Urological consultation in patients with renal trauma can decrease rates of nephrectomies.

Nathan Clark, Rodrigo Donaldisio da Silva, Kevin Van, Cole Weidel, Sharon White, Diedra Gustafson, Fernando J. Kim.

Background
Renal trauma is implicated in up to 3.25% of trauma victims and from 8-10% of abdominal trauma victims. Urologists may or may not be consulted to assist in management. Convention has transitioned from an open surgery to more conservative management style if hemodynamic stability is present. Few studies show the impact of urological consultation on behalf of renal trauma victims. We previously found significantly higher rates of conservative management and mortality benefits when urologists were consulted regardless of trauma grade. 3

Aims
- Evaluate if urological consultation can improve outcomes in renal trauma patients
- Evaluate for disparities in the incidence and care for individuals of varied ethnic backgrounds who suffer renal trauma.

Methods
Patients diagnosed with renal trauma who had measurable systolic blood pressure and pulse on admission to Denver Health Medical Center from January 2008 to July 2020 were retrospectively reviewed and included in the study. Patient characteristics and outcomes were compared between the groups. Urological consultation request was made according to the trauma team’s discretion. Trauma grade was assigned based on AIS score as seen on CT scan or intraoperatively and ascertainment in the operative report. Ordinal data was compared using chi-square tests and nominal data was compared using T-tests. Regression analysis for variation was used to control for patient differences in SBP, pulse, trauma grade, GCS, and ISS. Statistical significance was assigned to p-values <0.05. IRB: 10-0931

References

Discussion
We found that even after controlling for shock, tachycardia, AIS, and ISS, survival rate is significantly higher when urology is involved in patient care. Our study shows that patients in the urological consultation group who had sustained high grade renal trauma not only underwent nephrectomy significantly less often, but also had a significant mortality benefit. In patients who did undergo removal of renal tissue, pre-operative or intraoperative urology consultation more often resulted in nephron sparing techniques. Half of such cases in our series resulted in partial nephrectomy, and no partial nephrectomies occurred in the no consultation group.

Our study did not find ethnicity to have any significant bearing overall on whether urology was consulted. White patients received consultation for grade 4-5 trauma 77% of the time, but that was considerably lower for Hispanic patients (85%), black patients (49%), and those who identified as “other” (59%). Minorities sustained significantly more penetrating trauma when compared to white patients.

Fortunately, analysis did not show differences in consultation rates for blunt or penetrating trauma victims received consultation compared to non-blunt trauma. Our study did not find ethnicity to have any significant bearing overall on whether urology was consulted. White patients received consultation for grade 4-5 trauma 77% of the time, but that was considerably lower for Hispanic patients (85%), black patients (49%), and those who identified as “other” (59%). Minorities sustained significantly more penetrating trauma when compared to white patients.

Conclusion
We have demonstrated that urological consultation in the event of high-grade renal trauma leads to improved patient care with increased survival, decreased overall nephrectomy rate, and increased nephron sparing techniques. These significant benefits show the importance of the multidisciplinary and generally conservative approach to the management of renal trauma.