

STROBE Checklist — Cohort Study

Ultrasound-Alone Versus Combined Ultrasound-and-Fluoroscopy-Guided PCD for Loculated Pleural Effusion: A Comparative Study of Reintervention Rates

Section/Topic	Item	Recommendation	Reported?	Location in Manuscript
Title and Abstract	1	(a) Indicate the study's design with a commonly used term in the title or abstract (b) Provide in the abstract an informative and balanced summary of what was done and what was found	Yes	Title includes 'Comparative Study'; Abstract structured with Background/Methods/Results/Conclusions
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Yes	Introduction paragraphs 1–2; cites Light 2002, Dariushnia 2020, Rafiq 2020
Objectives	3	State specific objectives, including any prespecified hypotheses	Yes	Introduction paragraph 3: reintervention rate comparison; hypothesis stated
Study design	4	Present key elements of study design early in the paper	Yes	Methods 2.1: 'retrospective cohort study'
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Yes	Methods 2.1: single tertiary-care center; Jan 2024–Dec 2025
Participants	6	(a) Cohort study — give the eligibility criteria, and the sources and methods of selection of participants; describe methods of follow-up (b) For matched studies, give matching criteria and number of exposed and unexposed	Yes	Methods 2.2: inclusion/exclusion criteria, operator-based assignment; n=118 and n=72; Figure 1 flowchart
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers; give diagnostic criteria, if applicable	Yes	Methods 2.3–2.4: catheter guidance modality (exposure), reintervention (primary outcome), covariates listed in 2.5
Data sources/measurement	8	For each variable of interest, give sources of data and details of methods of assessment; describe comparability of assessment methods if there is more than one group	Yes	Methods 2.3: US and fluoroscopy procedures described; 2.3: interobserver agreement kappa reported
Bias	9	Describe any efforts to address potential sources of bias	Yes	Methods 2.5: PSM and multivariable regression; Discussion P3: operator experience confounding discussed
Study size	10	Explain how the study size was arrived at	Partial	Results 3.1: consecutive eligible episodes reported; no formal sample size calculation (retrospective)
Quantitative variables	11	Explain how quantitative variables were handled in the analyses; if applicable, describe which groupings were chosen and why	Yes	Methods 2.5: continuous variables as medians/IQR; categorical groupings defined in 2.3–2.4
Statistical methods (a)	12a	Describe all statistical methods, including those used to control for confounding	Yes	Methods 2.5: Mann-Whitney, Fisher's exact, log-normal RR, logistic regression, PSM (MatchIt), Cox PH, R 4.6.0
Statistical methods (b)	12b	Describe any methods used to examine subgroups and interactions	Yes	Methods 2.5 / Discussion P4: subgroup effects acknowledged; formal interaction not tested (acknowledged in P5)
Statistical methods (c)	12c	Explain how missing data were addressed	Yes	Methods 2.5: complete-case analysis; laboratory variables excluded from primary regression models
Statistical methods (d)	12d	If applicable, explain how loss to follow-up was addressed	Yes	Methods 2.5 / Discussion P5: censoring at max follow-up (38 days); informative censoring limitation acknowledged
Statistical methods	12e	Describe any sensitivity analyses	Partial	No formal sensitivity analysis; borderline

(e)				Cox result interpreted contextually in Discussion P5
Participants	13	(a) Report numbers of individuals at each stage of study — numbers potentially eligible, examined for eligibility, confirmed eligible, included, completing follow-up, analysed (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram	Yes	Results 3.1: 948 screened → 758 excluded → 190 included; Figure 1 STROBE flowchart
Descriptive data	14	(a) Give characteristics of study participants and information on exposures and potential confounders (b) Indicate number of participants with missing data for each variable of interest (c) Summarise follow-up time	Yes	Results 3.1: Table 1 baseline characteristics; missing values noted in Table 1 footnote; follow-up censored at 38 days
Outcome data	15	Report numbers of outcome events or summary measures over time	Yes	Results 3.2: 42/118 vs 13/72; Table 2 reintervention types; Results 3.3: time to reintervention
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Yes	Results 3.2: RR 0.51 (95% CI 0.29-0.88); Results 3.4: aOR 0.42, PSM McNemar p=0.046, aHR 0.50; Tables 3A/3B/3C
Other analyses	17	Report other analyses done — e.g., analyses of subgroups and interactions, and sensitivity analyses	Partial	Results 3.3: Kaplan-Meier + log-rank; Results 3.4: three adjusted analyses presented; no separate sensitivity analysis
Key results	18	Summarise key results with reference to study objectives	Yes	Discussion P1
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	Yes	Discussion P5: retrospective design, small US+Fluoro group, unmeasured confounders, censoring
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, and results from similar studies	Yes	Discussion P2–P4: mechanism, prior literature, operator confounding, clinical implications
Generalisability	21	Discuss the generalisability (external validity) of the study results	Yes	Discussion P5: single-center, operator-based allocation; P6 Conclusion notes prospective studies needed
Funding	22	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	Yes	Funding section: 'This research received no external funding.'

Reporting status: Yes = fully reported | Partial = partially addressed | No = not reported. STROBE = Strengthening the Reporting of Observational Studies in Epidemiology.