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LETTER TO THE EDITOR

Mitigating renal complications post-bilateral ureteroscopy: a look at stents and surgery time

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Dear Editor,

We read with immense interest the study by Danilovic et al. [1] on renal function following bilateral flexible ureteroscopy (fURS) for kidney stones, titled "Play it safe: renal function after bilateral flexible ureteroscopy for kidney stones." This work sheds light on the perioperative factors influencing renal function in patients undergoing this procedure, especially highlighting the impact of surgical duration and preoperative estimated glomerular filtration rate (eGFR) on the risk of temporary renal impairment. Danilovic et al. conclude that optimal patient selection and keeping operative times under 120 min are vital in averting acute renal function deterioration post-bilaterally fURS.

This conclusion underscores the inherent risks associated with high intrarenal pressures and prolonged surgery exposure, resonating with the reasons highlighted for transient renal function deficits after bilateral fURS—high intrarenal pressure, tubular damage, forced saline irrigation, and reperfusion injury [1]. However, beyond the well-articulated points by Danilovic et al., we posit that the placement of bilateral double-J stents and consequent alteration of the ureterovesical junction (UPJ) integrity might also contribute significantly to postoperative renal function decline. This assertion is supported by the guidelines from the European Association of Urology on pediatric urology [2], which suggest that the UPJ's competency is crucial in maintaining renal function.

Jones et al. [3] demonstrated that in patients without ureteral stents, renal pelvis pressure increases with bladder distension. Similarly, Sameh et al. [4] found that pressure from the bladder was almost instantaneously transmitted to the renal pelvis through ureteric stents, underscoring the mechanical impact of stenting on renal function. Moreover, studies have noted the paradoxical presence of hydronephrosis and ureteral injury in patients with indwelling ureteral stents, typically expected to ensure efficient drainage [5]. These findings indicate that the effects of ureteral stenting, especially bilateral stenting, might extend beyond mechanical drainage, potentially exacerbating vesicoureteral reflux (VUR) and contributing to upper tract dilatation.

Furthermore, the observations by Ramsay et al. [6] and Patel et al. [7] regarding the altered ureteral peristalsis and thickening of the ureteral wall post-double J stent placement, align with findings from Danilovic et al. [1], who noted a prompt recovery of eGFR following the removal of double-J stents. This rapid recovery not only suggests that the renal impairment is temporary but also highlights the complex interplay between stenting and renal function post-RIRS. The significance of these findings is further nuanced by the delayed impact of serum creatinine levels in reflecting renal damage [8], underscoring the importance of timely measurement post-procedure to accurately assess renal function. Collecting bilateral RIRS cases is crucial for analysis, as relying solely on unilateral RIRS data could lead to underestimating the procedure's impact due to compensatory effects from the non-operated kidney, potentially masking the true extent of VUR-related renal damage.

In light of the above, we advocate for a comprehensive consideration of the mechanical and physiological impacts of bilateral double-J stenting on renal function post-RIRS. Understanding these dynamics is crucial for optimizing surgical practices and ensuring the well-being of patients undergoing this procedure for bilateral kidney stones.

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Declarations

Conflict of interest The authors have no conflicts of interest to declare.

Ethical approval Not applicable.

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