

Re: Penetrating Ureteral Trauma

Gustavo P. Fraga, Gustavo M. Borges, Mario Mantovani, Ubirajara Ferreira, Tiago L. Laurito,
Nelson R. Netto Jr

*Division of Trauma Surgery, School of Medicine, State University of Campinas, Unicamp,
Campinas, Sao Paulo, Brazil*

Int Braz J Urol, 33: 142-150, 2007

To the Editor:

Penetrating ureteral injuries from external violence is rare, as evidenced by this report of 20 reported injuries over an 8 year period from Sao Paulo by Fraga et al. This article is another in a long line of papers, emphasizing that a high index of suspicion is needed to reliably diagnose ureteral injuries. Again, the majority of penetrating ureteral injuries are diagnosed intra-operatively, with direct exploration the most accurate method. Ureteral peristalsis is not a reliable indication of viability or of adequate vascularity. The most reliable way to determine ureteral viability is by incision and monitoring for a bleeding edge. Intravenous indigo carmine is also helpful in identifying ureteral injury by extravasation of blue dye from the injury site. Another method to test ureteral integrity is by cystotomy and retrograde injection of blue dye by pediatric feeding tube.

Although none of the patients studied here underwent imaging prior to surgical exploration, intravenous urography is often the primary imaging study employed to evaluate ureteral integrity, yet results can be very variable. IVU findings suggestive of ureteral injury are incomplete visualization of the entire ureter, ureteral deviation or dilatation, urinary extravasation, hydronephrosis, and delayed or non-visualization of the injured renal unit. One-shot IVU, however, has little value for assessing ureteral integrity. (1)

For the unstable patient, the method of “damage control” was not employed or mentioned in this article on ureteral injuries. Typically, when the patient is too unstable to undergo lengthy ureteral reconstruction, a “damage control” approach of temporary cutaneous ureterostomy over a single “J” ureteral stent or pediatric feeding tube should be performed (2). An alternative method of last resort is ureteral ligation, proximal to the injury, followed by a percutaneous nephrostomy tube when stable. Intraoperative placement of a nephrostomy tube is time consuming and more difficult than one appreciates – it should be avoided. Definitive reconstruction is delayed until the patient has stabilized from his other injuries.

References

1. Brandes SB, Chelsky MJ, Buckman RF, Hanno PM: Ureteral injuries from penetrating trauma. *J Trauma*. 1994; 36: 766-9.
2. Coburn M: Damage control and urologic injuries. *Surg Clin N Am*. 1997; 77: 821-34.

Dr. Steven B. Brandes

*Washington University School of Medicine
Department of Surgery
St Louis, Missouri, USA
E-mail: brandess@wudosis.wustl.edu*