

Table 2. Predictors of decreased length of time to discharge (days)

Predictor	SHR	95% CI	p-value
Penetrating Trauma	1.88	1.37 - 2.57	<0.01
Trauma Grade			
Grade 4	0.69	0.54 - 0.88	<0.01
Grade 5	0.43	0.29 - 0.63	<0.01
Renal surgery	0.70	0.46 - 1.07	0.10
Non-GU surgery	0.29	0.16 - 0.52	<0.01
Associated injuries	0.49	0.35 - 0.69	<0.01
Any complication	0.72	0.57 - 0.92	<0.01

SHR = subdistribution hazard ratio as determined by the Fine-Gray model for competing risks survival analysis

Table 1. Characteristics of Patients Who Sustain High-Grade Renal Trauma by Disposition

	All n = 408	Discharge n = 298 (73.0%)	Transfer n = 82 (20.1%)	Death n = 28 (6.9%)	p-value
Characteristic					
Hospital days, mean	16.0	15.4	21.2	8.8	<0.01*
Age, mean (yrs)	30.7	29.3	33.3	37.4	<0.01*
Male, n (%)	352 (85.2)	263 (88.3)	65 (79.3)	19 (67.9)	<0.01
Penetrating, n (%)	248 (60.1)	197 (66.1)	37 (45.1)	13 (46.4)	<0.01
Injury Grade, n (%)					<0.01
Grade 3	178 (43.1)	142 (47.7)	23 (28.1)	11 (39.3)	
Grade 4	188 (45.5)	130 (43.6)	46 (56.1)	9 (32.1)	
Grade 5	47 (11.4)	26 (8.7)	13 (15.9)	8 (29.6)	
Surgery, n (%)	289 (70.0)	211 (70.8)	52 (63.4)	23 (82.1)	0.15
Renal (GU) surgery	257 (62.2)	197 (66.1)	42 (51.2)	16 (57.1)	0.04
Non-GU surgery	249 (60.3)	179 (60.1)	48 (58.5)	20 (71.4)	0.46
Associated injuries, n (%)	331 (80.2)	228 (76.5)	72 (87.8)	28 (100)	<0.01
Complication, n (%)	182 (44.1)	117 (39.3)	43 (52.4)	21 (75.0)	<0.01
GU-related complication	82 (19.9)	48 (16.1)	16 (19.5)	18 (64.3)	<0.01

χ^2 exact test of trend used for all tests of statistical significance except as otherwise noted
* – p-value refers to a linear regression

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MP18-05

EPIDEMIOLOGY OF GENITOURINARY TRAUMA IN SERVICE MEMBERS WITH COLORECTAL INJURY WOUNDED DURING OPERATION IRAQI FREEDOM AND OPERATION ENDURING FREEDOM

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INTRODUCTION AND OBJECTIVES: The Joint Surgical Transcolonic Injury or Ostomy Multi-theater Assessment (J-STOMA) project is an ongoing initiative to examine outcomes in patients with colorectal (CR) injury sustained during Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF). Initial evaluation of the J-STOMA cohort has revealed a high rate of genitourinary (GU) injury among service members (SMs) with CR injury. Given the paucity of published data (military and civilian) on coexistent GU and CR injury, we sought to describe the epidemiology of GU injury in US and coalition SMs with CR injury.

METHODS: Department of Defense electronic health records of all patients in the J-STOMA database were reviewed to identify those SMs with synchronous GU and CR injury. Demographic data, including mechanism of injury, GU and CR organs injured, and initial management of GU injury were reviewed. GU injuries were then stratified by body region: internal (kidney, ureter, bladder, prostate) and external (urethra and external genitalia); to elucidate potential recurrent patterns of injury. Univariate analysis comparing groups by wound mechanism and region injured was performed using the chi-square test.

RESULTS: Among 755 SMs with colorectal injuries sustained during OIF and OEF, 260 (34%) had at least one associated GU injury. A large number of SMs (77/260, 30%) had multiple GU organs injured. Internal GU injury was observed in 57% of SMs, 30% had external GU injury only, and 13% had both internal and external GU injuries. Gun-shot wounds were more likely to result in internal GU injuries (82/148, 56%), while blast injury was more likely to cause either external GU

injury (63/78, 82%) or internal + external GU injury (18/33, 55%, $p < 0.001$). Ascending, transverse, and descending colonic injuries predominated in those with internal GU injuries (94/147, 64%), while sigmoid, rectal, and anal injuries were more common in patients with external GU injury (51/77, 66%; $p < 0.001$). The mortality rate for SMs with combined CR and GU injury was 13% (34/260).

CONCLUSIONS: GU injury is common among SMs who sustain CR injury on the modern battlefield. Despite the heterogeneity of combat injury, specific patterns can be seen based on the mechanism of injury and anatomic region affected. These data provide important information that can guide future efforts at injury prevention, primary surgical management, and subsequent reconstructive surgery and rehabilitation.

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MP18-06

PREDICTING FACTORS FOR CONSERVATIVE TREATMENT FAILURE IN GRADE IV PEDIATRIC BLUNT RENAL TRAUMA

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INTRODUCTION AND OBJECTIVES: Successful conservative management for grade IV pediatric blunt renal trauma has been well-established, but concerns regarding complications in conservative management have been refuted. The aim of this study is to identify clinical factors and radiological features associated with the need for urological intervention in grade IV pediatric renal trauma patients who were treated with conservative approach initially.

METHODS: We retrospectively reviewed the medical records of consecutive children (≥ 16 years old) presenting to our center between 1996 and 2014 with grade IV renal injury according to the American Association for the Surgery of Trauma. Clinical factors, radiologic features on computed tomography, use of urological intervention, and patient outcomes were analyzed.

RESULTS: A total of 26 children presented with grade IV renal injury after blunt trauma. Hemostatic intervention due to life threatening bleeding was performed in 4 patients. Of the 22 patients who were determined to undergo primary conservative management, 8 patients (36%) required urological intervention due to symptomatic urinoma. The patients who required urological intervention showed a higher transfusion rate and larger size of perinephric hematoma than those who did not require intervention ($p = 0.001$ and $p = 0.001$, respectively). Main laceration located in the antero-medial portion of the kidney and intravascular contrast extravasation were observed more frequently in patients underwent urological intervention compared to patients with successful conservative management ($p = 0.046$ and $p = 0.022$, respectively). All 8 patients were treated successfully by urological intervention without renal loss.

CONCLUSIONS: Transfusion requirement and main laceration located in the antero-medial portion of the kidney, intravascular contrast extravasation, and large perinephric hematoma on initial computed tomography were found to be indicating factors for urological intervention in grade IV pediatric renal trauma patients who were treated with conservative approach initially. Our findings indicate that early detection and appropriate intervention should be considered a priority in the conservative treatment of grade IV pediatric renal trauma.

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