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

	Item No.	Recommendation	Page No.	Relevant text from manuscript
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1	"a nation-wide register-based study"
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1	OK
Introduction				
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4	"It remains unclear whether the advancements reported from specialized centers are applicable nationwide or in broader contexts"
Objectives	3	State specific objectives, including any prespecified hypotheses	4	"The objectives of this nationwide register-based study were to report incidence rates and survival after surgery for spinal metastases. Furthermore, incidence rates and predicted survival for the most common primary cancer diagnoses associated with spine metastasis were determined."
Methods				
Study design	4	Present key elements of study design early in the paper	1	**a nation-wide register-based study between 1997 and 2020 from Finland**
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5-6	Materials and methods: Study design and Sample formation

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	5-6	Materials and methods: Sample formation
		(*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	5-6	Diagnosis and procedural codes, dates of surgeries, dates of deaths were determined as explained in the text.
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	5	Please see Methods: Study design for data sources.
Bias	9	Describe any efforts to address potential sources of bias	Supplemental table 2	After initial data extraction, potential included disc herniation and spondylosis surgeries were excluded based on specific exclusion criteria
Study size	10	Explain how the study size was arrived at	5	All surgeries between 1997 and 2020 were included (The most reliable data was available from 1997 onward, and cancer data was finished for the year 2020.)

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Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6	Please see the Statistics paragraph.
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	6	Please see the Statistics paragraph.
		(*b*) Describe any methods used to examine subgroups and interactions	6	"Subgroup analyses were conducted to evaluate incidence rates stratified by age, type of surgery, and underlying disease."
		(*c*) Explain how missing data were addressed	6	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	11	Potential emigrants after spine surgery were lost. This is discussed in the Limitations.
		(*e*) Describe any sensitivity analyses	-	-
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, and analysed		Please see the study flowchart in Figure 1.
		(b) Give reasons for non-participation at each stage		-
		(c) Consider use of a flow diagram		Figure 1.
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	7	"The median age at first surgery was 64.6 years (IQR, 56.1–73.6), and 58% of the patients were men. The most common primary cancer diagnoses during the study period were prostate cancer (n = 300, 15.1%), breast cancer (n = 231, 11.6%), and myeloma (n = 211, 10.6%). The distribution of primary cancer diagnoses in the "other" group is shown in Table 3."
		(b) Indicate number of participants with missing data for each variable of interest		NA

		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	8	In this setting, survival is the relevant measure of follow-up.
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	*7,8*	No of surgeries, and postoperative survival were reported.
		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 and why they were included	6,7,8	Unadjusted surgery rates were reported. Incidence rates were reported per 100.000 inhabitants (adjusted for sex- and 10-year age distribution of the Finnish population).
		(*b*) Report category boundaries when continuous variables were categorized	6,7,8	Ages were stratified into ten-year cohorts, except for <40 and >80 (e.g., Figure 3)
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period		NA

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Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7-9	All subgroup analyses are reported in Results.
Discussion				
Key results	18	Summarise key results with reference to study objectives	9	"In the present nationwide, register-based study, a significant increase in surgery for metastatic spine disease was observed between 1997–2020, while the estimated survival after surgery remained stable."
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	11	Please see the Limitations paragraph.
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	9-12	Please see Discussion and Conclusions
Generalisability	21	Discuss the generalisability (external validity) of the study results	11	"Although not directly generalizable to other countries, the present nationwide data provide unique perspectives on spinal metastasis surgery, highlighting potential treatment gaps that may not be visible in reports from specialized centers."
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	7	"This study received funding from State funding for university-level health research, Tampere University Hospital, Wellbeing services county of Pirkanmaa."

*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.