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Postureteroscopic Lesion Scale (PULS): A new management modified organ injury scale – Results of an internal validation and video presentation of examples of application

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Introduction: Objective parameters for the classification of ureteral injuries and resulting indications for ureteral stent placement after ureteroscopy are lacking. A new classification system has been presented by the authors recently. This video includes an introduction to the PULS grading system and provides data concerning interrater reliability and validation of recommendations for postoperative ureteral stent placement. Video sequences of endoscopic ureteral passages after ureteroscopy will be shown as examples for the application of PULS.

Methods: The Postureteroscopic Lesion Scale (PULS) was applied in 435 patients undergoing ureteroscopy. Interrater reliability between three surgeons (junior resident, senior resident, and specialist) was evaluated in 112 patients. Postoperative ureteral stent placement was performed according to PULS. For follow up with ultrasonography, we assumed hydronephrosis to be an indirect sign for significant postoperative ureteral obstruction.

Results: No ureteral lesion was seen in 46.2% of patients (grade 0). A grade 1, 2, or 3 lesion was seen in 30.8%, 19.1%, and 3.9% of patients, respectively. No grade 4 or 5 lesions were observed. Interrater reliability was high (Kendall W= 0.91; mean Spearman Rho = 0.86). All patients with documented lesions had a DJ stent placed. Indwelling time varied according to PULS. In a follow up examination no patient showed clinical or sonographic signs of upper urinary tract obstruction.

Conclusions: According to this internal validation, interrater reliability of PULS is high. An international multicentre validation is currently under way. Standardized empiric recommendations for the use and duration of postoperative stent placement after ureteroscopy might be useful in guiding urologists in this conversely discussed issue, ultimately preventing ureteral strictures as a late complication of ureteroscopy. These will have to be confirmed, however, by controlled trials in the future.