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Introduction & Objectives: To evaluate the safety and efficiency of flexible ureteroscopy (fURS) in the management of renal calculi larger than 20 mm.

Materials & Methods: A total of 92 cases with renal calculi were managed with fURS and divided into two groups depending on the size of the stones <20 mm and >20 mm (Group 1 and Group 2, respectively). Treatment related parameters besides follow-up data were comparatively evaluated in both groups for success, complication rates, hospitalization period and need for auxiliary procedures with an emphasis on the rate of infections. Additionally, success rates were also compared according to location of the stone in each group.

	Group 1(<20mm)	Group 2(>20mm)	Total	P value
Number of patients(%)	47.75(44)	52.37(48)	100(92)	
Average age (years)	47.75	52.37	50.16(20-87)	0.133
Male/female(%)	25/19	33/15	58/34	0.236
Mean stone size (mm)	13.13	22.18	17.85(7-29)	0.001
Stone laterality				
Right/left(%)	25/19	18/30	43/49	0.064
Stone location				0.209
Renal Pelvis	30(68.2%)	24(50%)	54(58.7%)	
Upper/Middle Pole	6(13.6%)	10(20.8%)	16(17.4%)	
Lower Pole	8(18.2%)	14(29.2%)	22(23.9%)	

Results: Overall success rates after 3 months showed that stone-free rates in both groups were 84.1% (< 20 mm) and 58.33% (> 20 mm) respectively (p=0.008). While the success rates of upper/mid pole (100% vs %80) and pelvis stones (83.3% vs 75%) showed no statistically significant difference (p=0,5 and p=0,51 respectively) this rate for stones located in lower pole position between the two groups were 75% vs 14.28% respectively (p=0.008). As a highly important parameter, the rate of infectious complications was significantly higher in cases undergoing fURS for relatively larger stones (22.9%) when compared with smaller calculi (6.8%) (p=0,032). Lastly, while evaluation of the overall complication rates showed no complication in Group 1 cases;2 cases (4.1%) did reveal ureteral stricture.

	Group 1(<20mm)	Group 2(>20mm)	P value
Mean hospitalization(day)	1.43	1,75	0.281
Operation time > 60 minutes(%)	6.8(3/44)	54.2(26/48)	0.001
Postoperative emergency admission(%)	13.6(6/44)	20.8(10/48)	0.363
JJ stent removal time(day)	35.77	44.68	0.001
Postoperative urinary tract infection(%)	6.8(3/44)	22.9(11/48)	0.032
Auxiliary procedures(%)	15.9(7/44)	37.5(18/48)	0.020
Postoperative complication (%)	0	4.1(2/48)	0.495
Stone free rates(%)			0.510
Renal Pelvis	83.3(25/30)	75(18/24)	0.500
Upper/Mid Pole	100(6/6)	80(8/10)	0.008
Lower Pole	75(6/8)	14.28(2/14)	0.007
TOTAL	84.1(37/44)	58.33(28/48)	

Conclusions: Despite the relatively lower stone free rates in lower pole stones, our results indicate that fURS can be an effective and safe treatment modality alternative to PNL in larger renal stones (> 20 mm) located in the pelvis and upper part calyceal system of the involved kidney.