Guideline on writing a case report

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Abstract

Research is an important competency that should be mastered by medical professionals. It provides an opportunity for physicians to develop numerous skills including communication, collaboration, time management, and teamwork. Case report, as a research design, describes important scientific observations that are encountered in a clinical setting to expand our knowledge base. Preparing a case report is far easier than conducting any other elaborate research design. Case report, with its main components, should be focused and delivers a clear message. In this article, the key components of a case report were described with the aim of providing guidance to novice authors to improve the quality of their reporting.

Keywords: Case report, education, guideline, publication, research, writing

INTRODUCTION

“The best teaching of medicine is that taught by the patient himself” is a famous statement by William Osler which describes the opportunities we have as physicians to learn from our encounters with patients.1 This learning experience, based on the observation of clinical cases, can be transferred to others, locally, nationally, and internationally, through communication and reporting. A case report is the first effort for many doctors, and other health professionals to convey a message to the entire medical profession by the means of specialized journal and remain essential to the art of medicine.2 The purpose of the case report is to expand our knowledge on clinical manifestation, diagnostic approach, or therapeutic alternative of a disease, ultimately, to improve the quality of care provided to our patients. A case report that is worth reading should, therefore, contain both practical and educational messages.3,4

The clinical case report has been an integral part of medical literature throughout history. The oldest example of a preserved clinical case in medical literature is a text from an ancient Egyptian papyrus dating from the 16th to the 17th dynasty, 1600 BC, addressing the management of dislocated jawbone.5 From Hippocratic case histories, “Epidemics” 400 BC, through Galenic case reports, in the second century AD, case reports were usually used to tell other doctors or colleagues about interesting cases they have encountered. Muslim scholars have reported case histories as well, particularly, Abu Bakr Mohamed Ibn Zakariya Al-Razi (865–929 AD), where he left a large collection of case reports in his 25-volume medical encyclopedia “Kitab Al-Hawi.”6

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Those case histories were not a publication but rather a documentation or a message between the medical professionals, and it is usually kept in their records. Case reports have now been developed and accepted as a scholarly publication to disseminate knowledge to a wide medical audience.

**GENERAL PRINCIPLES OF CASE REPORTS**

The case report is a research design where an unexpected or novel occurrence is described in a detailed report of findings, clinical course, and prognosis of an individual patient, which might be, but not mandatory, accompanied by a review of the literature of other reported cases. Although case reports are considered the lowest in the hierarchy of evidence-based practice in the medical literature, it provides essential information for unfamiliar events and shared individual experiences, for better understanding and optimizing patient care. This approach might generate an idea or hypothesis, but it will not be confirmed unless we conduct further confirmatory quantitative experimental or observational study designs such as clinical trials or cohort studies. Despite that, case report provides the medical community with information which cannot be picked up by any other designs. Just to name a few, in 1819, James Parkinson published a case report entitled “An essay on the shaking palsy” and lead to the discovery of Parkinson’s disease. And in 1981, a case report was published in the literature as “Preliminary communication on extensively disseminated Kaposi sarcoma in a young homosexual man” a few years later, HIV from this case report was discovered. Furthermore, in 2012, Ali Zaki reported an article in New England Journal of Medicine titled “Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia” which ultimately, lead to the discovery of Middle East Respiratory Syndrome Coronavirus. All those previous examples show how important is case report in the advancement of medical practice. The case report might be in the tail of the hierarchy of evidence-based medicine but if properly selected and appropriately reported it might stand a better chance of publication in high impact journals than even a clinical trial.

Some scientist classifies case reports as a qualitative study design, others might consider it a quantitative approach or even a mixed method design. This polarization of the case report is unfair. However, if we have to categorize it; when we consider all research approaches in medicine, it can be classified into exploratory or confirmatory; then, case reports definitely will be considered an exploratory research approach. Case report can be classified as a single case report, two case reports or case series, which aggregate more than two cases in a report. Case reports are usually retrospective by nature, however, it can be prospectively designed, for example, applying a new diagnostic or management approach or guideline of a particular health condition to discover new cases.

Cases deemed appropriate for a publication are listed in Table 1. Despite these restrictive criteria, any case report could have a reasonable chance of publication even if it was not novel, as long as it was authentic, lead to an incremental advance in medicine or carries an educational value.

**STAGES IN PREPARING A CASE REPORT**

The source of case reports is clinical setting, every single patient is a potential case report therefore, always keep an eye on unusual cases in your practice either in the ward or in the clinic. Once a potential case is identified, and the patient is in hospital, follow him through hospitalization until discharge. Give the case an appropriate time frame in the course of the disease to observe the development over time. Wait for 6 months during multiple visits, before you start writing a case report to allow adequate time to complete the clinical course.

Once you have a potential case, how would you know if this is an appropriate for reporting or not? Especially if you are

**Table 1: Criteria for published case report**

| Criteria                                                                 |
|---------------------------------------------------------------------------|
| Unreported side effects                                                   |
| Unusual side effect                                                       |
| Adverse interactions involving medications                                |
| Unexpected or unusual presentation of a disease                          |
| New associations or variations in disease process                         |
| Presentations, diagnosis, and/or management of new and emerging diseases  |
| Unexpected association between disease or symptoms                        |
| An unexpected event in the course of observing or treating a patient      |
| Findings that shed new light on the possible pathogenesis of a disease or an adverse effect |
a novice physician, once you encounter a possible case and you are suspecting if this patient fulfills one of those criteria which are described in Table 1. The first step is a high index of suspicion; keep your eyes open for every case, once you suspect a case then ask your colleagues either directly or in a group related to the same discipline, locally, to confirm that this could be a case report. The next step would be asking an expert from the national or international medical community about this case scenario, get their opinion and feedback, including the appropriateness of reporting this case. Once the feedback is positive, perform extensive literature search, through PubMed, Embase, Google Scholar, and databases for case reports to ensure that you retrieve all available information on this topic. Do not forget to look at popular case reports which are not indexed in PubMed and read through previously published case reports that will enhance your understanding of the subject and gives you a general scaffold to prepare your own report.

Once the decision was made to report this case, obtain an informed consent from the patient; otherwise, it will not be accepted for publication. Moreover, take a permission from consultant in-charge of the case before writing your report.

Once you have reviewed the literature and improved your knowledge on the topic, use the patient’s note to record the key points in history, examination findings, relevant data results and interpretation, treatment (including operational findings), and outcomes. Delete all patients’ personal information, identifiers or contact detailed from the prepared report, including the radiological or histopathological images before you copy them into your article. Save the prepared report on a password protected hospital computer.

The last step would be checking the journal which is most appropriate for your case report. Those journals provide you with the required criteria and appropriate format to prepare your report, to enhance their acceptability for publication. Many journals are interested in published case reports, but not all. In 2007, the first case report journal was created “Journal of Medical Case Reports” since then, the interest raised and many other journals dedicated for case reports were created including a specific database for all case reports are aggregated and continuously updated from several publishers.\[3\]

**FORMAT FOR WRITING A CASE REPORTS**

The word count for case report may vary from one journal to another, but generally should not exceed 1500 words, therefore, your final version of the report should be clear, concise, and focused, including only relevant information with enough details.\[3\] If a shorter version is required by the journal, then you can always edit or trim off the discussion section of your article. The general format adopted for most case reports is detailed in the following subsection and summarized as a checklist in Table 2.

**Title**

This is the most commonly read part of your article; therefore, it should be relevant, concise, informative, descriptive, and appealing enough to attract readers to your report. It is placed in the first page of the manuscript, but some journal might request you to specify a separate file from the manuscript, labeled as a “title page” file. In preparing the title, avoid unnecessary words, wordplay, double meaning, cute wording, and never uses abbreviations in the title. It is always advisable to add “case report” in your title. Beneath the title, list all authors and their affiliations on the same page including their E-mails account. Most of the case reports are not prepared by a single author, but it should not exceed more than six authors; otherwise, the journal might not accept your case report for publication. Finally, under the subsection of corresponding author, assign one author to communicate with the journal and include all details of communication, such as institutional address, E-mail, and phone numbers.

Who should be the corresponding author? Any person who will submit the article to the journal to get the feedback from the editor of the journal and should be one of the article’s authors.

**Abstract**

It is the most important part of your article as it will be freely accessible for others to read when retrieved from any medical databases during the relevant search. However, it is the last part written in your article. It should include a brief summary that gives a general idea of the content of the case report. It should not include any references or abbreviations and should not exceed 350 words, preferably <250 words. Check your journal instructions for a detailed guideline on word counts. The abstract is usually arranged into three subsections: background, case presentation, and conclusion. The background should clarify the importance of reporting such a unique case. Afterward, a brief description of the clinical scenario of the patient listing only the important details. Finally, the conclusion should be brief with lesson learned and impact on the interested group.

**Keyword**

This is quite important for indexing your article, and it should be from three to ten words, and you should be very
Introduction
In this section, the definition and brief description of the pathology, including common presentations and disease progression is discussed, explaining the background of the selected topic. Followed by a brief description of what is about to be reported and the importance of reporting such case. The content should be clear, focused, concise, and attract the reader’s attention and interest.

Case presentation
Provide a clear picture of the patient’s condition and presentation, and it is best presented in chronological order with sufficient detail and explanation. Describe the relevant demographic information of the patient censoring any details that could lead to the patient being identified. Start with the current medical condition and primary complaint with detailed history including relevant family history, occupational and social history, medication, and allergy. Findings of physical examination should be briefly reported with all relevant investigation, laboratory results and images, and its analysis. Describe the differential diagnosis and the rational of the management approach, including follow-up results and final diagnosis. Avoid any extensive interpretation or defense for the approach you took. This section can be broken up into small subsections if needed, and it should be supplemented with necessary
images and tables to facilitate reader's understanding of the case.

**Discussion**
Probably, this is an optional section, but it is preferable if reported, as it would explain more of your rational and approach with added additional relevant information about the uniqueness of this case. Compare your findings with what is known in the literature and why you think this case is different. Only discuss what is relevant to your case and do not provide any unproven and unsupported speculation. Acknowledge and explain any ambiguity or unexpected features occurred even if it is contradicting your concept. Explain how this case would contribute to the literature and suggest justifiable recommendations.

**Conclusion**
The section should include a concise and brief statement, explaining the importance and relevance of your case and it should relate to the purpose of the paper.

**Patient’s perspective**
This new section is an optional, but it adds a new dimension to your paper, as it gives the chance to patients with their own perspective to write and describe their experiences throughout the disease process. Make sure that any patient’s identifiers are removed, and his identity is managed appropriately with confidentiality, removing all irrelevant information to the case report.

**Consent**
Before submission, make sure that the patient gave his informed consent for publication, and statement indicating that should be clearly narrated in the report. You do not need to send the consent form on submission, but it should be available if requested. In case of the child, the parent or legal guardian should be consented instead, and if the child is a teenager then both patient and his parent should be consented. Many journals will not proceed with the peer review process unless a statement like “written informed consent was obtained from the patient for publication” is clearly stated. This statement could be in a separate section, as indicated here, or within the content of the report. If the patient is incapacitated or deceased, obtain the consent from the next-of-kin, and this should be stated clearly in the report. If the patient is deceased and next-of-kin is unreachable, you should exhaust all reasonable attempts to obtain the consent. If you fail, then you should state that in your report. If the patient is still alive but unreachable and you did not obtain the consent, do not bother publishing the case.[3]

**Competing of interest**
In this mandatory part, all authors should disclose any financial competing interest. If none, then, a statement like “the authors declare that they have no competing interests” should be clearly stated.

**Author contribution**
In this section, you need to credit all individuals who made a substantial contribution to the production of this study. Criteria of qualification to be an author should be strictly followed and explicitly stated for each author, separately. The first criterion is being a part of the conceptual development, data acquisition or analysis, then involvement in drafting part of the manuscript, and finally approving the final version of the manuscript. If those criteria are not fulfilled, then those individuals should be acknowledged in the next section. Be cautious from excessive authorship as this might lead to rejecting your article.

**Acknowledgment**
You need to mention and acknowledge the source of the research fund if any. Moreover, acknowledging all people who helped you, supervised you, or assisted you in finalizing this report, if they are not fulfilling the criteria to be an author.

**References**
You need to mention around 15 references if possible, and few of them should be within the past 5 years, but do not exceed more than 25 references.

**Cover letter**
This is an optional supplementary document, addressed to the editor-in-chief, in a formal letter. Explain why this report is important and why it should be published in this journal.

**JOURNAL EVALUATION FOR A CASE REPORT**
Writing a case report varies from one physician to another, depending on the expertise of the author who prepared the report. This variation is influenced by many factors ranging from the author’s knowledge base to his writing skills. The Peer review process will detect this variation to assure the quality of reporting through critical appraisal. It will assess the report, provide a valuable, supposedly constructive, feedback and helps the editor in a decision regarding the publication. This assessment should be as objective as possible to reach an unbiased decision. Therefore, several schemes were formulated to evaluate the quality of the case report. One of which is the Piersons 5-component scheme which relays on five major components, each component is scored from 0 to two, with a possible total score of 10 and lowest
score of zero. The five major components are uniqueness, documentation, interpretation, objectivity, and educational value. If the calculated score is more than 8, then this report is worth publishing. A score from 6 to 8, indicate possible publication with caution about validity. Any score <6, indicate the insufficient quality of the case report. Further details about this evaluation scheme are explained in Table 3.

CONCLUSION

Case report remains an important source of information and common method in knowledge dissemination among physicians due to its simplicity in design. It will continue providing new research ideas through hypotheses generation. Finally, as I commenced my article with William Osler, I will end by quoting his other famous statement: “Always note and record the unusual…. Publish it, place it on permanent record as a short, concise note. Such communication is always of value.”

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