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Introduction & Objectives: To observe efficacy and safety of different Amplatz sheath sizes used in pediatric PCNL.

Materials & Methods: Three hundred and twenty six patients' data reviewed retrospectively between January 2016 to January 2019. The patients were divided into 2 groups based on Amplatz sheath size i.e. Group A from 12 to 18 Fr 100 patients (30.67%) and Group B from 20 to 22 Fr 218 patients (69.33%). Both groups were compared in terms of pre- and post-operative mean hemoglobin and stone clearance.

Demographic characteristics of patients		
Variables	Group A (12-18 Fr)	Group B (20-22 Fr)
Patients (n)	100	218
Age (years)	6.3 ± 4.2	7.37 ± 4.4
Male : Female	71 : 29	143 : 75
Stone Diameter (cm)	1.62 ± 0.68	1.73 ± 0.64

Results: Preoperative hemoglobin and stone size were similar in all groups. Postoperative mean hemoglobin difference was significantly lower in patients who were treated with a larger Amplatz sheath when compared to a smaller size ($p < 0.05$). Thirteen patients presented with postoperative infection i.e. 3 (3 %) and 10 (4.5%) patients in Group A and B respectively. 47 patients presented required blood transfusion i.e. 8 (8%) and 39 (17.8%) patients in Group A and B respectively. Residual stone was observed in 37 overall and group breakup showed 1 (1%) and 36 (16.5%) Group A and B respectively, that was significantly lower in group in which smaller Amplatz sheath was used ($p = 0.035$).

Perioperative Findings		
Variables	Group A (12-18 Fr)	Group B (20-22 Fr)
Pre-op Hemoglobin	13.02 ± 1.78	13.95 ± 1.92
Post-operative Hemoglobin	12.20 ± 1.82	11.83 ± 1.76
Hemoglobin Difference	0.68 ± 0.5	1.35 ± 1.28
Transfusion needed (n)	8	39
Stone Clearance (n, %)	1 (1%)	36 (16.5%)

Complications

	Group A (12-18 Fr)	Group B (20-22 Fr)
Fever	16.60%	27.10%
Urosepsis	6.60%	12.50%
Pleural Effusion	1.20%	6.20%
Chest Intubation	0.40%	8.3
Bleeding	8%	39%

Conclusions: Smaller Amplatz sheath are safe and effective in terms of post-operative hemoglobin loss and stone clearance. The smaller Amplatz Sheath size can be used in pediatric population as it results in less post-operative hemoglobin loss and better stone clearance rate.