

General Article

DENTAL CASE REPORT FOR PUBLICATION; STEP BY STEP

***Abdulgani Azzaldeen, Abu-Hussein Muhamad and Nizar Watted**

Department of Conservative Dentistry, Al-Quds University, Jerusalem-Palestine

**Author for Correspondence*

ABSTRACT

Since Hippocrates, case reports have provided a rich resource for teaching and research in medicine. Case reports are published by many prominent journals—with more than 170,000 case reports are indexed in MEDLINE from 1996 till today, and a number of narrative guidelines for the preparation of case reports have appeared in the medical literature. To facilitate the preparation of case reports, we reviewed the existing guidelines and a random sampling of published case reports and created a fill-in-the-blanks worksheet for dentists, and dental specialists to use to capture unique scientific observations. Although originally developed to assist family practice residents to write case reports, the case report worksheet can be used by physicians in any practice setting and any discipline to collect and report interesting, unusual, or newsworthy cases.

Keywords: *Case Report, Dental Writing, Publishing*

INTRODUCTION

Case reports are defined as the scientific documentation of a single clinical observation and have a time-honored and rich tradition in medicine and scientific publication. Such article discusses the role and relevance of case reports in the current evidence-based medical literature. The article also discusses the factors to consider in evaluating individual case reports, and discusses a practical conceptual scheme for evaluating the potential value and educational content of a case report.

A successful clinical case report should present information that is written using the required elements for a case report, should be well structured and convey a clear message (Janicek, 1999; Croll, 1981). An objective and scientific approach on behalf of the author should be conveyed (Green *et al.*, 1998; Croll, 1981) and conform to the formatting guidelines described in the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. These guidelines describe in detail how to prepare a manuscript for submission to a peer reviewed journal. Conforming to these guidelines is essential to insure that submitted manuscripts are uniform in nature, as objective as possible, and can be processed by editors in an expeditious manner, thus providing the author with a better chance of earlier acceptance.

The purpose of a research protocol is to serve as a reference document used by laboratory employees and other research groups. If questions about specific procedures arise, clinical workers consult the research protocol to determine the appropriate course of action. The document also serves as an information source for grant review boards, who determine whether the project is worth funding. Ethics boards review research protocols to ensure the safety of human and animal subjects used in research (Gehlbach, 1993).

Before writing a research protocol, an author must consider the main research question and have a clear question and specific hypotheses about the results of the study. She then determines the methods used to answer the question. It is essential that the methodology be clear to readers and provides an answer to the research question. The specific research methods and procedures must be safe and appropriate for both research subjects and clinical workers (Gehlbach, 1993).

All research protocols include detailed information about the design and methodology of an experiment. Authors of these protocols present descriptions of laboratory techniques, clinical interventions and treatment of research subjects. Safety considerations must be addressed, especially if human subjects are put at minor or moderate risk. Protocols also must include a graphical representation and detailed description of the experimental design. This allows readers to understand the justification for the study and the structure of the experiment (Janicek, 1999; Croll, 1981).

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Many scientists think that after a research protocol is submitted it is complete. In fact, research protocols are constantly changing documents. If any change to a study procedure is made, it must be approved by an ethics board if human subjects are used. Scientists amend research protocols to include up-to-date information about procedures and techniques. They also include any revisions to informed consent forms and other documents used during the study. Keeping all records current is essential to appropriate and ethical completion of a research study (Lawrence and Mootz, 1998).

The purpose of this article is to outline the main steps in producing a standard protocol for a research project. It intends to provide the necessary guidelines for the potential researcher who hopes to carry out a research project and, consequently, to maximize chances to obtain the desired funding. None of these ideas is our own; they are a condensation of those derived from several readily available sources (Janicek, 1999; Croll, 1981; Lawrence and Mootz, 1998).

What is a protocol and what makes it important?

A protocol is a document that explicitly states the reasoning behind and the structure of a research project. The reasons for preparing a protocol are: 9-10. It states the question you want to answer. It encourages you to plan the project in detail, before you start. It allows you to see the total process of your project.

It acts as a guide for all personnel involved in the project. It acts as a “reminder” to you and your supervisor (or co-workers) of the initial structure and aims of the project (Janicek, 1999; Gehlbach, 1993; Debakey and Debakey, 19836).

How to report a case?

The following section would deal on the essential basic nuances in the compilation of a case report. 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 [Table 1]. Unlike original articles, case reports do not follow the standard IMRAD structure of the manuscript organization (Croll, 1981). As there is a wide variation in the format for case reports among different journals, it is essential for authors to follow exactly the target journal’s Instructions to Authors.

Table 1
Structure of a case report
Title
Authorship
Abstract
Introduction
Case report
Patient confidentiality
Figures
Tables
Discussion
Acknowledgements (optional)
References

The Project title

The investigators for the project should be selected for their expertise and contributions. The project title is one of the most important features of the protocol because it attracts the attention of the potential reader (Iles and Piepho, 1996). It is, therefore, necessary to make it as short and to the point as possible. It may need to be revised after completion of the writing of protocol to reflect more closely sense of the study.

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Abstract

The abstract is the first page that a reviewer reads. Reviewers of granting agencies may make their opinion based on the abstract alone. It may be difficult to overcome a bad first impression and, conversely, there may be a lot to gain with a good first impression. The purpose of the abstract is to describe succinctly every key element of the proposed project. It should give a clear idea to the reader of the central question that the research is intended to answer, its significance and justification (Iles and Piepho, 1996; AMA, 1985). It should specify the hypotheses (if applicable) and the research objectives. In addition, the abstract should briefly describe the methods and procedures laid out in the section on methodology. Although the abstract will come first in the presentation of your application, it is best written last, after the protocol itself is written. Most application forms place restrictions on the amount of space or number of words the abstract can contain. Make sure your abstract conforms to these restrictions.

Introduction

The purpose of the paper should be clearly described in the introduction (Croll, 1981; Squires, 1989; Kratochwill and Levin, 1992). In addition, background information needs to be provided in order to demonstrate how the case contributes to the literature. Information from a review of the literature allows the author to demonstrate that he or she understands the context of this case in relation to previously published data (Green *et al.*, 1998; Croll, 1981; Kratochwill and Levin, 1992). For example, the incidence of the disorder, the number of previously reported cases, or other information that helps provide context for the case could be provided. While it is important to provide enough background information to put the paper into context and establish the need for the paper, it is also important to not delve too deeply in to the subject (Croll, 1981; Iles and Piepho, 1996; Squires, 1989).

Therefore, it is essential that the author's preparation for writing the case report should include a comprehensive review of the literature (Croll, 1981), but it is important to limit the amount of information in the introduction only to what is adequate to familiarize readers with the topic. Authors can search the literature online using MEDLINE for information that is predominantly medical in nature (<http://www.nlm.nih.gov/databases/freemedl.html>) and MANTIS (<http://www.healthindex.com>) for dentistry and other natural health methods. These are databases can be searched using their own interfaces such as Entrez PubMed for PubMed or even through the general search engines such as Google. One can also look through scientific journals. Sources of literature have improved drastically during the last decade. However, data obtained at the national or state levels may be needed in some epidemiological searches and these may not be available in Medline or PubMed (Polgar and Thomas, 1995).

Case Report

Patient assessment and examination is essential and key to your presentation. You should include and expand upon the following areas:

Patient's presenting complaint

State it simply and in the patient's own words. Relate it to your treatment plan.

Medical history – previous and current

Medical history forms must be completed and updated. If they are on medications, always ask what for and how long have they been on them. Use the BNF to identify the relevance of medical conditions to dentistry, (page 29 in the most recent BNF (Croll, 1981) and interactions which can be read in appendix 1. (As a side note, Warfarin is a Coumarin and can be confusing to find in the BNF. I know I struggled!).

Be able to relate a patient's medical history to the treatment you are offering.

For example, patients with diabetes who are undergoing periodontal treatment – start off with the basics – Showing that you're Safe! Explain what diabetes is and what problems could arise in a medical emergency, such a hypoglycemia. Discuss how you could reduce this risk by providing patients with appointments after meal times. Then progress on to more advanced topics such as the poor ability for wound healing and the effects that diabetes has in relation to periodontal disease (Croll, 1981; Iles and Piepho, 1996; Doherty, 1994).

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Dental history

This includes previous dental history and current factors such as diet and dental hygiene. Ask about tooth brushing: do they use a manual or an electric toothbrush? What toothpaste do they use (does it contain adequate fluoride)? How often do they brush? Do they use floss or use TePe brushes? Do they use mouthwash?

When discussing diet it is relevant to identify frequency of intake, type of sugar, provide a diet diary and how you helped them to improve including substitutes for snacks.

Social history

Identify whether they currently smoke or chew tobacco, or have smoked in the past. Note the number of cigarettes smoked a day. It is a good idea to include that you have offered the patient smoking cessation advice and also informed them of the increased risk of oral cancer and periodontal disease.

Record their alcohol intake (units per week). Highlight its relevance to erosion and don't forget the relationship of liver cirrhosis to surgical complications.

Note their occupation and how this may influence stress levels, motivation and attendance.

Family history

This can be related to medical conditions such as diabetes or heart disease. Also ask about history of periodontal disease in the family. For bonus points, include aspects relating to oral medicine such as ulcers, to show you're thinking about all aspects that could present on the initial and subsequent visits.

Extra oral information

It is important to state, even if there are no abnormalities detected. For cases involving trauma: note scars, asymmetry or irregularities that can be observed.

Intra-oral observation

This should include you're usual charting and BPE record. In addition, for cases with missing dentition discuss ridge status, dimensions of the spaces, alignment of the dentition. Look for and record recession, mobility and plaque scores.

Special tests and Investigations

These should be discussed and justified. Emphasise the justification aspect. Radiographs need to support a provisional clinical diagnosis.

When taking radiographs, quality assure them and, using current guidelines, select an appropriate review date. For example, it is suggested that for patients with a high caries risk status, Bitewings are taken every 6/12.

Diagnosis

This will most likely include more than one diagnosis. And yes missing teeth is a diagnosis. Ensure that the diagnosis is related to the initial assessment. If appropriate show that you have used a differential diagnosis and how you went through a process of elimination to come to your definitive diagnosis.

Prognosis

State how motivated the patient is and how likely the treatment you will provide is going to be successful. Individual tooth prognoses are good to include and will support your treatment decisions. These will also help you identify contingency requirements.

Treatment plan

This is an itemised list of treatment that you plan to provide and has been consented to by the patient. Tick these off as you go along. Document that you have discussed all treatment options available, including the advantages and disadvantages of each. Remember that you are responsible for your patient's aftercare and that you need to make the appropriate arrangements for them for when you have *fingers crossed* graduated. Study models and photographs before and after are good records for you to reflect upon and demonstrate to the tutors that you have used methods available to you to monitor your patient's dental health. It's also good backup in case your patient leaves you high and dry on the day. Don't panic if you haven't got them or you come to find they are not the best of quality, because complete and up-to-date records should be fine.

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Alternative treatments are a hot topic in case presentations. The tutors are very keen to identify that students are aware of options available and be able to support their decisions for opting to choose one treatment over another. This could include discussing why you chose to replace missing teeth with an acrylic denture, instead of a fixed prosthesis or a cobalt/chrome denture. Carefully go through the advantages and disadvantages of each option and be prepared to highlight the disadvantages in order to justify your treatment choice. Always include that no treatment is a viable option and most importantly, relate it to your patient's initial presenting complaint.

As a dental care professional, you must be able to demonstrate a good ability to work as part of a team and delegate tasks. Where appropriate, use members of your team such as the Hygiene and Therapy department to reinforce the importance of good oral hygiene and provide smoking cessation advice, periodontal treatment and simple cons.

In the weeks running up to your case presentation make sure you have reviewed your patient and got them to put the date of your exam in their diary. Get your patient on clinic the week before the presentation and don't just do what everybody does: a scale and polish. Look beyond shining your restorations and removing last week's dinner. Do a thorough assessment, as if you were seeing the patient for the first time so you can't be caught out on any areas that you might have missed. One unfortunate final year had the bad luck to have a visible draining sinus "appear" on the day of the presentation. Don't let that be you!

It is highly recommended to prepare cue cards. Many people don't realize that you can bring cue cards into the presentations. Write them out and practice them in front of friends, family and anyone else who's willing to listen. The more feedback you can get the better. Be confident. Be prepared. Think of questions that you might be asked and devise answers for these. One area that I strongly recommend spending time on is devising contingency plans should your treatment fail in the future. This will show the examiners that you are aware of and can manage all possible outcomes.

In the presentation, make sure you speak clearly and slowly. Introduce your patient and state their age. Don't rush through things. The tutors will be spending a lot of time looking at your patient and checking basic areas, such as periodontal health, restoration margins and any lesions that you may have missed. Whilst you are presenting your case, don't be put off if they interrupt you and don't be afraid to pause for a moment to develop an answer in the best way possible. If you say something that is wrong, don't try to wing it. Stop. Point out that you've said something incorrect and if possible offer the correct answer.

All in all, tutors are looking for safe and sensible students who have demonstrated a logical (and defendable) approach, providing good quality care to patients from the first visit to the final presentation and for continuing care in the capable hands of another dental student.

DISCUSSION

The explanation and discussion of the case belongs to the discussion section. If it has not already been presented in the introduction, an overview of how the condition is typically managed provides readers with information to compare the case report methods with. Since most case reports describe new things, it is essential to tell the reading audience what typically occurs in practice. Some authors give a brief report of the history of the condition which helps the reader understand the disorder and how it is managed. A discussion of differential diagnoses and how they were eliminated or included in the final assessment of the patient establishes that the author fully understands the problem and provided an adequate evaluation. A rationale for the management of the patient should be provided (Green *et al.*, 1998; Doherty, 1994). If a previously published protocol was used to see if it would have an effect on the patient, this alone is adequate. However, if there are other reasons for selecting one procedure over another the rationale should be presented (Anonymous, 1997).

Writers should provide some suggestions or hypotheses regarding the outcome of the case and why the care provided may or may not have been beneficial (Kratochwill and Levin, 1992). Support from referenced materials is helpful in this area and should be included.

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Authors must include in the discussion other possible reasons for the outcome of the case, such as the natural history of the disorder or other factors. Since the case is subject to many unknown variables, the author should present some of these to the reader (Croll, 1981; Kratochwill and Levin, 1992).

In addition, faults in the case or quality of reporting should be identified. For example, if the same person did not conduct orthopedic tests throughout care, the results could be quite different. Or, perhaps a better outcome measure could have been used to track the patient's condition, which is something that would be revealed as the author reads the literature on the topic.

The discussion is the part of the case report where the author gets to provide his or her opinion, thus opinions should not appear elsewhere in the paper.

A final element for the discussion is some suggestion for future inquiry into the topic (Croll, 1981). Stating that “more research is needed” is inadequate (Kratochwill and Levin, 1992). Prompting a specific directive for future patient care guides research and clinical endeavors.

Authors write this section by integrating what they have learned from the case and the literature that is reviewed in order to prepare the manuscript.

Conclusion

The conclusion should not be a summary of the entire case. The conclusion should focus on what is to be learned from the case report. The conclusion should relate to the purpose of the paper and should not offer far-reaching, unsupported and general statements (JABFP, 1999), due to the inherent limitations of the case report research design. A good example is this excerpt from the conclusion of a case report about managing a patient suffering from long-standing post-fracture movement disabilities

References

Certainly references should primarily be drawn from peer reviewed journal articles. Authors should use the most recent references possible, unless the history of scholarship in a topic area is being discussed. It is acceptable to use some references from books for information that is unlikely to change substantially over time; yet, journal articles provide information that is up to date. Magazines and newspapers should not be used as sources of evidence for a peer-reviewed clinical manuscript, except under highly unusual situations.

References should be adequate to demonstrate that the author has surveyed the literature to provide appropriate substantiation for factual claims and should be selected for their relevance and quality (Croll, 1981). Janicek suggests that references should be used to support information pertaining to the disorder under study, the clinical actions taken, and the decisions to be considered after reading the case report (AMA, 1985). There is no recommended number of references because this depends on the content of the case report. A single authoritative reference for a factual statement may be adequate. A lengthy list of references published for the sake of documenting laborious scholarship may demonstrate a lack of understanding of the publication process and indiscrimination (Croll, 1981). When providing references for theoretical information, such as is often found in the discussion, it may be necessary to provide a few references for a statement.

References should be formatted appropriately. Instructions for how to write out the references appropriately for a given journal are usually found in the journal's instructions for authors or in the Uniform Requirements. Proper formatting of references is essential, as it costs time and money on behalf of journal staff members to send this information back to authors for correction. All the information needed to correctly list a reference can usually be found with the abstract when conducting a literature search, or on the pages of the actual journal article.

Tables

Tables are lists of information, such as clinical outcomes, that aid in visually presenting information in an appealing manner rather than listing information as text in a paragraph (Croll, 1981). Tables should be simple and self-contained (Croll, 1981; Iles and Piepho, 1996), needing no further explanation. If authors wish to use previously published tables, the publishing company of the original material must grant permission and it is the authors' responsibility to receive this permission. Appropriate formatting for tables can be found in the Uniform Requirements.

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Figures

Figures or illustrations are a necessity to make articles interesting to read and help greatly to describe clinical procedures or findings. If authors wish to use previously published photographs or illustrations, permission must be granted by the publishing company of the material and it is the author's responsibility to receive this permission. Complete requirements for preparing illustrations or photographs for submission are detailed in the Uniform Requirements. Captions for each figure used in the manuscript should be provided. Authors should not expect that editors will write the figure captions.

Submitting your case report

Once you have written your first draft, check the spelling and grammar. Give it to your consultant to proof-read, and then make any final revisions and a covering letter to accompany the article. In reality, most case reports will require at least one or two revisions after submission to a journal. In the event that your case report is rejected outright, don't worry, there are always other journals you can submit to! Always read the reviewers' comments, many of whom may be experts in the field, and revise your article carefully (Polgar and Thomas, 1995, Anonymous, 1997).

CONCLUSION

Case reports are the first line of evidence in documenting clinical phenomena in the peer-reviewed literature. Proper preparation of a case report is essential in order for it to be published in a credible manner. Appropriate presentation and formatting of case reports help readers understand and use the information and also helps authors have a positive experience with the peer review and publication process.

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