CME Article

Effective Medical Writing

Pointers to getting your article published

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Writing a case report

ABSTRACT

A case report is a description of a single case with unique features. This includes a previously-unreported clinical condition, previously-unreported observation of a recognised disease, unique use of imaging or diagnostic test to reveal a disease, previously-unreported treatment in a recognised disease, or previously-unreported complication of a procedure. Case reports should be short and focused, with a limited number of figures and references. The structure of a case report usually comprises a short unstructured (or no) abstract, brief (or no) introduction, succinct but comprehensive report of the case, and to-the-point discussion.

Keywords: case report, medical writing, scientific paper

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INTRODUCTION

Reporting a rare or unusual case is probably the oldest form of medical communication. It underpins the basic observation and descriptive learning skills that all medical students acquire during their clinical clerkships and which most doctors use throughout their careers, particularly in the setting of a teaching hospital or academic medical centre. Writing a case report allows formal sharing of experiences and knowledge in the practice of medicine. It often represents the way a new disease, treatment or complication is initially communicated publicly, and collective findings from case reports may provide preliminary information for future research leading to practice of evidence-based medicine.

Although case reports are regarded by some as the lowest in the hierarchy of evidence in the medical literature, it allows for anecdotal sharing of individual experiences. In the hierarchy of evidence, higher levels of evidence are held to have a greater likelihood of reflecting the "truth" than lower levels. Evidence from randomised controlled trials is placed on top, followed by controlled trials without randomisation, other prospective experimental trials, then observational studies, case-control studies, case series, case reports; with expert opinion and consensus at the bottom.[1]

For many doctors, a case report represents the first effort at getting papers published in medical journals and because the basic methodology is similar, it is a useful exercise in learning how to write scientifically. Before embarking on writing up an interesting case, authors need to perform a thorough literature search to check if others have reported on similar cases with similar learning points. If already extensively reported, the case is probably not worth reporting. As the case report is one of the many types of papers that are published in medical journals, authors need to be aware of the specific requirements for a case report, in order to maximise the material at hand. The manuscript should also be constructed exactly according to the prescribed guidelines for the paper type for the target journal- this can usually be found in the journal's Instructions to Authors.[2]

WHAT'S WORTH REPORTING?

A case report is a description of a single case with unique features. Nowadays, it is rare for a doctor to encounter a totally original medical entity, but there are many rare or unusual conditions of patients that may merit description. This includes previously-unreported observation in a known disease, unique use of imaging or diagnostic test to reveal a disease, previously-unreported treatment in a known disease, or previously-unreported complication of a procedure. Rarity, by itself, is insufficient justification for publication. The case report should contribute new knowledge, ideally raising a new research question and leading to larger scale research; and also add value to the current understanding of a known disease, its diagnosis or management. There should also be a clear learning message for the reader.

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Although case reports may be classified into: (1) retrospective, (2) prospective, and (3) time series case reports, a more comprehensive classification divides case reports into two clusters, namely: diagnosis- and management-related.

Box 1. Classification of case reports:

1. Diagnosis-related
   a. Unusual or new disease.
   b. Unusual presentation of known disease.
   c. New methods of diagnosis.
   d. Unusual or new aetiology.
   e. Unexpected association between diseases or symptoms.
2. Management-related
   a. New or improved treatment type.
   b. New or rare side effects or complication of treatment.

Case reports on unusual or new diseases were the earliest forms of medical reports, and have appeared in other forms of writing than just medical journals. Compilation of a series of case reports often leads to recognition of disease patterns, with resultant recognition of associated or causal factors and possible treatment. Unusual presentations of a known disease are another form of case report that helps fellow doctors recognise unusual presentations of, or a previously-unreported observation in a known disease. This is particularly pertinent in the early phase of a disease process when the signs and symptoms are not obvious, enabling early diagnosis and institution of appropriate treatment. New methods of diagnosis include the unique use of imaging or a diagnostic test to reveal a disease in a particular patient.

Subtypes of case descriptions of unusual or new aetiology include known disease in an unusual season, e.g. report of a familiar disease occurring off season can raise suspicion of a new strain of pathogen; day/night variation in disease presentation; known disease found in a new geographical area, as unusual geography may raise suspicion of different aetiology; known disease not previously found in a particular ethnic group; known disease with different presentations in different ethnic groups; and findings that may shed light on pathogenesis or adverse event. Unexpected association between diseases or symptoms may be reported, particularly if it has not been previously described.

New or improved management of known diseases include use of drugs, surgery and invasive techniques. Novel approaches to therapeutics with difference in outcome also fall into this category. Reporting new or rare side effects or complications from disease or treatment aims to heighten fellow doctors' awareness to potential hazards, highlights how to avoid these side-effects or complications, and ideally, proposes steps in management of the complication upon recognition.

HOW TO REPORT A CASE

Case reports should be short and focused, with a limited number of figures and references. There are usually a restricted number of authors. The structure of a case report usually comprises a short unstructured (or no) abstract, brief (or no) introduction, report of the case, and discussion. Unlike original articles, case reports do not follow the standard IMRAD structure of manuscript organisation. As there is a wide variation in format for case reports among different journals, it is essential for authors to follow exactly the target journal's Instructions to Authors.

Box 2. Structure of a case report:

- Title
- Abstract (journal dependent)
- Introduction (journal dependent)
- Case report
- Discussion
- Acknowledgements (optional)
- References
- Illustrations (optional)

Prior to writing a case report, authors are recommended to look through recent issues of the target journal. Many journals do not publish case reports or publish only a very limited number. If the target journal accepts case reports, it is useful for authors to get an idea of the type and format of case reports that have been recently published. Reasons for non-publication or low acceptance rates of case reports by journals include space constraints (limited pages), prioritisation of cost-benefit, negative contribution to the journal impact factor, and very low citations rates compared to other paper types.[3]

The title should accurately and succinctly describe the case, and be sufficiently informative to interest the reader. Redundant words such as "case report" or "review of the literature" should be omitted. For some journals, no abstract is needed for case reports. If required, the abstract should be unstructured, and provide enough essential information for other researchers doing a database search. Abstracts for case reports are generally shorter than for other categories of papers, and are typically 100 words or less in length. Case report abstracts should include age and gender of the patient, salient clinical information,

Box 3. Common problems with case reports:

- Title includes redundant words, e.g. "case report and review of the literature".
- Case is not worth reporting - only slight variation in diagnostic or therapeutic approach.
- Therapeutic approach without strong rationale and no impact on outcome.
- Excessively long manuscript.
- Excessively complicated case.
- Lacks scientific evidence.
- No proof of diagnosis.
- No additional or incremental knowledge.
- Over-generalisation.
- Over-ambitious conclusion - not supported by evidence.

diagnosis, management and follow-up, and the take-home message.

The introduction should be short, and provide the background information on why a particular case was worth reporting. The rationale for the case report should be supported by a limited number of relevant references, including citing of any classic papers. For a new disease, a brief explanation of the disease, usual presentation and progression should be provided. For an adverse event or complication, a background of the treatment indications and previously-reported side effects or complications should be provided. For some journals, there is no Introduction section and the body of the case report starts simply with a description of the case.

In writing a case report, the order of events should be presented in chronological order, typically comprising clinical history, physical examination findings, investigative results, differential diagnosis, working diagnosis, management, follow-up and final diagnosis. Clarity is essential, especially with regard to important findings, all of which should be reported honestly. Basic background information about the patient should be provided, e.g. age, gender, occupation, ethnicity, weight and height.

The presenting signs and symptoms should be objectively described, together with the relevant past medical and family history. If the patient is female, state the number of pregnancies and their outcomes. Details of medication, laboratory and electrophysiological tests, and imaging should be provided. All important negative findings should also be included. Resist the temptation to provide the author's own interpretation or inferences in the body of a case report. Avoid embellishing with one's own additional descriptions and censor information, especially adverse outcomes.

Preserving patient confidentiality is paramount. It is essential that the patient is not identifiable from the information contained in the text of the case report. In the accompanying images, authors should make every effort to remove or conceal all identifiable features, taking particular care with the head and face. The eyes should be blanked out, and any birthmarks or tattoos concealed. It is preferable to obtain written informed consent from the patient or parent/guardian (if the patient is a minor), and the next-of-kin (if the patient has died), giving permission to publish the case report and accompanying images.

The discussion serves to explain, clarify and interpret key findings, and should be brief and to-the-point. An overview of the typical management may be required. The authors may suggest or explain his hypothesis, and express his own opinion here. A commentary that puts the case in context of other similar cases or explains specific management decisions is useful. Any shortfalls or limitations of the case should be stated. The value that the case adds to the current literature should be highlighted, so should differences between the reported case and other similar cases. Authors should also try to indicate the direction for future investigation, or diagnosis or management of similar cases. In the last paragraph, the main conclusions of the case report, and an explanation of its importance or relevance should be provided. The take-home points should be emphasised, with focus on the main learning points which should relate to the purpose for reporting the case.

An acknowledgement section is optional, and includes items such as help received from colleagues who do not justify authorship, or sources of funding. Statement of consent from the patient, or anonymously acknowledging the patient on whom the case report is based, may be placed in this section. Authorship should be restricted to those who have made substantial intellectual contribution to the manuscript and/or who have participated sufficiently in the patient's diagnosis and management to take public responsibility. Some journals restrict the number of authors for a case report, and justification may be required if more than four authors are listed.[4] References should be limited to those that are directly relevant to the case reported, and are usually not more than 15 in number.

SUMMARY

Case reports are a means for doctors to share their anecdotal experiences with individual cases, have a place in journals, and contribute usefully to medical education. The case should be reported honestly, factually and succinctly. The authors should conduct a thorough search for similar cases, emphasising differences with the case being reported. Above all, the case report must have a clear

learning point that adds value to the current understanding of a known disease, its diagnosis or management.

Box 4. Take-home points:

1. The case reported should be unique, rare or unusual.
2. The manuscript should be short and succinct.
3. The case should add value to diagnosis or management.
4. There should be a clear learning point.

REFERENCES

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SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME
Multiple Choice Questions (Code SMJ 20101A)

	True	False
Question 1. The purpose of writing a case report includes describing:		
(a) A new disease.	☐	☐
(b) An unexpected association between diseases or symptoms.	☐	☐
(c) A rare side effect of a particular treatment.	☐	☐
(d) A complicated case without a final diagnosis.	☐	☐
Question 2. The structure of a case report includes:		
(a) A structured abstract of at least 500 words.	☐	☐
(b) A discussion section.	☐	☐
(c) A limited number of references.	☐	☐
(d) Numerous tables and graphs.	☐	☐
Question 3. The following statements about case reports are true:		
(a) They should be short and succinct.	☐	☐
(b) They are found in every medical journal.	☐	☐
(c) They are ranked highest in the hierarchy of evidence in the medical literature.	☐	☐
(d) The manuscript should be constructed exactly according to the journal's Instructions to Authors.	☐	☐
Question 4. These types of cases are worth reporting:		
(a) Known disease occurring in an unusual season.	☐	☐
(b) Known disease in a new geographical area.	☐	☐
(c) Known disease not previously found in a particular ethnic group.	☐	☐
(d) Typical presentation of a well-recognised disease.	☐	☐
Question 5. The following are common problems with case reports:		
(a) Excessively complicated.	☐	☐
(b) No proof of diagnosis.	☐	☐
(c) No incremental knowledge.	☐	☐
(d) Conclusion is supported by evidence.	☐	☐

Doctor's particulars:

Name in full: _____

MCR number: _____ Specialty: _____

Email address: _____

SUBMISSION INSTRUCTIONS:
(1) Log on at the SMJ website: http://www.sma.org.sg/cme/smj and select the appropriate set of questions. (2) Select your answers and provide your name, email address and MCR number. Click on "Submit answers" to submit.

RESULTS:
(1) Answers will be published in the SMJ March 2010 issue. (2) The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj by 7 April 2010. (3) All online submissions will receive an automatic email acknowledgment. (4) Passing mark is 60%. No mark will be deducted for incorrect answers. (5) The SMJ editorial office will submit the list of successful candidates to the Singapore Medical Council.

Deadline for submission: (January 2010 SMJ 3B CME programme): 12 noon, 31 March 2010.