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Samir S. Taneja

Preface: Urologic Trauma and Reconstruction **xiii**

Allen F. Morey and Steven J. Hudak

Current Epidemiology of Genitourinary Trauma **323**

James B. McGeady and Benjamin N. Breyer

This article reviews recent publications evaluating the current epidemiology of urologic trauma. The authors briefly explain databases that have been recently used to study this patient population and then discuss each genitourinary organ individually, utilizing the most relevant and up-to-date information published for each one. The conclusion of the article briefly discusses possible future research and development areas pertaining to the topic.

High-grade Renal Injuries: Radiographic Findings Correlated with Intervention for Renal Hemorrhage **335**

Jeremy B. Myers, William O. Brant, and Joshua A. Broghammer

With the advent of advanced trauma critical care, and precise methods of assessing renal trauma with computed tomography, most patients with high-grade renal trauma can be managed conservatively. Some patients, however, do not do well with conservative management. This article evaluates specific radiographic characteristics that have recently been associated with intervention for renal hemorrhage after trauma.

Damage Control Maneuvers for Urologic Trauma **343**

Thomas G. Smith III and Michael Coburn

This article discusses the evaluation and management of genitourinary system trauma in the critically injured patient. Injuries to any of the organs in the genitourinary system can be managed with a damage control strategy. Often, there is little or no preoperative imaging or injury staging, and these injuries are diagnosed intraoperatively. Finally, specific management strategies of renal, ureteral, bladder, urethral, and genital injuries are discussed.

Strategies for Open Reconstruction of Upper Ureteral Strictures **351**

Richard B. Knight, Steven J. Hudak, and Allen F. Morey

This article presents a review of the literature regarding surgical techniques and outcomes for reconstruction of strictures involving the upper ureter. The preoperative assessment for proximal ureteral stricture is briefly reviewed, followed by a discussion of ureteroureterostomy, transureteroureterostomy, ureterocalicostomy, bladder flaps, downward nephropexy, bowel interposition grafts, onlay or tubular grafting, renal autotransplantation, and nephrectomy. The future direction for reconstruction of the proximal ureter is proposed.

- Robotic Reconstruction of Lower Ureteral Strictures** 363
Andrew P. Windsperger and David A. Duchene
- Distal ureteral reconstruction is increasingly being performed by minimally-invasive surgical techniques. The robotic surgical platform provides an additional modality for repairing distal ureteral defects with the associated benefits of a minimally-invasive approach. This article reviews and describes the technical aspects of robotic distal ureteral reconstruction. In addition to discussion of the operative technique, factors such as patient selection, preoperative and postoperative evaluation, and published outcomes are addressed.
- Standardized Approach for the Treatment of Refractory Bladder Neck Contractures** 371
Daniel Ramirez, Jay Simhan, Steven J. Hudak, and Allen F. Morey
- Bladder neck contracture is a relatively uncommon but well-described complication after the surgical treatment of prostate cancer. Although numerous treatments have been described as an initial management strategy for patients with this condition, the management of refractory cases remains highly variable. This article evaluates various therapeutic maneuvers used for the treatment of refractory bladder neck contracture and further describes the preliminary results of an endoscopic balloon dilation with concomitant deep trausurethral incision procedure. Short- and long-term management algorithms for patients with recurrent bladder neck contractures are reviewed.
- Tips for Successful Open Surgical Reconstruction of Posterior Urethral Disruption Injuries** 381
Joel Gelman
- This article provides an overview of the open surgical management of posterior urethral disruption injuries. The discussion includes the evaluation of the patient before surgery with a focus on urethral imaging and details of posterior urethroplasty surgical technique.
- Primary Realignment of Pelvic Fracture Urethral Injuries** 393
Laura Leddy, Bryan Voelzke, and Hunter Wessells
- This article reviews the history, indications, technique, complications, and outcomes of primary urethral realignment of pelvic fracture urethral injuries. In clinically stable patients, an attempt at endoscopic urethral realignment is appropriate and may result in long-term urethral patency. However, long term follow up is necessary due to elevated rates of delayed stricture formation requiring endoscopic or surgical repair.
- Reconstruction of Traumatic and Reoperative Anterior Urethral Strictures via Excisional Techniques** 403
Lee C. Zhao, Steven J. Hudak, and Allen F. Morey
- Reoperative urethroplasty is complicated by increased urethral and periurethral scar and the frequent persistence of comorbid conditions that caused the original failure. Nevertheless, by experienced clinicians, reoperative urethral reconstruction can be completed with success rates comparable with those of primary urethroplasty.

Reconstruction of Radiation-induced Injuries of the Lower Urinary Tract 407

Nathaniel K. Ballek and Christopher M. Gonzalez

This article presents an overview of reconstruction of lower urinary tract injury caused by radiation therapy for prostate cancer. Discussions include cause, patient evaluation, reconstructive techniques, and outcomes following repair.

Penile Prosthesis Insertion for Acute Priapism 421

Timothy J. Tausch, Ryan Mauck, Lee C. Zhao, and Allen F. Morey

Shunt surgery is not universally successful toward detumescence, may lead to erectile dysfunction, and can make eventual penile prosthesis insertion difficult. Penile prosthesis insertion during a priapistic episode alleviates ischemic pain, allows the patient to resume sexual function sooner, and prevents corporal scarring and shortening that makes subsequent prosthesis implantation difficult.

Advances in Diagnosis and Management of Genital Injuries 427

Andrew J. Chang and Steven B. Brandes

External genital trauma is uncommon. However when it occurs, it can cause long-term physical, psychological, and functional quality-of-life sequelae. Rapid and proper treatment can help preserve cosmesis and function. Therefore, the treating physician must have a high index of suspicion when evaluating genital injuries. This article reviews the proper initial assessment of the injury as well as the immediate and delayed operative management of genital trauma.

Skin Grafting of the Penis 439

Hema J. Thakar and Daniel D. Dugi III

Penile skin loss may occur after trauma, infection, or as a result of surgical resection. This article reviews indications for reconstruction of the penile skin, skin anatomy, and skin graft physiology. Choice of reconstructive options, skin grafting techniques, and complications of skin grafting are also discussed.

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