EDITORIALI

Why the history of nephrology?

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Abstract

Nephrology is a relatively new discipline that emerged at a time when the writing of the history of medicine was changing drastically. While the merits of medical history were valued since antiquity, it was only in the 18th century that the actual historiography of medicine began. It was nurtured, matured and appreciated enough that by the late 19th and early 20th centuries, medical history was incorporated into the medical curriculum and presented at national meetings. Unfortunately, the merits of medical history and its inclusion in medical education have come under increasing scrutiny over the past few decades. Ironically, the erosion began at about the same time that scholarly work on the history of medicine was flourishing whilst that of scientific discovery and innovation in medicine was accelerating. The demands of rigorous research into the history of medicine gradually led to the emergence of medical history as an independent discipline within academic departments of history. Simultaneously, the exponential growth of new information generated by medical research led to an overflow of medical knowledge in which the inclusion of medical history was contested and dismissed. That is just about the time that nephrology emerged in the 1960s. Whereas initially the quest for origins led renal journals to publish historical articles, the more recent quest to increase impact factors has led to the exclusion of historical articles from consideration for publication. This manuscript examines the reasons that brought about the separation of nephrology from its history and proposes potential solutions to their rapprochement.

Key words: historiography of medicine, history of nephrology, medical history, medical teaching, william osler

Introduction

Broadly defined, the study of diseases of the kidney has a long history that can be traced to antiquity [1]. More strictly defined, the specialty dedicated to the study of the kidney, nephrology, is a relatively new discipline that emerged in the latter half of the 20th century. Whereas the term nephrology appears in medical dictionaries published in the 1840s, [2] and most nephrologists trace their origins to Richard Bright's description of the association of proteinuria with kidney disease in 1827, the term nephrology did not enter medical parlance until the 1960s. Actually, with increasing interest in the study of the kidney after World War II various national organizations dedicated to the study of kidney diseases appeared in France in 1949 (*Societé de Pathologie Rénale*), in the U.K. in 1950 (*Renal Association*) and in Italy in 1957 (*Società Italiana di Nefrologia*), the first national society to incorporate the term nephrology (nefrologia) in its name; but it is only after the formal establishment of the *International Society of Nephrology* in 1961 that nephrology emerged as an accepted discipline

[3] [4]. As a late comer into the history of medicine, the why of the history of nephrology can best be considered in the context of the times during which it came into existence.

Beginnings

The origins of history date back to the recorded story of human civilization. The early appreciation of its importance is reflected in Clio, the daughter of Zeus, created by the Greeks in their mythology as the muse of history. Importantly, they also attributed to her bringing the Phoenician alphabet to Greece, the very tool that refined into a vowel-based phonetic alphabet would allow for the easier learning and wider literacy that launched the Greek civilization. Heading her message, the founding father of medicine, Hippocrates (ca. 460-375 B.C.), expounded on the early history of Greek medical thought in his *Of Ancient Medicine*. While his followers dabbled in the history of medicine and Menon (4th century B.C.), at the behest of his teacher Aristotle (384-322 B.C.) is reported to have compiled the teaching of physicians (likely the source of the 1st century A.D. *Anonymous Londinensis*); it was Galen (ca. 129-200) who excelled in it. Galen's massive literary output is the best extant record of the history of medicine theretofore as he names and lists the contributions of his predecessors even if it is only to criticize and belittle their work in order to glorify his own contributions. Later, the Roman encyclopedist Celsus (ca. 25 B.C.-50 A.D.) in the introduction to his *De Medicina* recounted the ancient practice of medicine [5] [6] [7].

Most of these early ventures into the history of medicine were basically compilations of extracts from the writings of past medical authors or a doxography of ideas rather than actual historiography [7] [8]. A tradition that engrained itself in medical writing and survived in the medical literature published through the latter part of the past century. It was a way to expose the development of medical knowledge so that a reader would appreciate why a reported study was undertaken as illustrated in the first example in Figure 1. Compare the mention of authors by name in the quoted example from the inaugural 1981 issue of the *American Journal of Nephrology* (AJN) to the impersonal terse statements of that in an article on the same subject published in the same journal in 2014. The difference in these two introductory paragraphs barely 35 years apart reflects the hard times that Clio and her medical disciples have fallen in the recent past. Essentially, where familiarity with and display of medical history was expected and that of presenting the evolution of ideas and the individuals behind them was the norm, any such attempt is now dismissed as worthless information of erroneous facts and refuted principles and therefore needless to spend time or effort to recall.

When asked why not the history of medicine, the answer of today's authors and editors is "who cares?" An eroding attitude not unique to medicine but a sign of changing times expressed a century ago by Henry Ford, "*History is more or less bunk. It's tradition. We don't want tradition. We want to live in the present, and the only history that is worth a tinker's damn is the history that we make today*." (Chicago Tribune, 1916). A position buttressed by those of similar mind in medicine who contend that anatomy would have been discovered even if Vesalius (1514-1564) had never lived, as would the circulation of blood even if William Harvey (1578-1657) had never existed, and that of the association of kidney disease with proteinuria even if Richard Bright (1789-1858) were never born. The fact is that they did exist and it is the work of such creative individuals that has paved the way for the advances that followed in their respective fields. While it is true that the progress of science is the product of many forces and individuals, confirming the adage of Isaac Newton (1642-1726) that, "*If I have seen further it is by standing on the shoulders of Giants.*", the fact is that at any moment in history it is only select creative minds that benefit from standing on the

shoulder of giants, see things farther and point the way for the rest of us. Certainly, they deserve credit for doing that. As such, the story of great men and their great ideas is important and deserves to be recounted. A position unequivocally taken by William Osler (1849-1919), "*History and the knowledge of men are as much part of medicine as the latest technical devices and the knowledge of science*" [9].

It is regrettable then that familiarity with the history of medicine, once acknowledged as important and promoted in medical education, has now been literally abandoned, and the relevance of its teaching in an increasingly congested medical curriculum contested and dismissed [10] [11] [12]. Ironically, the erosion began at about the same time that scholarly work in the history of medicine was beginning whilst that of discovery and innovation in medicine was accelerating. A chasm that has only widened as the pace of progress in both fields (history and medicine) has accelerated over the past fifty years.

Concern over this unfortunate eventuality was expressed in 1905 by the Chicago physician known for his description of sickle cell disease and myocardial infarction, James Herrick (1861-1954), "*There is a tendency in these hurrying times to seize upon that which is new and quickly forget the old.*" Regrettably, between the arrogant 1916 statement of Henry Ford and the serious concern about it expressed by James Herrick it is that of Henry Ford that has prevailed over time and in most circles nowadays it is deemed a shortcoming to talk of

Introductory paragraphs from two articles published 1961 and 2014 issues of the *American Journal of Nephrology*

Example 1: From the ***American Journal of Nephrology 1981; 1:1-10***

"In 1976, **Moncrieff** and **Popovich** reported their first clinical experience with continuous ambulatory peritoneal dialysis (CAPD).[1] Supported by the Artificial Kidney Uremia Program of the National Institutes of Health a cooperative study was begun in 1977... The initial studies by this group utilized peritoneal dialysis solutions in bottles. The incidence of peritonitis was high but could be diagnosed early and usually responded promptly to therapy.[2] A major advance occurred when Dr. **Dimitrios Oreopoulos** in Toronto, Canada described a modification technique using peritoneal dialysis solutions in plastic bags.[3] ... In September 1978, the Food and Drug Administration approved the sale of peritoneal dialysis solutions in plastic bags in the United States. The centers participating in the cooperative study sponsored by the National Institutes of Health immediately converted to the **Oreopoulos** technique."

Example 2: From the ***American Journal of Nephrology* 2014; 39:459-461**

"Peritoneal dialysis (PD) has become a well-established renal replacement therapy for end-stage renal disease (ESRD) patients. During long term PD, the peritoneal membrane undergoes functional and structural alterations as a result of continuous exposure to bioincompatible concentrations of glucose and glucose degradation products, low pH, high osmolality as well as peritonitis.[1] The most common functional alteration is an increased peritoneal small-solute transport rate (PSTR), leading to impaired ultrafiltration and ultimately discontinuation of treatment.[2] ... Interleukin-6 (IL-6), a cytokine involved in the acute-phase inflammation reaction increases the permeability of the endothelium in vitro.[8] ... Therefore, we did this prospective study to investigate the association of intraperitoneal IL-6 level, assessed as appearance rate of IL-6 (IL-6AR), with ... "

Figure 1.
A comparison of the style of the introductory paragraphs from two articles published in the American Journal of Nephrology in its inaugural 1961 and 2014 issues. Proper names are shown in bold type.

old ways that are regarded as obsolete, irrelevant and not worthy of consideration. Of special concern in this regard is the increasing attitude of editors and publishers of medical journals whose concern with the impact factor of their journals almost invariably results in their rejection or even the refusal to consider historical articles. This disparity created over time is evident in the AJN from which the examples in Figure 1 are reproduced. Where in the 9 year period between 1994 and 2002, the AJN published over 153 articles on the history of nephrology, in the same interval between 2004 and 2012 it published only a single article on the history of nephrology in its January 2010 issue. Yet another example of this general attitude is reflected in the editorial composition of other renal journals which once used to include section editors for the history of nephrology as for example *Kidney International* (Carl W, Gottschalk, Leon Fine) and *Nephrology Dialysis and Transplantation* (J. Stewart Cameron, Garabed Eknoyan) but have ceased to do so in the past decade or so. Exceptions to this unfortunate trend remain as exemplified by the current editor of *Giornale Italiano di Nefrologia* (GIN) Biagio Di Iorio, who generously accepted the publication of the accompanying supplement of the proceedings of a congress on the history of nephrology and invited me to contribute this article.

What happened?

To appreciate what brought about the general apathy and neglect of a subject once considered a component of medical education one has to turn to the historiography of medical history. The formal historiography of medicine has been dated to the 17th and 18th centuries. Most of this early history of medicine was written by medical men to glorify and promote the progress of scientific medicine whose disciples they were. This was at about the same time that following the Scientific Revolution experimental and laboratory research accelerated, medical concepts began to change into experimentally verifiable explanatory mechanisms, and technological advances proliferated. And, as the pace of discovery and innovations in medicine accelerated emphasis on medical history writing changed to that of recounting the progress achieved presented as triumphs deserving the support of the research enterprise generating it. That is when history as "great men, great discoveries" flourished. It is also then that the writing of medical history began to change into a more rigorous endeavor based on archival research and increased in scope into a broader vision than what had been the mere recounting of the story of medical men [5] [6] [7].

The movement began in the latter half of the 19th century in Germany by Kurt Sprengel (1766-1833) and Max Newburger (1868-1955) and in France by Emile Littré (1801-1881) and Charles Daremberg (1817-1872), and flourished in the first half of the 20th century by a new generation of investigators such as Karl Sudhoff (1853-1938), Fielding Garrison (1870-1935), Charles Singer (1876-1960), Arturo Castiglioni (1874-1953), Henry Sigerist (1891-1957), Owsei Temkin (1902-2002), and George Rosen (1910-1977), to name just a few. They were all medical men who had studied medicine but devoted themselves to the study of its history [8] [13] [14] [15] [16] [17].

The ground work in historical research of these venerable pioneers was further expanded in the latter half of the 20th century as professional historians got into the picture. As a result, the new writing of the history of medicine passed from clinician-historians to non-medical scholars with PhDs based in university departments of history, who further reshaped, expanded and refined the scope of medical history. The result of this historiographic 'revolution' was the emergence of an autonomous research discipline in the history of medicine with a shift of emphasis into the social, cultural, philosophical and economic aspects of

medicine [18] [19] [20]. This otherwise admirable progress has created new problems. Not only has the writing of medical history become increasingly demanding but these new academic historians now dominate the discipline, write for each other and consider the work of clinician-historians as naïve [10] [12] [18] [19] [20]. These changes are not unique to medical history. They occurred simultaneously in the history of sciences in general and in the very discipline of history itself as it shifted emphasis on social, economic, geographical trends rather than the political, military and diplomatic history of the past. Essentially, the focus of the new academic departments of history is no longer on specific events or people but on the social, economic, climatic, geographical trends and external factors that influenced events and shaped the work product of the 'great men' of the past. It is in these changing times in the writing of medical history that nephrology emerged as a discipline.

Why the history of nephrology?

Why then the history of nephrology? From the outset, it is important to admit that historical knowledge is not indispensable to the practice of good medicine by any well rounded nephrologist, or to doing solid renal research by any well trained medical investigator. The once lofty answer that as a learned profession medicine has interests that transcend its utilitarian purpose is no longer tenable. The fact remains though that most notable leaders and contributors to the medical sciences are well versed in the humanities and knowledgeable of the history of their discipline as the reading of the biography and acceptance lectures of past Nobel laureates in chemistry, physiology or medicine will clearly reveal [see: nobelprize.org].

For those enamored with the rapid pace of medicine in embracing innovation and rejecting the past as obsolescence, it is worth noting that today's research can be appreciated best when considered in its historical context. Especially, since all medical investigators, however narrow their field of research and whether they recognize it or not, are in a way part of a grand historical tradition; and more importantly, however limited their care for the history of nephrology their ultimate research motivation is the discovery of some new truth to change the history of their research topic. As such, the realization of their own rich professional heritage and very raison d'être in research can only enrich their intellectual satisfaction. Additionally, it will provide them with reassurance in facing the trials and tribulations of bench research. In essence, the belittling of the past is detrimental only to their own full appreciation of the work they are engaged in.

Rather than just why the history of nephrology a better question to pose would be whether the practice of nephrology deprived of its history makes one a better clinician or investigator. Surely most of everyone would think not. As a first consideration it is worth noting that history is engrained in the very practice of medicine. Every good clinician - even those who despise medical history - must be a good historian who can dig up and record the facts of the 'past medical history' of every patient encountered. That is the aim of every aspiring clinician so well promulgated by one considered the ultimate clinician scholar, William Osler. His statement on the importance of medical history has been quoted above. What is more important is the model Osler set in nurturing this concept. As one of the founders of modern medicine at the Johns Hopkins University School of Medicine, Osler not only lectured on the history of medicine but was instrumental in the launching of its Institute of Medicine, under the leadership of William Welch (1850-1934). The statement of one of Osler's Baltimore colleagues Eugene Cordell (1843-1913) is one of the best and often quoted reasons for the importance of the history of medicine Figure 2 [21]. The continued commitment of Osler to these principles is reflected in his efforts after moving to Oxford in 1905

when he launched the Section of the History of Medicine of the Royal Society of Medicine in 1912 [9]. All this from an icon of modern medicine known to every medical student and practitioner independent of their own interest in or caring for the history of medicine.

What now?

Attempts to teach history in medical school may be futile. What has contributed to this difficulty has been the increasing pace of knowledge. Where at the end of World War II, human knowledge was estimated to double every 25 years, in 2014 it has been estimated to double every 13 months. For a student starting a four year medical school, this means that half of what is learned in the first year would be outdated by the time of graduation. Besides, medical school represents only a short period of 4 years in the life span of a physician. For interested medical students the solution has been the offering of medical history as an elective, which unfortunately is being selected by a diminishing number of students [12] [22] [23] [24]. As such the battle to integrate medical history into medicine should be shifted to the longer 40-50 years that medical graduates practice their trade. Medical societies should step in to fill this gap, as should subspecialty societies. They should assume the lead in the continued medical education of their membership. That can only be to their own advantage as reflected in the words of August Comte (1798-1857) founding father of modern sociology, "*To understand a science it is necessary to know its history*."

That has been the raison d'être of the *International Association for the History of Nephrology* (IAHN) founded in 1994 to encourage the exploration and dissemination of the history of nephrology. It has been a difficult but gratifying task. What has been most rewarding has been the start of a collaborative effort with the *European Renal Association-European Dialysis and Transplant Association* (ERA-EDTA) in 2015. Specifically, the leadership of the ERA-EDTA had the vision and wisdom to include a joint session on the history of nephrology in its annual meeting in 2015 and another one is scheduled for 2016. Hopefully, their lead will be followed by the other august societies of nephrology worldwide.

Why the History of Medicine (Nephrology)

1It teaches what and how to investigate.

2It is the best antidote we know against egotism, error, and despondency.

3It increases knowledge, gratifies natural and laudable curiosity.

4It is a rich mine from which may be brought to light many neglected and overlooked discoveries of value.

5It furnishes the stimulus of high ideals which we poor, weak mortals need to have ever before us; it teaches our students to venerate what is good, to cherish our best traditions, and strengthens the common bond of the profession.

6It is the fulfillment of a duty – that of cherishing the memories, the virtues, and the achievements, of a class which has benefited the world as no other has, and of which we may feel proud that we are a member.

Figure 2.
The potential contributions of the history of medicine listed by Eugene Cordell (1843-1913) in his 1904 presidential address to the Medical and Chirurgical Faculty of Maryland. (Ref. 8 and17)

Conclusion

To answer the question of why the history of nephrology of the title of this article the following quote dating back to the Scientific Revolution by the English historian, Thomas Fuller (1608-1661) says it all:

> *"History maketh a young man to be old, without either wrinkles or grey hairs; privileging him with the experiences of age, without either the infirmities or inconveniences thereof. Yea, it not only maketh things past, present; but enableth one to make a rational conjecture of things to come."*

Bibliografia

[1] Eknoyan G. Beginnings-The Kidney and Nephrology in Ancient Mesopotamian Culture. Seminars in dialysis 2015 Oct 1;

[2] Dunglison R. A New Dictionary of Medical Sciences and Literature. Boston, Charles Bowen, 1842

[3] Schreiner GE. Evolution of nephrology. The caldron of its organizations. American journal of nephrology 1999;19(2):295-303

[4] Peitzman SJ. Dropsy, Dialysis, Transplant. A short History of Failing Kidneys. Baltimore, Johns Hopkins University Press, 2007

[5] Henry A. Lectures on the History of Medicine. British medical journal 1860 Mar 24;1(169):219-23

[6] Galdston I. The amateur in medical history. The Yale journal of biology and medicine 1946 Jan;18:129-34

[7] Huisman F, Warner JH. (editors) Locating Medical History. The Stories and their Meaning. Baltimore, The Johns Hopkins University Press, 2004

[8] King CR. The historiography of medical history: from great men to archaeology. Bulletin of the New York Academy of Medicine 1991 Sep-Oct;67(5):407-28

[9] McMenemey WH. On medical history and literature. Proceedings of the Royal Society of Medicine 1963 Sep;56:839-49

[10] Galdston I. On the futility of medical history. Canadian Medical Association journal 1965 Oct 9;93(15):807-11

[11] Fye WB. President's page: medical history: a valuable tool to help us frame the present and predict the future. Journal of the American College of Cardiology 2003 Jan 15;41(2):346-9

[12] Jones DS, Greene JA, Duffin J et al. Making the Case for History in Medical Education. Journal of the history of medicine and allied sciences 2015 Oct;70(4):623-52

[13] Dunglison R. History of Medicine. From the Earliest Ages to the Commencement of the Nineteenth Century. Philadelphia, Lindsey and Blakiston, 1872

[14] Garrison FH. Medicine as an Agency in the Advancement of Science, Art and Civilization. Bulletin of the New York Academy of Medicine 1929 Apr;5(4):305-27

[15] Sigerist HE. University education. Bull Hist Med 1940; 8:3-21

[16] Temkin O. An essay on the usefulness of medical history for medicine. Bulletin of the history of medicine 1946 Jan;19:9-47

[17] Stein C. Divining and knowing: Karl Sudhoff's historical method. Bulletin of the history of medicine 2013 Summer;87(2):198-224

[18] Risse GB. Viewpoints in the teaching of medical history. II. Teaching medical history in the 1970's: new challenges and approaches. Clio medica (Amsterdam, Netherlands) 1975 Jun;10(2):133-42

[19] Burnham JC. The past of the future of medicine. Bulletin of the history of medicine 1993 Spring;67(1):1-27

[20] Prioreschi P. Physicians, historians, and the history of medicine. Medical hypotheses 1992 Jun;38(2):97-101

[21] Cordell EF. The Importance of the Study of the History of Medicine. Medical library and historical journal 1904 Oct;2(4):268-82

[22] Pellegrino ED. Educating the humanist physician. An ancient ideal reconsidered. JAMA 1974 Mar 18;227(11):1288-94

[23] Thornton JL. The importance of the study of the history of medicine. Health libraries review 1987 Sep;4(3):139-40

[24] Shedlock J, Sims RH, Kubilius RK et al. Promoting and teaching the history of medicine in a medical school curriculum. Journal of the Medical Library Association: 2012 Apr;100(2):138-41