Sharing Clinical Experience with the Scientific Community: How to Write a Case Report?

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"Always note the unusual….. Publish it; Place it on personal record as a short note.

Such communications are always of value." [1]

This quote by Sir William Osler, the father of Modern Medicine, is a testimony to the continual teaching value of case reports. Case reports are a description of a single case or cases with unique features experienced by physicians, which are then shared with the scientific community [2]. These are the first line of evidence in health care system, and are important in communicating something new learnt from clinical practice [3].

WHY WRITE A CASE REPORT?

We all know that case reports are ranked quite low in the hierarchy of evidence-based medicine [4], but still retain value in scientific publishing as an important mode of providing new knowledge to the field of medicine. They provide a great opportunity for young researchers to develop their writing skills, perform literature search, experience the peer-review process, and start their scientific writing careers [5,6]. They are instrumental in formulating novel ideas that trigger clinical trials for future research. Albrecht, *et al.* [7] analyzed all the case reports and case series published in the *Lancet* from January 1996 to June 1997, and found 23.3% (24/103) to be followed by randomized controlled trials on the same topic. Case reports are the only medium for reporting unique cases, rare associations, atypical presentations, and unexpected outcomes. Reporting adverse drug reactions by means of case reports are fundamental part of pharmacovigilance [8]. Both the first heart transplant by Christian Bernard in 1967, and the first ever report of people with Acquired Immunodeficiency Syndrome (not recognized as such yet) in 1981 were published as case reports [9,10]. The various situations where one may think of publishing a case report are illustrated in ***Box* I**.

STRUCTURE OF A CASE REPORT

A case report should be a structured, brief and focused document highlighting a clear learning-point. Case reports do not follow the IMRAD (Introduction/ Methodology/Results/Discussion) structure that is followed in research articles, but still follow the underlying schema of *Why* (you are reporting the case?), *How* (it was done?), *What* (was found?), and *What* (it all means?). There is minor variability amongst journals, but mostly the following sections are present in a case report:

Title: The title of the case report is obviously one of the first thing seen by the reader, reviewer or editor. The title should give them an idea regarding what is being reported. The title must not describe all the findings, but create a sense of curiosity amongst the readers. Therefore, it should be simple, specific, concise, catchy and eloquent [11,12]. Some of the journals, and the Consensus-based Clinical Guidelines Case-Reporting

BOX I COMMON CLINICAL EXPERIENCES WHICH MAY BE SHARED BY CASE REPORTS

- To report a rare or unknown disorder
- To describe an atypical etiology or presentation
- To discuss a challenging differential diagnosis
- Rare manifestations/complications of a known disease
- Rare associations with sound justification
- New insights into pathogenesis of a disease
- To report unusual drug-interactions
- To describe new/rare side-effects of drugs
- To prompt or disconfirm a hypothesis
- To report any novel diagnostic procedure
- To report a new treatment modality
- To report an unexpected outcome
- Common topics with high clinical relevance

(CARE) [13], suggest that the title contains the words 'case report', *e.g.*, '*Headache and transient visual loss as the only presenting symptoms of vertebral artery dissection: a case report* [14].'

Usually, it is preferable to write the title after writing the whole manuscript, as it is at that time that one has a better overall impression of the key message you wish to convey.

Abstract: It is a brief and short description (50-100 words) emphasizing the prudent points of the case, and anything new added to the existing knowledge. Abstracts for case reports are generally unstructured, and some journals might not even ask for an abstract. However, a 4-point structured abstract is required by *Indian Pediatrics*, developed after discussions among a variety of stakeholders [15]. The CARE guidelines also have recommended a structured abstract.

Introduction: The introduction should be short, and describe the background regarding the case to be reported, and what is already known. A justification regarding why we need to report this has to be given with what has already been reported in the past and what new will it add to the existing knowledge. Some journals do not even ask for an introduction and the manuscript starts with the description of the case [16].

Case-description: The description of the case must report all events in a chronological order. This section describes the history, clinical examination findings, demographic data and all investigation reports that support the diagnosis, and exclude the other differential diagnosis. The treatment and follow-up must be described in detail, and all important negative findings must also be included. The case-description must be sufficiently detailed in order to give an opportunity to the readers to make their independent clinical impression and differential diagnoses. This may be supported with figures like clinical photographs, radiological images, and photographs of pathological specimens/slides. All information conveying the case-detail must be included, while avoiding superfluous details that may break the flow [12,16].

Take care not to detail all the investigations carried out; only the relevant ones need to be detailed with actual values (preferably with normal range, if it is an uncommon or specialized investigations and majority of readers are unlikely to be aware of the normal values) and units as per the journal's requirements. Rest of the investigations carried out can be clubbed together and stated to be 'within normal limits' or by some such statement. Some journals may even allow you to add a table to detail all the investigations, if the work-up was too exhaustive, or the patient was followed-up for a long period; refer to past issues or the authors' instructions of the concerned journal for guidance.

It is preferable to provide the relevant imaging/ micrograph pictures with the submission; these may or may not be included in the final publication but allow the reviewer to make an informed decision about your work-up and diagnosis. Always take a written, informed consent from the patient/parents/legal representative for the publication of the case report, including photographs and clinical details (after showing them to the patient/ parents). This precludes problems later, when the patient is non-contactable after discharge, and the journal asks for a permission letter.

Discussion: This is a crucial part of the manuscript, and justifies why the case is worth reporting. This section should start with a summary of the salient features of the case, followed by comparison with similar cases reported in the past and reasons why the presented case is different. Do not claim 'first such case' as your literature search strategy may not be systematic or comprehensive, and is likely to miss similar cases reported in literature. The discussion evaluates the case for its novelty, uniqueness, variability and appropriateness, comparing with literature published in the past to derive any new knowledge and applicability in clinical practice [2]. The justification for the present diagnosis/intervention must be discussed, followed by some implications of the case on clinical practice. As case reports have a low level of evidence, we must not make overambitious generalized recommendations; rather, limit ourselves to enlist the learning points that add to existing knowledge, and make some appropriate and specific suggestions depending on the quantity of literature available [17].

References: The number of references permitted for a case report is very limited; this varies amongst journals – *Indian Pediatrics* permits a maximum of 10 references. You do not need to cite all previous such cases published, but the more relevant and preferably the recent ones.

AUTHORSHIP ISSUES

Most editors will agree that authorship issues are most commonly encountered with case reports. Both gift-authorship and exclusion of deserving authors (ghost authors) is common. This has led quite a few journals (*e.g.*, *Indian Pediatrics*, *BMJ Case Reports*) to limit the number of authors permitted for case reports.

These authorship issues quite frequently arise as the authorship criteria provided by various groups like the ICMJE are not easily applicable to case reports.

Moreover, as it is not a pre-planned 'study', very frequently the requirement 'substantial contributions to the conception or design of the work' is missing, and it is also difficult to differentiate 'acquisition, analysis, or interpretation of data' from routine clinical care. Though, the remaining three criteria remain valid. Thus, it has been suggested that one authorship criteria could be "all authors must have made an individual contribution to the writing of the article and not just been involved with the patient's care" [18].

Another needling issue is the authorship opportunity to members of investigative or supportive departments *e.g.*, Radiodiagnosis, Pathology, Pediatric surgery. As the admitting department/unit has the access to the patient data and follow-up, supportive departments may frequently miss on the opportunity to report the case; even though it may have been their contribution that led to the diagnosis (imaging or biopsy) or improvement (surgery). There is, thus, a need for individual institutes to develop guidelines or standard operating procedures for reporting of cases and the ownership of the data. A time-limit may be set for the admitting department/unit to prepare and submit the case report, after information to all departments involved in the care of the patient. An oversight group from these departments may discuss and decide on the authors.

Till recently, there was a wide variability in guidelines for writing case reports and instructions to authors of the specific journals had to be followed. Consensus-based Clinical Guidelines Case-Reporting (CARE) have recently been proposed by Gagnier, *et al*. [13]. The checklist provided [19] is used by many journals and reviewers while reviewing case reports. These guidelines bring about completeness in writing the case, thereby increasing their chances of acceptance.

LIMITATIONS OF CASE REPORTS

Case reports are known to have some inherent limitations. Findings are specific to that particular case and cannot be generalized, and make limited contribution to the scientific knowledge-base. Moreover, as they are lower in the level of evidence, they are cited infrequently, very often leading to a detrimental effect on the journal's Impact factor. Some journals have limitation of space and have had incidents of authorship abuse in the past, which has lead to removal of the case report section from their journal [20,21]. Many of the interview boards, and even the Medical Council of India [22], do not count publication of case reports as a 'research publication'. It is becoming more and more difficult for authors to get their case reports accepted in mainstream journals. Current acceptance rate of case reports by *Indian Pediatrics* is below 5%. Some common reasons for rejection of case reports are detailed in ***Box*** 2, which may be helpful to the beginner. However, the concept of journals dedicated only to publication of case reports is a positive change.

BOX II COMMON REASONS FOR REJECTION OF CASE REPORTS

- Too common condition
- Too rare condition, that readers are unlikely to encounter (usually indicates a mismatch with the readership)
- Too obvious diagnosis
- New gene mutation but with no clinical relevance
- Diagnosis not robust/required investigations not done
- All differential diagnoses not ruled out
- Unethical investigation or treatment
- No teaching point/value
- Unclear message or wrong message

CONCLUSIONS

Case reports are brief excerpts where clinicians describe their experience of a particular case. Despite inherent limitations and limited educational value, they still remain an important tool for sharing scientific knowledge, and an easy avenue for polishing the writing-skills of the beginner. The persisting interest of readers in case and the arrival of many journals primarily dedicated to publication of case reports, will ensure that this important link in scientific evidence does not become extinct.

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