EDITORIAL

The Case Report in Context

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Case reports are a rapid means of dissemination of information vital to the practice of medicine. Case reports also serve as important educational tools to both authors and readers. These reports often serve as a clinician’s first experience with scholarly writing and provide an important training ground in manuscript preparation and publication. For readers, the case report identifies “recognition patterns” for rare clinical conditions and also can provide a thorough review on important topics related to the case. This article describes the components of a well-written case report for the novice writer as well as identifies opportunities to write a case report beyond the traditional clinical case report.

INTRODUCTION

The publication of case reports has become a standard of medical literature. Early case reports were little more than personal communications between colleagues about unique and interesting patients seen in their medical practices. This anecdotal reporting has been refined into an accepted form of scholarly publication with the ability to rapidly disseminate knowledge to a broad medical audience. Case reports can serve several purposes: They offer their readers a recognition pattern to identify similar rare cases in their own practices, they alert readers to new and rare adverse reactions to drugs, and they highlight innovations in medical management, dilemmas in medical ethics, and progress in medical education. Given the broad range of topics that can be legitimately highlighted in a case report,

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†Abbreviations: STEC, shiga-toxin producing \textit{Escherichia coli}; HUS, hemolytic-uremic syndrome.

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there may be many instances during one’s medical career when it may be appropriate to write a case report. To that end, this article provides advice and suggestions to the novice case report author.

WHEN TO WRITE A CASE REPORT

Novelty is a criterion commonly cited by authors and editors when validating the importance of a case report. A truly unique case is, however, a rare event in clinical practice, and by focusing solely on novelty, many novice authors de-emphasize the educational value of their reports. Cases that increase the awareness of an unusual condition, describe a rare presentation of a common condition, or identify innovative treatment and diagnostic strategies are valuable additions to the medical literature whether they are novel or not [1].

One recent and prominent example of the usefulness of case reports in clinical medicine was the publication of a case series during the outbreak of Shiga-toxin producing *Escherichia coli* (STEC†), a type of enterohemorrhagic E. coli, in Germany in mid-2011 [2]. Hemolytic-uremic syndrome (HUS) is a severe condition most commonly associated with STEC (STEC-HUS). HUS is characterized by hemolytic anemia, thrombocytopenia, and acute renal failure. This disease is deadly, difficult to treat, and mostly affects children. At the start of the outbreak, a timely case series in the *New England Journal of Medicine* reported dramatic resolution of symptoms of STEC-HUS after treatment with Eculizumab, a monoclonal antibody that had been approved to treat a rare congenital form of HUS [3]. A case series, which generally includes a handful of cases, shares the same anecdotal nature of the case report while including more examples. This case series, which described a novel treatment for STEC-HUS, led to the rapid adoption of Eculizumab as a treatment option when traditional treatments such as dialysis and plasmapheresis have failed. This example of an innovation in treatment highlights one of the many important roles that case reports or case series may play in clinical education.

WHO SHOULD WRITE A CASE REPORT

Case reports also offer excellent opportunities for medical students and residents to gain experience in scientific writing and learn from their clinical mentors [4]. Case reports typically have several authors representing not only those who contributed to the clinical management of the case but also those who contributed to the writing and content of the report. Case reports require a strong narrative voice to describe the case or cases, a focused literature review, and an understanding of the relationship between the case and general clinical practice. Regardless of the type of report, it should offer some recommendation for the improvement of clinical care. The experience of writing a case report can sharpen authors’ writing skills, lend critical experience in the peer review process, and prepare medical professionals for careers as scholarly clinicians.

HOW TO CREATE AN INFORMATIVE AND WELL-WRITTEN CASE REPORT

Case reports generally have five sections that include the abstract, introduction, case presentation, discussion, and conclusions. The abstract is very brief (150 to 200 words) and should briefly summarize the case and its clinical relevance. The abstract should clearly state the subject and educational value of the case report to introduce the audience to the central theme of the article. Authors should avoid the use of medical jargon unless it is clearly explained in the text and should define any abbreviations at the time of their first use. Authors should strive to create an article that is concise while also accessible to readers in the international medical community and those outside the medical profession.

The introduction serves the important role of placing the report into context. The important clinical features of the case should be introduced alongside the highlights of seminal publications on the topic. The reader should be able to understand why this report is important and how it relates to common clinical practice. The introduction is relatively short (approximately 500 words) and does not require the ex-
tensive literature review that should be pre-
presented in the discussion section of the article.

After the introduction, clinical findings are described in the case presentation. The case presentation is a chronological description of the case history, examination, diagnostic testing, progress, treatment, and outcome. The case presentation should begin with the chief complaint, initial presentation, medical history, and pertinent family and social history. Novice authors should be careful not to lose the narrative of their report in the case presentation. Instead of exhaustive descriptions of clinical observations, authors should focus on those observations related to the central finding or theme of the report. Authors also must be careful, however, to present sufficient information to support their conclusions. This section often includes tables that present both measured values and the normal ranges of serological or diagnostic tests as well as figures that aid in the explanation of clinical findings. Figures should be clearly marked with arrows or other markers pointing to the relevant findings, and figure legends should contain details of how the clinical image was obtained. Authors should then guide the reader through clinical reasoning, diagnostic testing, clinical developments, treatment, and outcome. The case presentation should establish a “recognition pattern” that the clinical readership may apply to similar cases in their own medical practices [5].

Once the case presentation has been presented and described, it is discussed in context. The discussion section reviews the evidence supporting clinical decisions, compares and contrasts the particular case with similar cases in common clinical practice, and describes the central theme, finding, or lesson of the case. The discussion of similar cases should be a broad overview that may or may not reference specific previous cases. If the discussion warrants reference to several previously reported cases, that information may be provided in a table. The authors should also discuss the limitations of their report and the implications for generalizing their findings to larger patient populations [6].

The case report concludes with a brief summary of the case that is closely related to the central theme, finding, or lesson that the authors wish to convey. Any recommendations that the authors make should be related to the evidence they have presented as well as the evidence summarized in the discussion. The authors may discuss possible applications of their central theme, finding, or lesson to the practices of other clinicians, and they may suggest future clinical studies or highlight the need for more extensive basic science investigation. The brevity and concision of the conclusion section is dependent on the well rounded but focused discussion that precedes it.

One important topic to consider before writing a case report is the message or lesson that the authors wish to convey [5]. Often the most important part of the case report is not the description of the case itself, but the recommendations for future treatment or further research made in the conclusion. These recommendations often stem from the critical literature evaluation in the discussion section. This message or lesson should also be central to the introduction and presentation of the case so that the authors may create a report that is cogent and cohesive.

BEYOND THE CLINICAL CASE REPORT

Case reports that focus on corollaries of clinical care such as medical ethics and medical education are increasing in popularity. Cases that describe an important or unusual ethical dilemma faced by a clinician serve an important function in the medical discourse when accompanied by a clear description of the situation, well-reasoned discussion of possible solutions, and recommendations for clinicians who may face similar quandaries. Reports of this nature have been published on topics that include palliative care, transplantation, and fertility and reproduction. Case reports concerning medical ethics have been evaluated in their role in the moral education of medical students and exemplify the use of case study format by clinician-educators [7,8].

CONCLUSION

Creating a well-written and informative case report requires a firm understanding of
the underlying message the authors wish to convey. With that message in mind, the authors build their case report into the five main sections: abstract, introduction, case presentation, discussion, and conclusion. A well-constructed case report should create a “recognition pattern” for the reader to identify similar cases in his or her own clinical practice. Topics such as the identification of a novel disease, an unusual or complex case, unusual presentation of a common problem, innovative treatment, medical education, or ethics may produce case reports that are effective, important, and educational.

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