

Table S1. Distribution of patients according to the predefined criteria for complex renal calculi.

Complex renal stone criteria	PCNL Group (n=86)	ECIRS Group (n=82)
Maximum diameter > 2 cm	57 (66.3%)	55 (67.1%)
Staghorn calculi	36 (41.9%)	32 (39.0%)
Multiple stones (≥ 2) with S.T.O.N.E. score ≥ 7	24 (27.9%)	21 (25.6%)

Note: The criteria were not mutually exclusive; individual patients could satisfy more than one criterion. Therefore, percentages do not sum to 100%.

Table S2. Sensitivity analysis using prespecified clinically relevant covariates.

Variables	P	OR (95%CI)
ECIRS (vs PCNL)	0.010	0.39 (0.19 ~ 0.80)
Age	0.027	1.04 (1.01 ~ 1.07)
BMI	0.073	1.08 (0.99 ~ 1.18)
S.T.O.N.E. score	0.020	1.53 (1.07 ~ 2.18)
Operative time	0.046	1.13 (1.01 ~ 1.27)
Stone Side (Left vs Right)	0.470	1.30 (0.64 ~ 2.68)
Complications (Yes vs No)	0.043	2.14 (1.03 ~ 4.45)

Table S3. STROBE checklist for the reporting of retrospective cohort study.

	Item No	Recommendation	Page and line number
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract (b) Provide in the abstract an informative and balanced summary of what was done and what was found	Page 1, Lines 1-17 Page 2, Lines 31-36
Background/rationale	2	Introduction Explain the scientific background and rationale for the investigation being reported	Page 3, Lines 60-85
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 3-4, Lines 87-91
Study design	4	Methods Present key elements of study design early in the paper	Page 4-5, Lines 93-117
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 4, Lines 93-95
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	Page 4-5, Lines 97-107
Variables	7	(b) For matched studies, give matching criteria and number of exposed and unexposed Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	N/A Page 9-11, Lines 206-236
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Page 6-11, Lines 93 - 236
Bias	9	Describe any efforts to address potential sources of bias	Page 14-15, Lines 295-311
Study size	10	Explain how the study size was arrived at	Page 4-5, Lines 93-117
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why (a) Describe all statistical methods, including those used to control for confounding (b) Describe any methods used to examine subgroups and interactions	Page 10, Lines 238-243 Page 10, Lines 238-247 N/A
Statistical methods	12	(c) Explain how missing data were addressed (d) If applicable, explain how loss to follow-up was addressed (e) Describe any sensitivity analyses	Page 4, Lines 109 - 111 Page 4, Lines 107-108 Page 10, Lines 243-245
Participants	13*	Results (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram	Page 5, Figure 1; Page 10, Lines 250-251 Page 5, Figure 1 Page 5, Figure 1
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Page 10, Lines 251-255

	Item No	Recommendation	Page and line number
		(b) Indicate number of participants with missing data for each variable of interest	Page 5, Figure 1
		(c) Summarise follow-up time (eg, average and total amount)	N/A
Outcome data	15*	Report numbers of outcome events or summary measures over time	Page 11, Table 1
		(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Page 15, Table 4
Main results	16	(b) Report category boundaries when continuous variables were categorized	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Supplementary Table S2
Key results	18	Discussion Summarise key results with reference to study objectives	Page 16-17, Lines 333-379
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 17-19, Lines 380-402
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Page 18-19, Lines 402-415
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 16, Lines 333-345; Page 18-19, Lines 402-415
Funding	22	Other information Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 19, Lines 426-434