STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	*(a)* Indicate the study's design with a commonly used term in the title or the abstract **Single center experience**
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found **This method was employed in 263 operations in our department from June 2021 to December 2022. All operations were performed by the same team of joint reconstruction surgeons, employing a typical posterior hip approach technique. The types of acetabular shells implanted were: the Dynasty® acetabular cup system (MicroPort Orthopedics, Shanghai, China) and the R3® acetabular system (Smith & Nephew, Watford, UK), which both feature cementless press-fit design.** **Results: The mean value of all cases was calculated and collated with each other. We distinguished as oversized an implanted acetabular shell when its size was >2 mm larger than the size of the ASIR or when the implanted shell was larger than 4 mm compared to the preoperative planned cup. The median size of the implanted acetabular shell was 52 (48–54) mm, whereas the median size of the preoperatively planned cup was 50 (48–56) mm, and the median size of the ASIR was 52 (50–54) mm (Table 1). The correlation coefficient between ASIR size and implanted acetabular component size exhibited a high positive correlation with r=0.719 (p<0.001). Contrariwise, intraoperative ASIR measurements precisely predicted the implanted cups' size or differed by only one size (2 mm) in 245 cases.**
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported **Selecting the optimal size of components is crucial when performing a primary total hip arthroplasty. Implanting the accurate size of the acetabular component can occasionally be exacting, chiefly for surgeons with little experience, whilst the complications of imprecise acetabular sizing or over-reaming can be potentially devastating.**
Objectives	3	State specific objectives, including any prespecified hypotheses **This paper aims to assist clinicians intraoperatively with a simple and repeatable tip in elucidating the ambivalence when determining the proper acetabular component size is not straightforwardly achieved, specifically when surgeons are inexperienced or preoperative templating is unavailable.**
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants **Out of 345 primary THAs performed, 263 cases were included in our study that met the inclusion criteria φrom June 2021 to December 2022. The mean age of the patients was 68.1 years old (range 48-93). The majority (59%) of the patients were**

		female, whilst mean BMI was 28.3 Kg/m2
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable **The mean value of all cases was calculated and collated with each other. We distinguished as oversized an implanted acetabular shell when its size was >2 mm larger than the size of the ASIR or when the implanted shell was larger than 4 mm compared to the preoperative planned cup. The median size of the implanted acetabular shell was 52 (48–54) mm, whereas the median size of the preoperatively planned cup was 50 (48–56) mm, and the median size of the ASIR was 52 (50–54) mm (Table 1). The correlation coefficient between ASIR size and implanted acetabular component size exhibited a high positive correlation with *r* = 0.719 (p<0.001). Contrariwise, intraoperative ASIR measurements precisely predicted the implanted cups' size or differed by only one size (2 mm) in 245 cases.**
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
Bias	9	Describe any efforts to address potential sources of bias **A few limitations apply to our technical note. First of all, our study group was limited to Caucasian patients living in Southern Europe. Furthermore, this technique may not be so accurate in patients with extremely severe osteoarthritis or in atypical cases such as congenital hip dysplasia. Finally, the technique was used by surgeons of the same institution/department and the postoperative follow-up was limited to 12 months.**
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	12	*(a)* Describe all statistical methods, including those used to control for confounding **Lin's concordance correlation coefficient (CCC) was estimated in terms of statistical analysis. Also, results for Bland and Altman's limits-of-agreement (LOA) procedure are provided as the mean of the two values, minus and plus 1.96 standard deviations. CCCs between 0.60 and 0.80 are considered substantial, while coefficients greater than 0.80 are considered**

excellent. As the discrepancies between the measurements could not be assumed to be normal, the Wilcoxon Signed Rank Test was also performed to examine whether there was a significant difference between the mean values of the expected values and the radiographic measures, as well as between the mean values of the expected and controlled values. If a statistically significant difference was detected, a Wilcoxon Signed Rank Test was carried out to test if the differences were significantly different from the 1 degree. The level of statistical significance was set to 0.05.

(*b*) Describe any methods used to examine subgroups and interactions

(b) Explain how missing data were addressed

There were no missing data

(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed

Case-control study—If applicable, explain how matching of cases and controls was addressed

Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy

(*e*) Describe any sensitivity analyses

Continued on next page

Results		
Participants	13*	(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, andanalysed **263 patients primary THA**
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders **263 patients, both male and women who underwent primary THA**
		(b) Indicate number of participants with missing data for each variable of interest **No missing data**
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures
Main results	16	*(a)* Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for andwhy they were included
		(*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
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives **The mean value of all cases was calculated and collated with each other. We distinguished as oversized an implanted acetabular shell when its size was >2 mm larger than the size of the ASIR or when the implanted shell was larger than 4 mm compared to the preoperative planned cup. The median size of the implanted acetabular shell was 52 (48–54) mm, whereas the median size of the preoperatively planned cup was 50 (48–56) mm, and the median size of the ASIR was 52 (50–54) mm (Table 1). The correlation coefficient between ASIR size and implanted acetabular component size exhibited a high positive correlation with r=0.719 (p<0.001). Contrariwise, intraoperative ASIR measurements precisely predicted the implanted cups' size or differed by only one size (2 mm) in 245 cases.**
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 **A few limitations apply to our technical note. First of all, our study group was limited to Caucasian patients living in Southern Europe. Furthermore, this technique may not be so accurate in patients with extremely severe osteoarthritis or in atypical cases such as congenital hip dysplasia. Finally, the technique was used by surgeons of the same institution/department and the postoperative follow-up was limited to 12 months.**
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	21	Discuss the generalisability (external validity) of the study results

Other information		
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

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.