

## Clinical Opinion

# The Elephant in the Room: Quality Control of Endometriosis Data

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**ABSTRACT** With the steadily increasing volume of endometriosis articles, and titles and abstracts readily available online, there is a growing risk that references are cited without the full articles having been read by the author(s) or by referees. Too often the titles and statements in abstracts are not supported by data in the published articles. Therefore, the peer-review process should direct extra attention to titles and abstracts to ensure that they are supported by data in the manuscript. Moreover, it is suggested that authors explicitly indicate which references have been read in full. To support the secondary peer-review process, we urge open-access journals to welcome letters to the editor and publish them instead of quietly “burying” them on the Internet. *Journal of Minimally Invasive Gynecology* (2010) 17, 637–640 © 2010 AAGL. All rights reserved.

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In recent decades, we have witnessed the almost universal availability of abstracts on multiple and powerful search engines. Although these search engines are welcome and useful tools that enable us to scan the vast medical literature on endometriosis, they have created several problems. First, the search engines retrieve all indexed articles irrespective of quality and ranking of the journal. Availability of this indiscriminate retrieval has contributed to the growing number of articles on endometriosis and has stimulated the creation of new journals. Some medical journals are open-access journals that charge the author rather than the reader, a policy that fosters easy access to the full articles but may also lower standards and quality control. It becomes even more problematic when open-access medical journals do not accept letters to the editor that, when printed, would be detected and posted by PubMed, Embase, Scopus, and other search engines. Instead, many open access medical journals provide for comments to be posted on the Internet, comments that are not detected by the search engines. The undetected comments

are thus “buried” on the Internet because physicians are unaware of their existence.

A second consequence of the use of powerful search engines is that abstracts and titles have gained unprecedented importance compared with the full-text article because the full article can be more difficult or more expensive to retrieve. Because abstracts are so easily available from search engines, we all tend to rely more on abstracts and less on full articles that are published in journals other than those we subscribe to. Consequently, quality control of the title and abstract before publication assumes great importance. The importance of the abstract was recognized more than a decade ago [1–4], when efforts were made to help authors [3] and to improve the review process by introducing structured abstracts [5,6], by adding statistical review [7], and by reviewing the reviewers [8–12]. Efforts have been made to scrutinize the peer-review process and to increase the standards of transparency [13–17]. Nevertheless, the accuracy of abstracts to reflect the data in the article remains a concern [18,19]. The importance of the abstract is a universal phenomenon as evidenced by the articles ranging from obstetrics and gynecology [1–4], dentistry [5], general medicine [9,14], pharmaceutical literature [18], and psychology [19].

## Two Levels of Quality Control

Editors and members of the editorial board do their best to select referees qualified to review articles submitted for

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publication. Recommendations of the referees and the decision of the editors and the editorial board constitute the primary level of peer review. The peer-review process is well established, and as readers, we have come to trust that a published article has passed this quality control. We assume that the title and the abstract are supported by the results, that the materials and methods were appropriate, that the statistical analysis was adequate, that the introduction and references reflect reasonably accurately what is known, and that the discussion does not contain unrealistic and unrelated speculation. Therefore, readers should be reasonably confident that they can “scan” multiple abstracts for new information without having to read each and every article in detail.

In addition to this first level of quality control, letters to the editor constitute a second level of quality control. Even the most dedicated editor or referee may occasionally overlook an inaccuracy concerning methods or statistics or interpretation of data or conclusions. Letters to the editor constitute a remedy for these contingencies. Letters to the editor are intended, and are appropriate, to point out and adjust any problem that may exist in a published article. For these 2 levels of quality control, we are profoundly grateful to editors and referees and to the peer-reviewed journals that have been awarded a high rank and have high impact because of their continuous effort [20]. Conversely, this double level of quality control within the peer-review process has a profound effect on authors. Authors prefer to publish in high-ranking journals with high impact to gain visibility and with the assurance that references are taken preferentially from these journals. Before on-line access to PubMed, Embase, Scopus, and other databases, to gain access to references, it was necessary to scrutinize the Index Medicus manually and request reprints or copies. This was a laborious process that limited the number of articles we could access and made us selective of the journals we did read.

### **The Elephant in the Room**

We have become concerned that there is a growing information overload in the field of endometriosis. We suspect this results from the combination of an ever-increasing number of articles, more powerful search engines, and ready access to abstracts online. The number of articles on endometriosis has steadily increased, from 1359 in 1970 to 1979, 2701 in 1980 to 1989, 4386 in 1990 to 1999, and 6349 in 2000 to 2009. This increase in published articles must be matched by an increasing effort by reviewers. This mountain of information makes it ever more difficult for reviewers to judge whether references are complete and used appropriately. Considering the more than 14 000 articles published during the last decades, no one can expect reviewers, although familiar with the field, to have read all articles on endometriosis.

Like everyone else, reviewers today must rely on titles and abstracts, and full-text articles selectively. Authors face similar problems, and may not always read in full all of the articles they cite. Therefore, it becomes increasingly important that titles and abstract are supported by data in the

manuscript. A vicious cycle may start when an article is published with title or abstract not supported by data in the article. The article risks being referenced erroneously by authors relying on the abstract only. Because of the sheer volume of articles to be reviewed, erroneous use of references with conclusions not supported by data increasingly risks going unnoticed by reviewers because they also rely, albeit partially, on titles and abstracts. As a result, these references could then be picked up in other articles, and the erroneous or exaggerated message in the title or abstract may become widely accepted without anyone questioning anymore whether these original conclusions were supported by data. In other words, once having entered the literature, the error achieves a life of its own, perpetuated in future citations.

### **What Triggered Us to Share This Concern?**

Almost unconsciously, we all have moved from reading full articles in a limited number of journals to electronic searches and increasing reliance on abstracts. Meanwhile, we have continued to take quality control for granted without questioning whether titles and abstracts were supported by data. Furthermore, we have continued to assume that a letter to the editor would serve to correct major inaccuracies that might have slipped through the primary editorial review process. Two recent incidents in the field of endometriosis have made us acutely aware of these problems, and this has prompted us to share our concern. In an online journal [21], the title and abstract concluded that “multidisciplinary...excision of deep endometriosis improves pain, QOL and sexuality with high fertility rates and low complication and recurrence rates.” Reading the article, however, we found a series of 50 bowel resections in 56 women. There were no data to support the conclusion “improves” because there was no control group; the title suggested excision, whereas the data described only bowel resections; the low recurrence rate of 7% was based on 9 repeat laparoscopies only, in which endometriosis was found in just 4 cases. In addition, the abstract fails to mention that no endometriotic nodule was observed in 7 women, or a nodule outside the muscularis in 6 women, nor a mean operating time of 7 hours, both the highest figures ever reported. When this was addressed in a letter to the editor, we were informed that it was considered “unacceptable” to write that the title and abstract were misleading and not supported by data.

In an open-access journal [22], the authors presented histologic and immunohistochemical evidence, with positive and negative controls, for ectopic endometrial tissue in human fetuses. Although an important observation that provided empirical evidence in support of the theory of developmental endometriosis (müllerianosis), the data presented in the title and abstract did not support the conclusions. In particular, the authors stressed that developmental endometriosis, which they had identified in 4 fetuses, explained the pathogenesis of all endometriosis; furthermore the authors stressed, without evidence, that developmental endometriosis is a precancerous disease. When we submitted a letter to the

editor, we were informed that this journal did not accept letters to the editor. We were instructed that we could pay the standard fee and submit a rebuttal article or that we could submit our comments on the Internet without charge [23]. However, since PubMed, Embase, Scopus, and the other search engines would not pick up our comments, readers would not be alerted to their existence, they would not be read, and our online comment would be virtually “buried alive.” These are just 2 examples; however, we feel uneasy that many more examples of overstretched conclusions may have escaped our attention.

## Discussion and Conclusions

At least in the field of endometriosis, we can no longer take for granted that title and abstract accurately reflect the data in the body of an article. Furthermore, by the open-access journal refusing to accept letters to the editor, the second level of quality control was eliminated. This, as well as that the search engines will pick up these articles indiscriminately, and combined with the growing trend of reading titles and abstracts only, constitutes a potentially serious bias in the endometriosis literature. Furthermore, as readers increasingly rely on electronic searches, some authors might, even unconsciously, include powerful but inappropriate key words and sentences, which increases the likelihood that their article is readily picked up by Internet surfers. This occurred in the second example [22], in which the attention-grabbing term “Cancer” had been added to the title and abstract although the data in the manuscript were not related to cancer. This concern becomes even more serious when we consider that patients use the Internet to search for health information, making women with endometriosis especially vulnerable to inadequate or incorrect titles and abstracts. Consider the unnecessary fear engendered in women with endometriosis who read in the abstract, “...endometriosis, a disease that predisposes to cancer?” [22] It, therefore, becomes increasingly important for professionals and for the lay public that title and abstract must be supported by the data published in the article. To achieve this, we first need increased awareness by both the authors and the referees.

The problems of information overload, of the growing importance of search engines and the corresponding adaptation of authors who want to be found by search engines, of authors and referees relying increasingly on titles and abstracts without reading the full article, of online journals that let the author pay rather than the reader, and no longer accepting letters to the editor probably are universal in the medical literature [18,24] and not limited to the field of endometriosis. We intensively searched Pubmed, Embase, Scopus, and the Internet, and realized that we might be looking at the tip of the iceberg. In addition to the well-known problem of the occasional scientific misconduct and fraud, and rumors on blog sites, we found confirmation of underreporting of harm [25]. Most fundamental, however, is our awareness that search engines are poorly suited to retrieve this kind of information.

After becoming consciously aware of the problem, we suggest that something should be done by the journals. The individual cannot cope with this for the simple reason of time. As the start of a broader discussion, we suggest the following. It might be useful to reinforce the first level of peer review by adding to the checklist for authors, when submitting a manuscript, that “Title and abstracts of the articles cited are supported by and limited to the data of the article.” It might be useful to add this also to the checklist of the referees, thus enhancing awareness of its importance. It would also be useful to reinforce the second level of quality control by stimulating short letters to the editor, pointing out inconsistencies between title and abstract, and data. Perhaps most effective would be a requirement for authors to indicate those references cited that were not read in full when preparing the manuscript. Inasmuch as it might be unrealistic to ask that all articles be read in detail, indicating this would enhance awareness while helping reviewers. To support the secondary peer-review process, we urge open-access journals to welcome letters to the editor. To stimulate this, journals might consider indicating references from journals that do not accept letters to the editor and, thus, articles lacking the second level of quality control. For us, it has become doubtful indeed that we will read or reference in the future an article from a journal that does not accept letters to the editor.

## Editorial Comment

Professor Koninckx et al have touched on an important and sensitive issue and one that certainly is not limited to the endometriosis literature. As physicians, we are admonished to practice “evidence-based medicine.” But sometimes the “evidence” is tainted, deeply flawed, or just plain incorrect. It’s easy to access abstracts through PubMed, Scopus and other medical search engines; few authors order the entire text of a paper that they want to use as a reference if it is not in their usual collection of journals actually received and read. This leads to misquoting of the original data, and too often to a propagating of the error in the literature.

The journalistic process begins with the integrity of the author to choose references that are fairly picked to present opposing results and opinions, and to relay those data fully and accurately. While the peer review process has been criticized as not completely fair or anonymous, it remains our best bulwark for evaluation of submissions. Online self publishing is unvetted, and in my opinion, potentially more harmful than helpful, followed closely by so-called “open access” journals.

Those of you who have functioned as reviewers, bless you all, know how laborious and time-consuming the process has become. Here again, it is necessary to read the entire article that is referenced unless the reviewer is already familiar with that paper. The buck stops at the desk of the editor, even though he relies heavily on the reviewers.

I agree with Professor Koninckx that letters to the editor can serve as an excellent secondary defense against letting

incorrect information stand unchallenged, but as he points out, these letters do not appear in most medical search engines. Nevertheless, if you believe an author has erred in giving data from previous works, please take the time to write a letter to the editor.

Stephen L. Corson, MD

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