

SC102	Holmium laser lithotripsy enhanced by Moses™ technology in percutaneous nephrolithotomy: preliminary results from a comparative study
SC103	3D renal modeling in order to improve the percutaneous nephrolithotripsy

### SC82 Flexible ureteroscopy in extreme elderly patients (80 years of age and older)

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**Introduction:** Urolithiasis is an increasing disorder affecting all age groups. There is no standardized treatment for extreme elderly patients whose surgical management always raises questions about safety. The aim of this study was to compare the safety and efficacy of retrograde intrarenal surgery (RIRS) in patients  $\geq 80$  years to a younger population.

**Materials and methods:** We retrospectively compared the data from all patients  $\geq 80$  years of age undergoing RIRS at two different Spanish university hospitals, with the data of a control group of randomly selected patients from 18 and  $< 80$  years. Perioperative outcomes, complications and emergency department visits within 30 days of the surgical procedures were compared between the two groups.

**Results:** A total of 173 patients underwent RIRS with holmium laser lithotripsy. Mean age was 44 (27–79) and 81 years old (80–94), for younger and elderly group respectively. Elderly patients had higher American Society of Anesthesiologists score ( $\geq 3$ ) (28.6% vs 75.8%;  $p = 0.0001$ ) and Charlson comorbidity index (1.99 vs 7.86;  $p = 0.0001$ ), more diabetes ( $p = 0.006$ ) and respiratory comorbidities ( $p = 0.002$ ). No statistical difference was found between the groups in stones size ( $p = 0.614$ ) and number ( $p = 0.152$ ). Operative time (74.48 vs 102.96 min;  $p = 0.0001$ ) and duration of hospitalisation (1.7 vs 2.9 days;  $p = 0.001$ ) were longer for the elderly. Intraoperative complication rate did not show differences between the two groups ( $p = 0.166$ ), only Grade 1 ureteral wall injuries occurred. Postoperative complications rates were similar between the groups (7.7% vs 9.5%;  $p = 0.682$ ). In younger group, five patients developed fever treated pharmacologically (Clavien II) and one patient experienced stent migration treated with stent re-placement (Clavien IIIa). Among the elderly, seven patients developed fever treated pharmacologically (Clavien II); one patient received a blood transfusion for anemia (Clavien II) and one case presented haematuria resolved with bladder irrigation (Clavien I). The stone free rate was 67.5% in the younger group and 71.4% in the elderly group ( $p = 0.584$ ). No difference was seen in stone recurrence ( $p = 0.73$ ). A higher rate of visits to the emergency department at 30 days after surgery was found in younger cohort (23.6% vs 11.6%;  $p = 0.046$ ), mostly due to stent-related symptoms.

**Conclusions:** Although patients  $\geq 80$  years old were significantly more comorbid than younger ones, RIRS was a safe procedure with similar outcomes and complication rates at an expense of higher operative time and hospital stay. Younger patients visited more the emergency department due to double J stent morbidity.

### SC83 External validation of nephrolithometric nomograms in patients treated with minimally invasive percutaneous nephrolithotomy: a multicentric prospective study

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**Introduction:** Minimally invasive percutaneous nephrolithotomies (PNL) are associated with lower complication rates (CR), stone free rates (SFR) and operative times are still debated. In the last decade, nomograms have been introduced to estimate the SFRs and CR of PNLs. However, no data are available regarding their reliability in case of utilization of miniaturized devices. Herein we present a prospective multicentric study to evaluate reliability of Guy's Stone Score (GSS), S.T. O.N.E. nephrolithometry Score and CROES Score in patients treated with minimally invasive PNLs.

**Materials and methods:** We included 222 patients, the AUC of GSS, S.T.O.N.E. and CROES were 0.69 (95% CI 0.61–0.78), 0.64 (0.56–0.73) and 0.62 (0.52–0.71) respectively. At multivariate binomial logistic regression, only the GSS had significance with an OR 0.54 (95% CI 0.31–0.93,  $p = 0.03$ ). We didn't find significant correlation with complications, with only a trend for GSS (OR 1.44, 95% CI 0.95–2.18,  $p = 0.08$ ).

**Results:** This is the first study evaluating nomograms in miniaturized PNLs. They still shows good reliability, however, our data show lower performances compared to standard PNLs. We emphasize the need of further studies to confirm this trend. A dedicated nomogram for minimally invasive PNLs may be necessary.

**Conclusions:** Although patients  $\geq 80$  years old were significantly more comorbid than younger ones, RIRS was a safe procedure with similar outcomes and complication rates at an expense of higher operative time and hospital stay. Younger patients visited more the emergency department due to double J stent morbidity.

### SC84 Radiation exposure during endoscopic procedures to treat urinary tract stones: impact of patients' and stones' characteristics

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**Introduction:** Several endoscopic procedures, such as ureterorenoscopy (URS), retrograde intrarenal surgery (RIRS) or bladder endoscopic lithotripsy (ELT) may require X-ray use or guidance. Modern endoscopy techniques and equipments have greatly reduced both staff and patient intra-operative exposure to ionizing radiations. However, dose absorption has not been zeroed, and further patients' exposure (i. e. repeated procedures; follow-up imaging) should be taken into account. We sought: to describe radiation exposure (RE) by type of procedure, patients' and stones' characteristics; to identify any potential predictors of increased risk of RE.

**Materials and methods:** We retrospectively identified 126 patients with complete baseline, pathologic and follow-up data which underwent endoscopic procedures (URS, RIRS, ELT and any possible combinations) for urinary tract stones between 11/2017 and 04/2020