



Case Report: Pearls and Pitfalls

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What are case reports

A case report is a focussed narrative of a medical problem or an unexpected presentation/outcome faced by the physician in one or several patients [1]. A case report may describe an unusual clinical disease, a challenging differential diagnosis or management, an unusual, or unique setting/technical approach for care, an information that cannot be reproduced due to ethical reasons, or adverse interactions [2,3].

Need and importance of reporting

Historically, case reports have been vital in recognizing new or rare diseases, assessing the beneficial and harmful effects of an intervention, and medical education [1, 3, 4]. Indeed a detailed documentation of scientific case notes for a challenging case which incorporate patient's history, physical examination, consideration of differential diagnoses, treatment modalities offered and observed outcomes, help us to create a valuable resource for guiding clinical care, generating futuristic research hypothesis and can also serve as an education tool. They offer a structure for case-based learning in a particular logistic healthcare setting. Writing a case report creates an opportunity to integrate clinical expertise with evidence from systematic research for the seasoned physician, and allows a novice medical students to think critically and initiates them into scientific writing. They have been aptly reported as one research note at a time and as an excellent scholastic tool for sharing clinical experiences [1-6].

In the parlance of anaesthesia, it could be an adverse event or an unexpected occurrence during anaesthetic interventions or a rare disorder calling for an innovative yet ethically sound approach of anaesthetic management.

Seminal examples published in the past 60 years have detected novelties, given insights when other research designs were not plausible, and assisted greatly in pharmacovigilance [7]. Of late many regional anaesthesia nerve blocks like the latest 'PENG Block' have first been reported as case report, paving the way for clinical studies.

While RCTs provide one to two limited key messages from the outcomes of the study, case reports document the full picture of clinical care on a case-by-case basis and provides evidence where experimental evidence is lacking or clinical studies cannot be conducted due to ethical concerns [4, 7, 8] (randomization concerns for e.g. in interventions during critical events like CPR, or a CICO etc). This has led to new formats of case reports- problem case, the narrative case and the evidence-based case.

Despite the well-known advantages, publication of case reports has been given low priority by many high impact factor journals in recent years. They have been labelled as anecdotal evidence, placed on the lowest rung of evidence ladder as they lack quantitative data and are usually riddled with subjective biases, thus deterring generalis ability of results [2, 7, 8].

Can we improve the reporting of case reports to make them useful to evidence based scientific literature?

The usefulness of case reports has been limited by inconsistent, incomplete retrospective reporting, lack of quantitative verifiable data, which has substantial misinterpretation and publication bias [7]. Addition of a uniform structure in writing may improve rigour, accuracy, and inclusion of essential details [8], with the likelihood of replication [9].

In 2011, a group of clinicians, researchers, and journal editors developed reporting guidelines for accurate writing of case reports [1, 4, 10, 11]. "The CARE guidelines", is an ambitious endeavour to improve completeness, accuracy, transparency and thus usefulness of case reports [1, 4, 11, 12]. The CARE groups believe that case reports have the potential to offer early signals that can be useful for clinical research, inform clinical practice guidelines, and improve medical education. This structured reporting would also enable systematic aggregation of information from individual case reports. When systematically collected and combined into larger datasets, they can be analysed, enhancing the early discovery of effectiveness and harms [1, 4, 11, 12].

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The CARE guidelines checklist is structured to correspond with key components of a case report and help to capture useful clinical information [1, 4].

The checklist [1, 4] begins with a statement that describes the narrative of a case report. A case report tells a story by using prose in a consistent style across all sections that includes the presenting concerns, clinical findings, diagnoses, interventions, outcomes (including adverse events), and follow-up. The narrative should include a discussion of the rationale for any conclusions and any takeaway messages.

It is universally prudent to include the following key elements in this structure [1,4]:

1. Title: The diagnosis or intervention of primary focus followed by the words “case report”, which will enable indexing in databases and may improve search result. The title should be succinct and help readers clearly identify the focus of the case report (e.g., medical condition, intervention, outcome, population).

2. Keywords: 2 to 5 key words that identify diagnoses or interventions in this case report (including “case report”).

3. Abstract: Usually written last, it should reflect an accurate summary of the case report preferably within 200-250 words. A structured abstract should include 3 following sections:

Introduction: What is unique about this case and what does it add to the scientific literature?

Case presentation: The patient’s main concerns and important clinical findings. The primary diagnoses, interventions, and outcomes.

Conclusion: What are one or more “take-away” lessons from this case report?

The main text of the manuscript after abstract should include the following:

4. Introduction: Briefly summarizes why this case is unique, or novel and how does it add to the currently available literature and may include medical literature references.

5. Patient Information:

- a. De-identified patient specific information.
- b. Primary concerns and main symptoms of the patient.
- c. Medical, family, and psychosocial history.
- d. Relevant past interventions and their outcomes.

6. Clinical Findings: Describes the significant physical examination (PE) and important clinical findings.

7. Timeline: Historical and current information from this episode of care organized as a timeline (as a figure or table). The timeline should show how the key events of the case unfolded.

8. Diagnostic Assessment:

- a. Diagnostic methods (PE, laboratory testing, imaging, surveys).

- b. Diagnostic challenges and differential diagnoses considered
- c. Prognostic characteristics when applicable.

9. Therapeutic Intervention:

- a. Types of therapeutic intervention (pharmacologic, surgical, preventive).
- b. Administration of therapeutic intervention (dosage, strength, duration).
- c. Changes in therapeutic interventions with explanations.

10. Follow-up and Outcomes:

- a. Clinician- and patient-assessed outcomes if available.
- b. Important follow-up diagnostic and other test results.
- c. Intervention adherence and tolerability. (How was this assessed?)
- d. Adverse and unanticipated events.

11. Discussion:

- a. Strengths and limitations in your approach to this case.
- b. Discussion of the relevant medical literature.
- c. The rationale for your conclusions.
- d. The primary “take-away” lessons from this case report (without references) in a one paragraph conclusion.

12. Patient Perspective: The patient should share their perspective on the treatment(s) they received.

13. Informed Consent: The patient should give informed consent after reading the text of case report. If the patient is incapable of giving consent, authors should seek permission to publish from his/her first degree relative and/or an institutional committee. There may be other circumstances where an ethics committee or Institutional Review Board (IRB) approval may be necessary [1,4].

Pearls & Pitfalls

Common pitfalls inviting rejection are: Pompous style announcing that this is the first and only case description without adequate literature search; Unstructured and incomplete information which keeps changing with each revision especially in response to peer reviewers comments conveying untruthfulness and lack of transparency; duplication or redundant presentation of cases hitherto discussed before in published scientific literature. Indeed one of the red flags for an editor is lack of correlation of text and figures or tables in case report [2].

Hence to understand insights towards avoiding rejection let’s see what journal editors or reviewers are looking for in case reports:

“Good case reporting demands a clear focus, to make explicit to the audience why a particular observation is important in the context of existing knowledge” (Vandenbroucke 2001) [13].

When reviewing the submitted case reports editors and reviewers will look for novelty, essential description which is authentic, genuine and devoid of and competing or conflicts of interest and finally the clinical impact and educational value of the case report for their journal audience. Indeed as reviewer or editor, one’s aim

should be to give to the authors a well-informed constructive feedback to add enhanced value to the case report [2].

Pearls: At the outset write detailed notes of the case, do a thorough literature search, ascertain novelty and relevant messages for clinical practise and then write as per reporting guidelines. Four main principles should be borne in mind while writing a case report viz., clarity, honesty, reality and relevance [14].

It is desirable to incorporate a range of unique characteristics, such as: narrative style, conciseness, and brevity so as to convey the message to readers as quickly and precisely as possible; personal tone, as against the detached academic style which is typical of research articles; and educational intentions, aimed at improving patient management. There need to be a dominance of active voice sentences, past simple tense, personal pronouns, and modal verbs. Some case reports may be written occasionally in

present perfect, present simple, and future simple tenses [15]. Finally as the first draft is ready, read the scope of various journals to identify the right place to publish, read and re-read the instructions to authors and then submit after careful revisions with all ancillary documents. One of the reasons for desk rejections of any manuscript is not conforming to instructions to authors and reporting guidelines.

One of the pearls from my end is to send your manuscript to your mentor and friend to read and give their honest opinion for improvement before you submit to the journal and to be consistent, honest and timely while answering queries from editorial office.

Conclusion

Novel, accurate and transparent case reports are challenging to write and publish. High-quality case reports are more likely when authors follow the CARE guidelines and the specific journal instructions to authors.

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