## Title
MP20-06 PERIRENAL FAT THICKNESS IS ASSOCIATED WITH RENAL TRAUMA INJURY GRADE



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poorly documented. The main objective of this study was to assess the frequency of late complications after BTK, the secondary objective was to identify their predictors of occurrence.

METHODS: A retrospective observational study of the TraumAFUF project was conducted, including, between 2005 and 2018, all BTK treated in 18 French hospitals and followed for more than 3 months. The characteristics of the initial trauma, as well as any complications occurring after three months, were identified. The patients were divided into two groups: onset of a late complication (LC group) or uncomplicated (NLC group). The groups were compared in univariate and multivariate analyses to identify the risk factors for the occurrence of these complications.

RESULTS: Among the 454 patients included, the median and mean duration of follow-up were 14.8 and 27 months (SD = 31 months). Fifty presented with LC (11%), the most frequent being a symptomatic morphologically altered kidney (2.9%), a secondarily impaired biological renal function (2.9%), or a secondary arterial hypertension (2.4%). The median time to complication was 12±3 months. In univariate analysis, the risk factors identified were: high grade renal trauma ≥ IV (OR = 2.4, p = 0.025), active bleeding (OR = 2.6, p = 0.007), need for transfusion (OR = 2.3, p = 0.001), or interventional or endoscopic treatment (OR = 1.7, p = 0.09 and OR = 2.0, p = 0.035). However, in multivariate analysis, none of these items appeared to be an independent risk factor for late complication.

CONCLUSIONS: BTK occurs particularly in young patients and is associated with immediate morbidity, but also long-term morbidity, as late complications can occur more than 3 months after the trauma in 11% of cases. In our study, certain risk factors for these complications seem to emerge: high grade of the AAST classification, active bleeding, initial transfusion or interventional management. If we were unable to identify an independent risk factor for late complication after BTK, however, it allows us to identify a patient profile that could require prolonged follow-up, in order to detect these complications and prevent their progression.

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## MP20-06

### PERIRENAL FAT THICKNESS IS ASSOCIATED WITH RENAL TRAUMA INJURY GRADE

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INTRODUCTION AND OBJECTIVE: Previous research has demonstrated an association between increased body mass index (BMI) and lower risk of high-grade renal trauma (HGRT) in patients sustaining blunt injuries. We hypothesize this association is related to a shock-absorbing effect of adiposity around the kidney. We aim to explore the association between perirenal fat thickness (PFT) and renal trauma grade. We hypothesize that patients with greater perirenal fat will have lower rates of high-grade renal injury following blunt trauma.

METHODS: We identified all patients with renal trauma who arrived at the emergency department of a single trauma center between 2014 and 2020. Radiology images were reviewed to measure the PFT around the uninjured kidney due to disrupted PFT around the traumatized kidney. Patients with no available images or penetrating trauma mechanism were excluded. Logistic regression was used to assess the relation between PFT and HGRT (defined as AAST renal grade IV - V), adjusting for age, sex, and injury severity scale. Linearity assumption of PFT in the regression model was checked with restricted cubic splines analysis.

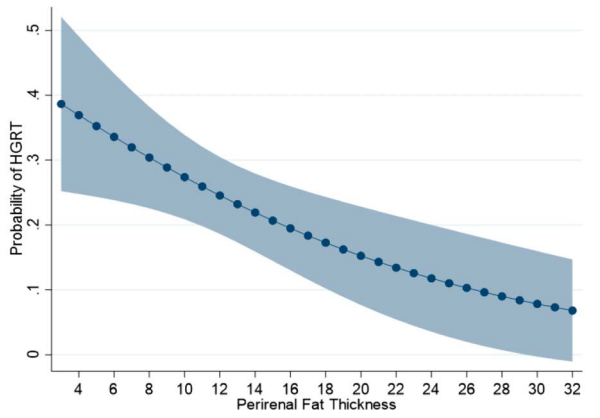
RESULTS: 150 patients with renal trauma were included. Median age was 38.5 years (IQR 26 – 52) and 106 (70.7%) were males. PFT ranged between 2.1 and 50.1 mm, and 31 (20.7%) had HGRT. Interestingly, PFT only mildly correlates with BMI (Pearson correlation coefficient = 0.42, p < 0.0001). Those with HGRT had significantly lower PFT compared to those without HGRT (median 9.5 mm vs 11.9 mm, p = 0.047). In the multivariable analysis adjusting for age, sex, and injury severity scale, increasing PFT was associated with decreased odds (OR 0.91, 95% CI 0.84 – 0.98, p = 0.015) of HGRT (Table 1). Figure 1 depicts the model predicted probability of HGRT according to PFT.

CONCLUSIONS: Increasing perirenal fat thickness is associated with lower risk of high grade renal trauma following blunt injury. These results support a protective cushion role of adiposity in renal trauma. Notably, PFT was not strongly correlated with BMI, underscoring limitations of BMI as an accurate adiposity measure.

**Table 1.** Multivariable Logistic Regression Analysis for the Association between Perirenal Fat Thickness (PFT) and High Grade Renal Trauma (HGRT).

| | Odds Ratio | 95% CI | *p* value |
|---|---|---|---|
| **PFT** | 0.91 | 0.84 - 0.98 | **0.015** |
| **Age** | 1.01 | 0.98 - 1.03 | 0.287 |
| **Male sex** | 1.34 | 0.52 - 3.4 | 0.544 |
| **Injury severity scale** | 1.04 | 1.01 - 1.07 | **0.006** |

**Figure 1.** Adjusted Logistic Regression Predicted Probability of High Grade Renal Trauma (HGRT) according to Perirenal Fat Thickness (PFT).

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## MP20-07

### UROLOGY CONSULTATION IS ASSOCIATED WITH ADHERENCE TO IMAGING GUIDELINES AND DECREASED NEPHRECTOMY IN HIGH GRADE RENAL TRAUMA

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INTRODUCTION AND OBJECTIVE: Renal trauma is unique in that acute management involves the trauma team, primarily urology, or joint management. The ideal management pathway has yet to be established. We aim to describe rates of urology consultation following renal trauma and assess subsequent impact on imaging and intervention.

METHODS: We conducted an IRB-approved retrospective review of patients at a Level I trauma center sustaining renal trauma between 2014 and 2021. Demographic, injury, radiologic, and intervention variables were extracted and compared by urology and trauma surgery management using chi-squared, Fischer's exact tests, and Mann-Whitney U tests. All available images were ultimately graded using American Association for the Surgery of Trauma (AAST) scoring. Analyses were performed using STATA with p < 0.05 considered significant.

RESULTS: From 2014-2021, 118 patients with median age 29 (IQR 22-41) incurred renal trauma. Urology was consulted in 18 (15.3%)