Guido Barbagli

Center for Reconstructive Urethral Surgery

Arezzo - Italy

E-mail: guido@rdn.it  Website: www.urethralcenter.it
Congress of French Association of Urology

ESU COURSE: Trauma in Urology

Paris – France

20 November 2008
Traumatic posterior urethral disruption

Pelvic fracture urethral distraction defects
Pelvic fracture urethral distraction defects
PFUDD

- orthopedic surgeon
- general surgeon
- vascular surgeon
- thoracic surgeon
- urologic surgeon
"... 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."


Center for Reconstructive Urethral Surgery
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 urologists
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.

Center for Reconstructive Urethral Surgery
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.
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.
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

Center for Reconstructive Urethral Surgery
Immediate management of urethral trauma with associated lesions

- bladder rupture
- bladder neck lesions
- rectal tear

Immediate surgical exploration
Imaging techniques

Site of lesion

membranous

prostatic

adult

children

Center for Reconstructive Urethral Surgery
Imaging techniques

Type of urethral lesion

stretched    partial rupture    complete rupture

Center for Reconstructive Urethral Surgery
Question for the Audience

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

urethra

- stretched
- partial rupture
- complete rupture

Percutaneous suprapubic cystostomy
under ultrasonographic guidance

Center for Reconstructive Urethral Surgery
Why?
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

Old urologists
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?

Center for Reconstructive Urethral Surgery
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

Center for Reconstructive Urethral Surgery
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

Center for Reconstructive Urethral Surgery
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

→ Urethroplasty

Center for Reconstructive Urethral Surgery
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
Thank you!

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