethral realignment

adequate patient?
Endoscopic urethral realignment

adequate 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

25 ml/s Flow Rate

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

Thank you!