

From Case Report to Scientific Publication: Essential Steps

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ABSTRACT

Case Reports represent a valuable tool for documenting unusual clinical scenarios and contributing to continuing professional development within the medical community. They are a compilation of detailed information about a patient of particular interest (interesting, novel, and/or challenging), with a message for clinical practice. In Internal Medicine, they are commonly presented during grand rounds or at medical congresses. However, turning a single clinical case into a publication requires essential steps to ensure scientific quality. Preparing a case report can be a rich learning experience, especially for medical students, residents, and/or early-career researchers. They serve as an initial challenge in academic writing, allowing one to become familiar with all aspects of publication (e.g., guidelines, peer review, consent). This article aims to give practical, literature-based recommendations to guide the successful development of a case report.

Keywords: research, publication formats, case reports [publication type], ethics in scientific publishing, continuing medical education, internship and residency.

El camino del caso clínico a la publicación científica: pasos esenciales

RESUMEN

Los reportes de casos representan una valiosa herramienta para documentar escenarios clínicos inusuales y contribuir a la formación profesional continua en la comunidad médica. Son una recopilación de información detallada sobre un paciente, de particular interés (interesante, novedoso, y/o desafiante), con un mensaje para la práctica asistencial. En Clínica Médica, se trata de una presentación habitual en Ateneos o Congresos. Sin embargo, el proceso de transformar un único caso clínico en una publicación requiere una serie de pasos fundamentales que garanticen la calidad científica. Su elaboración puede ser una gran experiencia de aprendizaje, especialmente para estudiantes de Medicina, residentes y/o investigadores jóvenes. Sirven como desafío inicial en la escritura académica y permiten familiarizarse con todos los aspectos de la publicación (p. ej., normas, revisión de pares, consentimiento). El propósito del presente artículo es ofrecer recomendaciones prácticas y fundamentadas en la literatura, que guíen su construcción hacia el éxito.

Palabras clave: investigación, formatos de publicación, informes de casos [tipo de publicación], ética en la publicación científica, educación médica continua, internado y residencia.

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WHAT IS A CASE REPORT (CR)?

It involves the collection of detailed and relevant information about the clinical case of a specific patient, chosen for its interest, novelty, and/or the challenges it presents to clinical practice, as well as for the valuable insights it offers to the medical community¹. In this type of study/design/report/paper, researchers observe and record phenomena as they occur in routine clinical practice (without intervening for research purposes) and then describe the clinical, diagnostic, and/or treatment characteristics of unusual diseases or atypical presentations of known diseases².

Although they have known methodological limitations –such as limited external validity and the inability to establish a causal relationship between intervention/exposure and outcome– they have great educational value.

WHAT IS THE DIFFERENCE BETWEEN A CASE REPORT AND A CASE SERIES?

The main difference lies in the number of patients and the focus of the analysis. A case report provides a detailed description of a single, isolated clinical case, with the primary goal of sharing experiences that may contribute to knowledge or generate hypotheses. In contrast, a case series includes at least two or more individuals who share common characteristics (e.g., the presentation of a rare disease or response to a specific treatment), thus allowing the identification of patterns or trends. Both types of publications are valuable in the biomedical literature, especially for emerging or understudied topics.

WHAT IS THE PURPOSE OF A CASE REPORT?

Writing a case report can provide a valuable learning experience in research, especially for medical students, residents, and/or early-career researchers (in training). Case reports are highly valuable educational tools for professional development, as they promote skills such as observation (e.g., identifying unique or relevant aspects), clinical reasoning, scientific communication and dissemination, and community engagement (e.g., practicing oral presentations)³.

Presenting case reports is a common practice in academic and scientific settings, such as clinical conferences or specialized congresses⁴. However, turning a single clinical case into a publication requires a series of essential steps to ensure scientific quality.

This article aims to provide practical, evidence-based recommendations to guide the development of a case report toward successful publication.

BASIC RECOMMENDATIONS

A useful case report should be feasible, concise, logically organized, clearly presented, and easily readable. It is an excellent resource for describing unusual syndromes, associations, reactions, and/or treatments⁵. Originality and clinical relevance are the main strengths by which it is judged. Therefore, defining the educational message and identifying the appropriate audience are key

elements in the writing process⁶. The essential steps for preparing a case report are:

- A. Select a relevant case.
- B. Obtain informed consent.
- C. Conduct an adequate and up-to-date literature review (to support its originality and relevance).
- D. Follow a clear structure—for example: description, discussion, and conclusion.
- E. Review the submission guidelines of the target journal. For example, the CARE checklist (CAse REport Guidelines).
- F. Include relevant images (if applicable).
- G. Review grammar, clarity, and coherence.
- H. Request feedback from colleagues and mentors before submission.

The first step is to ensure that the clinical case justifies publication. Reasons for writing a case report may include⁷:

- it presents unusual or clinically puzzling features
- it helps clarify a new or poorly understood syndrome
- it illustrates a favorable or unexpected adverse effect of a drug or a previously unreported causal relationship

Before beginning the writing process, it is essential to conduct a thorough literature review, ideally using various academic databases (e.g., PubMed, Scopus, Web of Science, or SciELO), to identify the current state of knowledge and existing gaps related to the topic to be addressed⁸.

When structuring the manuscript, it is advisable to organize it into sections. We recommend to include an introduction, followed by a case description, a discussion, and a conclusion. A variable number of tables, graphs, and/or illustrations may also be supplied as specified in each journal author guidelines⁹.

The Introduction should offer contextual information about the patient's medical condition. If relevant, include data on the incidence and/or prevalence of the disease, etiology, differential diagnoses, current treatments, and other data. Any uncommon terms that require definition should be added. All information presented here must be properly cited.

In the “case description,” it is recommended to present the patient's clinical condition, providing brief and relevant information about personal and/or family history, reason for consultation, symptoms, signs found on physical examination, and the results of complementary studies (including laboratory tests, imaging, and/or pathological anatomy). Differential diagnoses and treatments implemented (both medical and surgical) should be included. Be sure to describe the patient's subsequent clinical course and their condition at the time of writing the article. Aim to be objective when describing both clinical findings and complementary studies. When referring to medications, specify the drug and its dosage without including brand names¹⁰.

In the “discussion,” the main characteristics of the case report should be highlighted, along with its significance and the new knowledge it contributes to the topic. It

is important to analyze the relationship of the case to previously published evidence, either to corroborate existing findings or to identify possible discrepancies that contribute to a better understanding of the phenomenon under study. All references must be appropriately cited.

Finally, illustrations are a valuable asset that enhance the manuscript's visual appeal and educational impact; therefore, their inclusion is encouraged whenever feasible. Likewise, tables and figures should be designed clearly and simply to aid in data interpretation. They must be self-explanatory and not depend on the main text for understanding. They should be understandable on their own without relying on the accompanying text.

Whenever possible, it is advisable to seek guidance from an experienced mentor who can offer advice on case selection, report writing, and identifying a suitable target journal for publication¹¹. Lastly, it is essential to focus on the quality of the writing, including spelling and language use. If the manuscript is to be written in English, seeking support is advised to ensure clarity, precision, and fluency^{12,13}.

ETHICAL CONSIDERATIONS

Case reports involve important ethical implications, as they contain sensitive health information about individual patients; when dealing with rare conditions or uncommon pathologies¹⁴, the individuals involved may be easily identifiable. Cases that could expose the patient to stigma, discrimination, or psychological, social, and/or economic harm should be avoided. Additionally, it is crucial to remove names, specific dates, and identification numbers to ensure patient confidentiality (e.g., national ID number, institutional registration number, medical record number, date of birth, among other data).

This type of publication is typically classified as an observational and retrospective study, which involves no more than minimal risk to patients. However, due to all the above, the information must comply with current national and international ethical standards, including the Declaration of Helsinki, Law 25326 (Habeas Data), and HIPAA regulations (Health Insurance Portability and Accountability Act).

Finally, it is advisable to submit the report for review by an ethics committee, and written informed consent should always be obtained from all patients whose clinical cases are to be reported or from a legal representative in the event of incapacity. In Internal Medicine in particular, hospitalization is considered a "window of opportunity" for obtaining consent, especially in the case of patients who continue outpatient follow-up outside the institution or those who die (either in-hospital or out-of-hospital)¹⁵.

CONCLUSIONS

Publishing a case report can be a significant challenge, especially because many scientific journals prioritize studies with higher levels of evidence (such as original articles, clinical trials, and systematic reviews, which typically receive a greater number of citations). Even so, case reports continue to be important for recording rare events –supporting timely clinical management– sharing novel insights that may inspire further studies, and serving as both educational tools and gateways into research. Following these writing guidelines can help ensure a comprehensive and standardized presentation of the case report, which in turn improves both its quality and its chances of editorial acceptance.

Although they should not be underestimated due to their apparent simplicity, case reports often serve as an introductory challenge to academic writing because of their relatively low complexity (e.g., short length and lower difficulty in data collection due to the small sample size). They provide an opportunity to become familiar with all aspects of the publication process, including understanding journal reporting and author guidelines, reviewing ethical standards (e.g., obtaining informed consent and ensuring data confidentiality), and experiencing peer review. Confidentiality, informed consent, and ethical review are fundamental pillars in the development of case reports.

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