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Pelvic fracture urethral injuries: The unresolved controversy

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Aim: We attempt to resolve the controversies about the management of pelvic fracture urethral injuries. Also, we present a treatment plan for this lesion.

Materials & Methods: All data on pelvic fracture urethra injuries in the English literature in the last 50 years were critically analyzed. Studies were eligible only if data were complete and conclusive.

Results: The risk of urethral injury is influenced by the number of broken pubic rami as well as involvement of the sacroiliac joint. Depending on the magnitude of trauma, the membranous urethra is first stretched and then partially or completely ruptured at the bulbomembranous junction. Injuries to the prostatic urethra and bladder neck occur only in children. Injury to the female urethra usually is a partial tear of the anterior wall and rarely complete rupture of the proximal or distal urethra. Diagnosis depends on urethrography in men and on a high index of suspicion and urethroscopy in women. Of the 3 conventional treatment methods primary suturing of the disrupted urethral ends has the greatest complication rates of incontinence and impotence (21 and 56%, respectively). Primary realignment has double the incidence of impotence and half that of stricture compared to suprapubic cystostomy and delayed repair (36 versus 19 and 53 versus 97%, respectively, $p < 0.0001$). Accordingly, recent reports have suggested endourologic and radiologic procedures to achieve primary realignment without the risk of exploring the injured urethra. These procedures should not adversely affect erectile function. Also, by endoscopy the surgeon may identify partial urethral rupture which can be stented safely under vision.

Conclusions: Inflexible policies of one procedure or another are inappropriate for the treatment of pelvic fracture urethral injuries in men. Success depends on proper selection and assignment which on turn depend on certain factors, including type of injury, separation of urethral ends (narrow or wide), associated injuries (inside or outside the urinary tract), patient condition, available facilities and surgeon experience. Treatment options include indwelling catheter for urethral stretch injury, endoscopic stenting or suprapubic cystostomy for partial rupture, endoscopic realignment or suprapubic cystostomy for complete rupture with a minimal distraction defect and surgical realignment if the distraction defect is wide. Associate injury to the bladder, bladder neck or rectum dictates immediate exploration for repair but does not necessarily indicate exploration of the urethral injury site. Under all circumstances, no blind urethral catheterization, primary suturing or realignment with catheter traction should be performed. In women, a conservative policy is not advised. Surgical exploration should be attempted via the retropubic route (realignment or suturing) for proximal and the vaginal route (urethral advancement) for distal injuries.

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