Surgical publishing

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No-one knows when surgeons first got the impulse to write about their craft, but the Edwin Smith Papyrus, written 3500 years ago, is the earliest known work devoted to surgical treatment. It is hard to ascertain at this distant remove its circulation or impact factor.

Modern medical journals first appeared in the 19th century. These journals were of general interest and did not separate medical from surgical topics. Indeed, both the New England Journal of Medicine (1812) and the Lancet (1823) had surgeon founders: John Collins Warren and Thomas Wakley. Specialty-specific surgery journals appeared later: Archiv für Klinische Chirurgie (currently Langenbeck’s Archives of Surgery, 1860), Annals of Surgery (1885) and the British Journal of Surgery (now BJS, 1913). The proliferation of medical journals at the time was such that Sir Rickman J. Godlee, then President of the Royal College of Surgeons of England, apologized to his readers for contributing to ‘the surfeit of medical literature’ when he introduced the British Journal of Surgery 100 years ago.

The turn of the 21st century brought a new kind of abundance in publishing: a radical increase in the reader’s ability to access an ever-increasing quantity and variety of information. Indeed, the impact of the joint emergence of the internet and electronic publication on professional communication has been nothing short of revolutionary. Individuals affiliated to modern medical libraries have immediate access to an astounding range of electronic journals and e-books. Powerful search engines help readers find and download relevant content almost instantly. Tablet-based apps allow readers to download and store entire journal volumes for convenient reading and reference offline. In addition, the scope of publishable material has expanded to include novel formats such as blogs, podcasts and videos.

As electronic publishing has advanced, the central importance of print publication has decreased, to the point that many believe that print journals will disappear entirely in the foreseeable future. Freedom from the inherent difficulties of producing and distributing printed matter brings with it open access publishing, a fundamental challenge to the subscription model that has existed since the invention of medical journals.

The basic concept of open access publishing is simple: unrestricted free access to all electronically published material. In this model, copyrights are obtained under the Creative Commons Attribution License, which allows free use of the material as long as there is appropriate attribution. The alternative copyright model, US Fair Use Guidelines, used in conventional publication, is significantly more restrictive. Open access scholarly publishing has been growing rapidly; the number of open access journals grew at an average annual rate of 18 per cent, and the number of articles at a rate of 30 per cent between 2000 and 2009.

There is much to like about open access publication. For authors, their work becomes more widely available than in the subscription-based publishing model, and evidence suggests that citation levels are similar between open access and subscription journals. For readers, free access! This could prove particularly important for those not affiliated to organizations such as universities and major medical centres, whose subscriptions provide access to a broad range of professional journals. For funding bodies, results of sponsored research are disseminated to a wider audience, including stakeholders (such as taxpayers, patients and patient advocacy groups) who might not have ready access under the traditional subscription model. Indeed, major funding bodies such as the National Institutes of Health, the Research Councils UK and the Wellcome Trust now require open access publication of the work they fund (allowing an initial embargo for publications in subscription journals). For academic institutions, open access, if widely embraced by researchers, offers an alternative to the costs of traditional subscriptions, which have substantially outstripped inflation over the past two decades, a particular challenge in the era of ever-tightening university budgets.

Nevertheless, open access publication is not necessarily a panacea. A major concern is the mechanism of its funding. Even if paper journals disappear, obviating the expenses of printing and distribution, the remaining costs of electronic production, web hosting and peer review are substantial, and need to be supported. Traditional journals do so based on the user-pays model; subscribers pay to access content. In contrast, the most prevalent economic model for open
Opponents of open access publication contend that it undermines traditional peer review by creating a perverse financial incentive to accept more papers, each of which generates revenue. Open access advocates hotly contest this point. At present, most major open access journals use traditional prepublication peer review, provided, as in the subscription model, free of charge by peer reviewers. However, open access allows it an intriguing alternative model: postpublication peer review, with publicly posted commentary and discussion.

One key issue is that widespread adoption of open access publication poses a significant financial threat to commercial publishers and, more importantly, professional societies, as their viability depends on membership (motivated in part by free subscriptions to the society’s journal) and subscription revenues from institutions and non-members. The open access movement is a robust one and, even as the details of its implementation are debated, it continues to expand its foothold in the publishing world. Indeed, many subscription journals are now using a hybrid model, whereby an author can pay to have their article published in an open access format. The BJS is one such example.

However, the emergence of a new economic model is not the only challenge facing surgical journals today. The lifeblood issue of surgical publication is the quality of the material being published. It has been almost 20 years since Richard Horton excoriated the surgery world for the poor quality of its research in his deliberately provocative _Lancet_ editorial ‘Surgical research or comic opera’6. Horton decried the vast preponderance of case series and the paucity of randomized trials. Have we made any progress? The answer is mixed. In brief, although there is evidence that more such trials are now being performed7, the quality of many of these trials continues to be suboptimal7,8. A recent systematic review of publications from 1999 to 2008 reported that only 7.6 per cent of the studies met the authors’ minimal inclusion criteria for comparative clinical trials. Within this subgroup there were numerous fundamental methodological deficiencies8. Furthermore, even the best intentioned investigator faces serious challenges when trying to perform a randomized surgical trial: inadequate funding sources (especially for non-device trials), patient unwillingness to be randomized between disparate treatment arms, incomplete ability to blind patients or investigators, variability of surgeon experience and skill, and difficulties in standardizing operative technique comprise just a partial list. The special issues of non-pharmacological trials have now been recognized explicitly by the Consolidated Standards of Reporting Trials (CONSORT) group, which has published an extension to its guidelines to address them9.

Ensuring the integrity of the surgical literature is a related critical issue. Fraudulent publication is a perennial worry. Although the incidence is hard to determine, there is no question that its impact can be substantial10. A more prevalent problem is the increasing impact of industry on medical publication. Even if the most dramatic examples of this problem have occurred in relation to pharmaceutical trials, it would be naive to ignore the impact of drug and device manufacturers in surgical publication given the substantial proportion of non-pharmacological trials that are funded wholly or partially by industry8. It is a sad fact that ‘many clinical trials are performed to facilitate regulatory approval of a device or drug rather than to test a specific novel scientific hypothesis’11. Marketers understand the tremendous financial value of a successful trial published in a major journal and thereby carrying that journal’s imprimatur. Unfortunately, there is no shortage of methods by which unscrupulous trial sponsors can influence results12, and investigators in multicentre trials often have ‘little or no input into trial design, no access to the raw data, and limited participation in data interpretation’11. These problems are compounded by the inevitable use of corporate-employed statisticians for data analysis and the too frequent use of ghost-writers, whose copy is edited but not written by an investigator13. Mandatory trial registration, adopted by consensus of the Surgery Journal Editors Group in 2007, addresses the issue of non-publication of unfavourable results, but many other serious concerns remain14,15. The best answer may lie in increased public funding of surgical trials12, although the prospects for this approach do not seem, at least in 2013, to be particularly bright.

Surgical publication, at its core, aims to disseminate accurate and up-to-date information about surgery and its related disciplines to the widest possible body of interested readers. Rickman Godlee recognized this principle when he justified the publication of the British Journal of Surgery on the grounds that ‘interchange of thought should be made easy’ among surgeons. Electronic publication has brought us a very long way from individual scribes copying treatises on sheets of papyrus. Yet, irrespective of how content is eventually delivered, and under
which financial model, it is important to remember that it is the quality of the content that matters most. The challenges of open access publishing notwithstanding, it is the maintenance of this quality, including innovation, scientific integrity and clinical relevance, that is the essential element for the successful future of surgical publication.

Disclosure

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