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MP22-02 THE EFFECT OF SMALLER RESIDUAL STONES AFTER MINIMAL INVASIVE ENDOUROLOGY PROCEDURES FOR RENAL STONES: PROSPECTIVE STUDY.

Institution and authors

- **THE EFFECT OF SMALLER RESIDUAL STONES AFTER MINIMAL INVASIVE ENDOUROLOGY PROCEDURES FOR RENAL STONES: PROSPECTIVE STUDY.**

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- **OBJECTIVE:** There is lack of agreement regarding follow up of residual stones. These fragments might cause complications. We wanted to evaluate the natural course followed by residual stones after percutaneous nephrolithotomy (PCNL) or flexible ureterorenoscopy (F-URS/RIRS) procedures for treatment of kidney calculi.

- **METHODS:** Patients prospective follow-up after elective PCNL and URS for treatment of kidney stones. The presence and features of residual fragments was followed on radiologic scans and the frequency of revisiting hospital for complications or the necessity of additional procedures were sorted out.

- **RESULTS:** The overall stone-free rate was 76.3% in F-URS and 67.7% in PCNL. The natural history of 257 patients having residual stone fragments was followed. There was spontaneous passage of these fragments in 13.4% (34) of cases. While 18.2% (47 patients) developed pain or colicky symptoms, 10.5% (26 patients) had complications such as readmission for pain, fever and Urinary tract infection. Total of the 257 patients followed, 16.7% (43 subjects) needed a next surgical procedure. The residual stones larger than 4mm had more complications ($p<0.003$) ,more recurrence of pain symptoms ($p=0.04$) and need for additional surgeries ($p<0.002$), as compared to the stones of smaller than 4mm in size. Multiplicity of the residual fragments even less than 4 mm were more prone to the complications. Size and number of the residual fragments and the multi-calicial distribution were strong predictors of the development of new symptoms and the need of surgical re-intervention. ($p=0.04$).

- **CONCLUSIONS:** Size , number of stone fragments and poles involved have role in these complications. More multicenter prospective studies are needed in this regard.

Tables and discussion

variables	Spontaneous passage	Pain symptoms	Re-admissions	Additional procedure	Residual Stone score Criteria
Residual stones <4mm	23(67.6%)	14(29.7)	5(19.4%)	5(11.6%)	<4mm=0
Residual stones >4mm	11(32.3%)	33(70.2%)	21(80.7%)	38(88.3%)	>4mm=1
Number of residual stones	Single(69.8 %)	19(40.4%)	9(34.6%)	11(25.5%)	One fragment=0
	Multi(30.2 %)	28(59.5%)	17(65.3%)	32(74.4%)	> One fragment=1
Locations residual stones	Lower(9.3 %)	3(6.3%)	2(7.6%)	6(13.9%)	Lower pole=0
	Other(91.7 %)	44(93.6%)	24(92.3%)	37(86%)	Other pole=1

Table 1 (Outcomes of residual stones based on categorization of size, location and numbers)

Residual Stone score	Additional procedure	P-value
0	0%	<0.04
1	7(16.2%)	
2	15(34.8%)	
3	21(48.8%)	

Table 2 (Additional procedures based on scoring system)

Discussion: **1**. In recent study only 20% of patients who had post operative CT scan for residual fragments were analyzed. use of imaging studies other than CT scan during the follow-up might have biased their results.((Olvera et al.2016).

2. The significant heterogeneity of recurrence definitions and wide range of recurrence hinders comparison between clinical trials. Having more consistent definitions and terminology for describing and discussing kidney stone recurrence may aid advances in this field. (Matthew et al 2019).

Take home message!!

We need to find scoring system to standardize the fragment outcomes in different centers.

Secondly not all patients should undergo CT scan for follow up after endourology procedures.

Thirdly, clinical scenarios should also be categorized after PCNL/RIRS to decide as to whom should have CT scan in follow up.

THANKS