Pathology Publications
Past, Present, and Future

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Medical publication originated in the most ancient of times, in the most anecdotal of ways. People in virtually every cultural setting began to record their approaches to healing illnesses—which, of course, have been with humans forever—in an effort to ensure the health and survival of their descendants. In that sense, these efforts had Darwinian underpinnings rather than spiritual motivations.

As civilizations organized and developed, the role of “physician” was codified and promoted as a special one in society. Indeed, the 3 recognized “learned professions” in ancient times included medicine, law, and theology. As a consequence, publications emerged within each of those disciplines that possessed educational and developmental properties. That is to say, they were intended to allow better understanding of topical subjects by students and practitioners in each profession (in the process, establishing a factual foundation for functional application), and they also had the goal of providing vehicles for the presentation of new concepts or synthesis of older ones.

Virtually all of the ideas presented by medical authors before the 1600s were heavily laden with mysticism and intermixed with theology. There was also a strong and implicit prohibition against challenging the authority of historical titans in any given profession who had attained prominence and veneration through various means. Thus, if written dogma had any validity at all, it was merely through good fortune and not the result of systematic analysis. However, in 1668, Francesco Redi—an Italian physician—laid the groundwork for what became the “scientific method” by successfully debunking the concept of “spontaneous generation” (abiogenesis) that had long been accepted as fact.1 As it subsequently developed, the scientific method acquired 4 basic components: (1) observation and description of a phenomenon or a group of phenomena, (2) formulation of a hypothesis to explain the phenomena, (3) use of the hypothesis to predict the existence of other related events in nature, and (4) experimental testing of predictions, preferably by several independent workers using comparable methods.2

Coincident with the “age of enlightenment” in Europe in the mid 1700s, the scientific method enjoyed increasing application in medicine and medical publication. Organized medical journals appeared that stressed logic and deduction as opposed to opinion and inductive reasoning, which had dominated the profession up to that point. A search for truth was infused with an overriding spirit of altruism in the publishing of medical information, with the intent of bettering mankind in general and improving the welfare of society at large. As an increasing number of trained physicians immigrated to North America, new medical organizations were established and local medical publications emerged, although old-world books and journals were still considered preeminent and European practices were largely continued without question.3

This situation changed dramatically at the end of the 19th century. Enough American physicians had obtained expert training abroad and returned to the United States that they then could foster the education of native physicians in progressivistic practices. Following the Flexner report in 1910,4 a revolution in US medical schools ensued that largely abolished suboptimal educational institutions and that placed a premium on organized scientific investigation rather than empiricism alone.

This does not mean that American medical publication became flawless at that point—far from it, in fact. Organized trials of new diagnostic methods, new treatments, and new
Pathology and laboratory medicine (PLM) participated in that trend. Throughout the 1920s and 1930s, journals that were specifically attuned to that discipline were organized in the United States, following the examples of Virchow’s Archives and the Journal of Pathology and Bacteriology. The latter publications had been started in Germany and England during the late 1800s. In this country, the Archives of Pathology, the American Journal of Pathology, and the American Journal of Clinical Pathology constituted the triumvirate of journals in which laboratory-oriented physicians began to record their work. That was especially true after board certification in pathology became a reality in the early 1930s.

Nevertheless, it is interesting that a sizable proportion of pathology-oriented articles—including many seminal ones—were published through the 1970s in clinically oriented journals, such as JAMA; Surgery, Gynecology, & Obstetrics; the American Journal of Surgery; the New England Journal of Medicine; Cancer; the Journal of Bone & Joint Surgery; the Mayo Clinic Proceedings; and others. That practice continues to the present, although in much-diminished form. It undoubtedly relates to the fact that hospital pathologists were relative latetcomers to the medical specialty arena, and they were dependent on the good graces of patient-based practice areas for their livelihoods. Indeed, early in our collective history, pathologists often were lodged in departments of medicine, surgery, or pediatrics at many medical institutions and even in medical school faculties.

The final quarter of the 20th century saw a rapid and explosive expansion in the number of journals that represented PLM. Human Pathology and the American Journal of Surgical Pathology were founded during the 1970s, followed in short order by a spate of others. Today, the Information Sciences Institute lists 64 regular publications that primarily feature PLM articles worldwide.6

What do pathologists of today publish, and why do they publish it? How have the articles of today changed over time compared with those of 20 or 30 or 50 years ago?

Some traditional observational studies still appear in the current literature, similar to those that typified pathology publications of the past. These are aimed at describing putatively new entities, refining diagnostic criteria for existing ones, and documenting clinical, biochemical, or histologic variations of established clinicopathologic lesions. As such, they represent the best of what empiric pathology has to offer. However, in the present era of “evidence-based” medicine, technologic input has become a sine qua non for most articles, including an ever-increasing array of ancillary data gleaned from such techniques as flow cytometry, immunohistology, in situ hybridization, the polymerase chain reaction, cytogenetics, chromatography, mass spectroscopy, and others. One may be tempted to speculate that these methods surely must have eliminated error and bias from pathologic studies, but, in fact, that is far from true. A peculiar disinclination among laboratory physicians to espouse standardization—especially in the anatomic pathology arena—is still a problem in that regard.7 This should be one of the major focuses of journal editors in the future—to legislate for procedural commonality through the peer-review process, even if our professional societies will not do so.

Other current problems affecting pathology publications include, but are not limited to, the chaotic state of affairs produced by HIPAA (Health Information Portability and Accountability Act) regulations in regard to patient follow-up; the continuing trend toward overexpansion of authorship lists, in the “publish or perish” atmosphere of today; an appalling ignorance of statistics on the part of most physicians;10,11 a tendency (probably societal in nature) for authors to reject even constructive criticism; and the insidious influence of medical entrepreneurism, which leads people to overblow the importance of their findings and promotes subtle (or not so subtle) competition of a negative type among authorship groups.12,13

Also, to be frank, many American physicians cannot speak or write the English language cogently. With the deemphasis of classic education at a university level, many science-oriented students never learn the essentials of composition, vocabulary, and basic journalism. The latter comments may seem elitist, but if one cannot understand the train of thought (such as it is…) in a scientific article, the value of the data it presents is greatly diminished.14,15

Last, time and money are short for virtually all doctors today, including pathologists. Surveys attempting to identify reasons for decreasing publication in other specialty groups have targeted the lack of time for medical authorship as a major issue.16 Funding for the growing list of adjuvant studies that are necessary to do proper studies is also a definite problem; institutions, departmental chairpersons, and commercial firms continue to set the bar ever higher before opening their purses to support translational research.

There are no easy solutions to these problems. And, with the panoply of journals in which one may publish today, even terrible studies usually find their way into print somehow, somewhere. To quote an anonymous sage of pathology, “A paper written is a paper published.” Needless to say, the altruistic goals that still should guide medical authorship are ill-served by this situation. Remedies for the ills of the publication...
The world must come from editors and editorial offices, professional societies that sponsor journals, and promotions committees at medical schools. Things will get better only if a rational, feasible, and balanced approach is devised among those factions.

The prototypical pathology publication of tomorrow is not easy to envision, and its nature will depend largely on how (or if) the difficulties we now have are resolved. Ideally, future articles will be based on sound scientific method and study design, controlled methodology, proper application of statistics, and complete follow-up of patient groups that are studied. As simple as those elements sound, they are very difficult to obtain. Nevertheless, if the pathology community does not demand excellence in publication in the future, we and the patients we serve will be the losers.

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