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Introduction & Objectives: The indications for ureteric stenting post ureterorenoscopy (URS) remain controversial, and stent symptoms are a cause of significant morbidity. The objective of this study was to determine indications and complications related to stent use in a large series.

Materials & Methods: A prospective database of 1418 patients undergoing therapeutic and diagnostic flexible or/ and semirigid URS under the care of a single Urologist were retrospectively analysed. Rates of stent insertion were determined stratified by stone size, number, location, and density; and by indication for ureteroscopy, complications were determined by retrospective review of patient hospital records.

Results: Only 3.7% of the patients were pre-stented. The majority of URS (1198, 84%) were performed for treatment of calculi. In these, overall half (49.6%) of the patients were stented postoperatively. Multiple stones were present in 45.7% of the cases and stents were used in 61% of these. When stratified by stone diameter, the stenting rate was 30% for <5mm stones; 45% for 5-10mm; 60% for 10-15mm; 80% for 16-20mm; 89.7% for 21-30mm; and 95% for stones >30mm ($p < 0.0001$, chi squared test). Stents were used in 47%, 44%, 52% and 50%, for stones in upper, mid, and lower pole, and calyceal diverticula respectively, with no difference between these locations ($p = 0.7856$, chi squared test). However, for stones in the renal pelvis, where there were greater proportion (45.4%) of larger (>15mm) stones, 71% required stenting, the stenting rate was 81% for proximal ureteric stones. Stones with density >1000 Hounsfield Units (HU) on preoperative CT scan were stented twice more frequently (62.8% vs 34.3%, $p < 0.00001$) than stones of <1000HU. Following diagnostic URS, or for management of upper urothelial tumours, stents were used in 13.4% and 18.6% of cases respectively.

Conclusions: Our experience supports the judicious use of ureteral stents. The highest stenting rates were for renal pelvis stones, large stones, hard stones, and stones in the proximal ureter. Pre-stenting is unnecessary, and stents can be avoided in most patients with stones less than 1cm in diameter without increase in complications.