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**Stone Location and Stenting Influence Patient-Reported Pain and Quality of Life after Ureteroscopy**

*Russell E. N. Becker*, Stephanie Daignault-Newton, Andrew M. Higgins, Mahin Mirza, Bronson Conrado, Golena Fernandez Moncaleano, Mahmoud Hijazi, Ann Arbor, MI, Karla Witzke, Midland, MI, Jeremy Konheim, Ypsilanti, MI, Richard Sarle, Lansing, MI, Kandis Rivers, West Bloomfield Township, MI, William W. Roberts, Khurshid R. Ghani, Casey A. Dauw, for the Michigan Urological Surgery Improvement Collaborative, Ann Arbor, MI*

INTRODUCTION AND OBJECTIVE: Studies of ureteroscopy outcomes have historically centered on efficacy (stone-free rates) and safety (complications). However, the patient's own subjective experience, including pain and health-related quality of life (HRQOL), are gaining recognition as additional important factors. Empirical data on these are severely lacking. We have previously reported that ureteral stent placement after ureteroscopy increases unplanned healthcare encounters. However, less is known about the impact of stent placement on HRQOL.

METHODS: The Michigan Urological Surgery Improvement Collaborative (MUSIC) Reducing Operative Complications from Kidney Stones (ROCKS) group launched a patient-reported outcomes (PRO) program in 2021 which includes assessments of pain (PROMIS Pain Intensity and Pain Interference), lower urinary tract symptoms (LURN), and treatment satisfaction (ICIQ). This automated system distributes electronic questionnaires preoperatively and at 7-10 days and 4-6 weeks postoperatively. We compared postoperative day 7-10 (POD7) PROs for stented versus not stented patients based on stone location (renal versus ureteral) with linear regression models adjusting for preoperative score, age, gender, pre-stenting, and stone size.

RESULTS: Clinical and PRO data were collected on 338 patients (64% ureteral, 36% renal stones). Overall 251 (74.3%) had a stent placed at the time of surgery. Stented patients had larger stones in both the ureteral (8 vs 6mm, p<0.001) and renal (10 vs 7mm, p<0.001) subgroups. Stent omission in patients with ureteral stones resulted in improved PROMIS Pain Interference (52.7 vs 57.4, p<0.01), PROMIS Pain Intensity (48.9 vs 53.6, p<0.01), LURN urinary symptoms (6.3 vs 10.3, p<0.001), and ICIQ treatment satisfaction (21.1 vs 18.5, p<0.01) at POD7 (Figure). For patients with renal stones, stent omission resulted in improved PROMIS Pain Interference (55.8 vs 61.1, p=0.02) and LURN urinary symptoms (6.9 vs 10.7, p<0.001), without significant differences in PROMIS Pain Intensity (52.9 vs 56.6, p=0.1) or ICIQ treatment satisfaction (20.0 vs 17.6, p=0.07).

CONCLUSIONS: Stent omission at the time of ureteroscopy was associated with significantly better PROs at POD7 for patients with both ureteral and renal stones.

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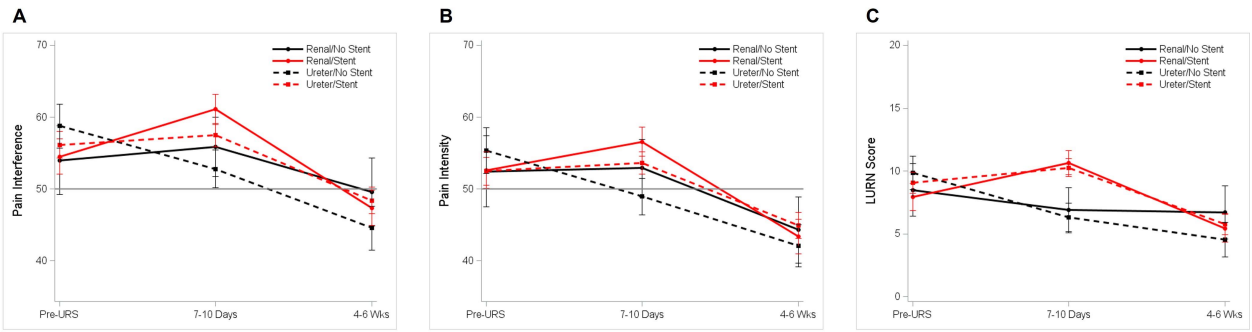


**Figure.** PROMIS Pain Interference (A), PROMIS Pain Intensity (B), and LURN urinary symptom scores (C) for patients undergoing ureteroscopy and laser lithotripsy for ureteral stones (dashed lines) or renal stones (solid lines), with stent placement (red) or stent omission (black). T-scores are normalized such that 50 is the average pain of the US population, with standard deviation of 10, and a clinically meaningful difference in T-score is 2.5-3.5 points.