

An Overview of Reports on Clinical Case Report

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ABSTRACT

Case reports represent the oldest and most familiar form of medical communication. It is one of the best ways for the beginners to get familiar with scholarly writing. It is the time-honored vehicle for medical teaching. It is also the foundational 'building block' of scientific inquiry. Unfortunately from late 1970s in scientific community there was a tendency to see the case report as least important and a 'second class' publication. The authors tried to find out how this 'fertile seeds' were cultivated and valued by the scientific community. Articles on case reports were collected consecutively by daisy chaining from web and published journals. Many logical arguments are found in favor of encouraging in writing and publishing case reports. There are also issues to be addressed further. Diversified criteria and styles can be followed. Uniqueness is not the only principle, any information which someone find useful and beneficial in clinical practice can be presented as case report. Facts in a case report can be considered as one of the weakest evidence and should not be considered as anecdotal information. To make others aware of unusual presentations or complications; case report is the rapid and effective means of communication.

Key Words: Case report, evidence based practice

Introduction

Case reports represent the oldest and most familiar form of medical communication¹. Case descriptions suggestive of cancers were found in papyrus records in Egypt; as early as 1600 BC². Even before Hippocrates case reports have provided a rich resource for teaching and research in medicine³. Sir William Osler encouraged others to record and publish whenever they have made or recorded unusual or original observation⁴. It is one of the best ways for beginners to get familiar with scholarly writing⁵. A case report may not have as much potential impact on the science or practice of health care as randomized controlled trial or other research results. However, it may be the only way to make others in the field aware of unusual presentations or complications. Most importantly it is the time-honored vehicle for teaching others. New syndromes, manifestations, associations, complications, or outcomes are appropriate subjects for case reports, as are typical well-documented examples of known entities that are relevant to a journal's readers⁶.

Case reports are the foundational 'building blocks' of scientific inquiry⁷. Many original observations were first presented as case reports. The discovery of AIDS was founded on the basis of a case report on extensively disseminated Kaposi's sarcoma in a young homosexual man published in the American Journal of Dermato-pathology in 1981³. Unfortunately from late 1970s in scientific community there was a tendency to see the case report as least important and a 'second class' publication^{1,8}. In Bangladesh and probably most of the peer reviewed journal all over the world; case reports are published in a separate section, not in the 'original article' sections. The authors tried to find out why a case report was not valued as an original publication or an important source of information in scientific progress. How they are valued in the scientific community was also an inspiring quarry. This article probably will help to focus on the way to answer the questions.

Methods

The case report and the articles on case reports were retrieved from web. The articles on case reports in the published journals in different libraries of medical institutes were also reviewed. The case reports and articles written on case reports were selected consecutively. Articles were collected by daisy chaining. Data synthesized and informations were collected and recorded on a predesigned data collection form and checklist. These were developed on the basis of reviewer's checklist for case report of few national and international peer reviewed journals. Suggestions from critical appraisal checklist used in the journal club of different institutes were also taken into account. Some statistical and research methodology text books were also consulted⁹⁻¹¹.

Results and discussion

Definitions and Terminologies

A case may be defined as a happening, an event or an occurrence¹². A medical case report is 'an article that scientifically describes and interprets an individual case or few cases often written in the form of a detailed story of illness, including the presenting signs and symptoms, diagnostic studies, treatment course and outcome^{6,8,13,14}. Sir William Osler described case reports as a 'scientific observations; carefully documented so that they may be a valuable education and research resource⁴. Usually most of the report consists of a single report often termed as 'clinical case report', 'a medical case report', 'a single patient case report', 'case report', 'clinical story' and 'a single case report'. If more than one, it may be called 'case series', 'case series report', 'time series case report^{6,15-17}.

Case Report and Case Series

There is no consensus on defining the demarcation between case report and case series. Case report is the detailed description of case(s) and case series is the cumulative group result of a number of cases^{18,19}. Both are descriptive and observational research design but case report is much towards qualitative and case series is more to describe the findings quantitatively²⁰. There is no agreed minimum or maximum number; some accept at least three as case series²¹ and others accept ten or less in case

report¹⁵. In a study on case report taken from several prestigious journals, Abu-Zidan et al¹⁸ reported that more than 52% case reports have case number less than 5 on the other hand 63% of case series had case number 10 or less with a median number of seven per series.

Case Report and Study Design

Case report is a descriptive study design with 'in depth and naturalistic' analysis. In that sense it has got similarities with qualitative research. In general a case report is retrospective as it is not a part of planned or predesigned research project^{6,17,22}. It can be experimental and prospective when the author plan the patient care ahead of time, as it was done in ligating PDA on a patient in 1939²³ and in doing a parathyroid adenectomy using endoscopic technique in BSMMU in 2007²⁴; it is then called 'a case study'⁸. 'Time series case report' is one of the prospective designs as used by some to generate a hypothesis where the clinician takes data several times before and after the intervention²⁵. One of the time series design is 'AB case report' where at least three measurements is taken to avoid inaccurate measurement both before (phase A) and during the care (phase B)^{26,27}.

Place of Case Report in Publication

The number of case report and its acceptance as publication is increasing. Sorinola et al²⁸ found about 240,000 case report on Medline between 1997 and 2002. In another review it was shown that case report constitute about 7% of medical journal publication of which 2% were published as original article. It was also noted that most (72%) of the single case report was published by the specialists²⁹. Case report is considered as the most popular form of medical communication. In a study it was shown that 19% to 35% of patients presenting to GP with unexplained symptoms and apprehending that something is missing. A case report may highlight a new way to explain those symptoms³⁰. Many original observations were detected first and reported as case report. So it should not be ignored or appreciated as a second class publication¹. Many peer reviewed journal have a 'Case report' section. Various formats are used, such as 'Clinical case conference', 'technical report', 'letter to the editor' 'lesson of the month'

and 'Evidence based case report'^{8,31}. There are also Journals to publish case reports as 'core publications'³².

Case Reports as Citation

Usually case report has got a low citation value. It is not frequently cited and is 'less often quoted' than other type of articles. Its publication tends to be declining in journals with high impact. It is considered that these are written by less experienced younger clinician. Although seem less important but the close and regular involvement of the younger clinician than their seniors can be a great environment for good case studies^{8,33,34}.

Case Report and Evidencebased Medicine

Traditionally case report is considered as anecdotal information due to its small sample size. Still it is an 'amusing and interesting' account of a particular incident or event³⁵⁻³⁷. Important and detailed information of a single incidence for clinical practice may be missed or beyond the scope of larger studies but can be discussed in case report^{34,38}. Case report can help and guide in clinical decision making process³⁹. The experiences on a case should not change the way of an established management of any diseases but should create a desire to rethink on it^{17,40-45}. The controversy of scientific value of a case report has been diminishing and the demand and importance of its publication increasing from the late 1990s^{8,32}. Pearson⁴⁶ summarized the reports from literatures; to rank the articles as evidences. Case report was not in the list in most of the hierarchy schemes. Those who considered case report as evidence; it was placed at the lowest step of the ladder⁴⁸.

Report on cases was the only basis of clinical medicine for many centuries and they can still contribute to our knowledge and understanding^{49,50}. Case report for alerting the practitioners to possible new reactions is one of the vital safety points for the treatment process. The case report serves to describe the basic needs of medical science for its real progress⁸. Many scientific communities are considering that the case report is not anecdotal information. It may be the 'weakest' but first line of evidences in health care^{2,6,17,33,51}.

Medical Education and Case Report

Medicine is the subject which should be learnt in workplace. Case report has been used for many years as an important means for educating students. Case reports provide a rich resource for teaching and research in medicine^{3,47,52}. 'A case report, if prepared properly, is a valuable educational device to describe clinical syndrome, association, reaction, or treatment. If a report advances basic understanding of a disorder, increases clinical skill, or suggests useful research, it is worthy'⁵³. Case based educational articles published in many journals from ground round presentations, case of the month and clinicopathological conferences are one of the important approaches for educating the medical practitioners^{17,40-46}. Case report is valuable when it describes unusual or unique conditions and presents an event that is new or clinically educational^{33,54}. It is a useful resource to highlight on key learning points for the practitioners on rare conditions³⁹. A case report is more valuable in learning benefit and risks on newly emerging or traditional (acupuncture) therapeutic speciality⁴⁹.

Reasons to Publish a Case Report

A case report can be the source of new knowledge if it describes previously unknown syndrome or disease, unreported association of two distinct diseases, a previously unreported observation in a known case or an unusual or exceptional pattern of presentation of a known disease and a previously unrecognized therapeutic adverse or beneficial effect of an intervention^{5,7,38,51,55,56}. New observation or explanation of a finding to elucidate the mechanism of disease or to offer a new insight on pathogenesis or a challenging differential diagnosis can be important attraction of reporting a case^{47,57}. Clinically important hazards or potential problems associated with the use of diagnostic or therapeutic devices or materials, mistake in diagnosis and causes and consequences of those can be a matter of discussion in a case report⁵⁸. To demonstrate a manifestation, finding or feature more clearly with a new technology or technique can be described in a case report⁵⁹. To illustrate, support or to point out a new hypothesis can be a theme for reporting a case⁴⁷. Care in an unusual clinical setting can be described in the form of a case report¹⁷. The

'typical or classical' case can be reported to summarize and synthesize existing knowledge for educational purposes^{33,47,51}.

Case Report as a Foundation of Research

For a rare and new clinical event case report is the main and principal means of surveillance³¹. Report on cases can provide a data or information to generate questions in the clinician's mind⁸. Despite the limitation of case reports, these are useful to generate new hypothesis for future large scale clinical trials^{17,40-46}. It is considered as the foundation of experimental research. It can contribute to medical science in two ways; as a source of new knowledge and in medical education and audit^{6,8,47,56, 60-64}. Useful information and evidences also can be synthesized by doing meta-analysis of case reports⁷.

Pitfalls in Quality of Case Report

Although many of the case reports are academically worthy they cannot be accepted due to poor writing quality and improper format⁶. This may result from lack of experience in scientific writing. One of the common causes of poor quality may result from poor documentation. Sometimes common or widely reported cases are thought to be rare due to poor literature review. Inadequate care or improper management resulting from misunderstanding of pathophysiology may result in an event seems to be unique but cannot be the thing to be published. Quality of a case report may be compromised as a result of inadequate focusing on primary message. A case may be difficult to understand by the readers due to complex or unusual illustrations. Useful information will be weakly supported due to poor use of references⁴⁷.

Elements of a Case Report

In most of the articles it is found that it the shortest of all publications. The constant components are introduction, case summary, discussion and references⁴⁷.

Weaknesses and Strengths of the Case Report

The major weakness is its small sample size. An exceptional case cannot be generalized. Report on cases can provide a data or information to generate

research questions and hypothesis in the clinicians' mind but should not be considered as established evidence. A case report is prepared usually retrospectively and may not be based on systemic observation so there is a chance of missing relevant information. More importantly the associations may have their own explanations. The dangerous aspect is that there may be emphasis on the bizarre element or focusing on a misleading item^{8,55}. The design pitfall should be kept in mind such as inadequate description of the case. The observation may be biased with subjective variation³¹. Confidentiality may be difficult to preserve in an isolated case report⁸.

There are usually little or no ethical issues in case report. Someone can report a case and learn from mistakes and this is the only way to have a 'natural experiment' to invent new things⁸. One advantages of case report from authors view is its low volume and cost involvement. The other favorable point is its structural flexibility to express the finding and analysis³³. The strength of case report is that it can be published quickly to notice and warn on unusual events to the clinicians^{54,65}.

Limitations

The authors could not go through all the relevant literature as the number of publications is so many. It was also difficult to manage time to look at every detail. There are numerous publications on each aspect pointed out and the authors had selected only few to refer. Only on medical case reporting was discussed and as a result other aspects could not be analyzed.

Conclusion

The importance of writing case reports are gaining attention day by day. Information in case report should not have an impact on practice of health care as other research articles. It should be used to make others aware of unusual presentations or complications. It is a time honored method for teaching others. News syndromes, manifestations, associations, complications, or outcomes are most appropriate subjects for publishing a case reports.

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