Surgical History

Paul of Aegina: Landmark in Surgical Progress

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Published Online: December 19, 2002

Abstract. During the Byzantine period the most prominent medical personal- ities were Oribasius, Aetius of Amida, Alexander of Tralles, and Paul of Aegina (Paulus Aegineta). The last of the eclectic Greek compilers, Paul of Aegina (625–690 AD) was born on the island of Aegina and practiced medicine in Alexandria. He was the author of the Epitome of Medicine (seven books), which was first printed in Greek by the Aldine Press in Venice in 1528. The Sydenham Society of London published an English translation by Francis Adams of Banchory between 1844 and 1847. The most noteworthy of his Epitome is the sixth book on surgery. Paul was not only a scribe but also a highly capable surgeon. He was the quintessential student of the best medical authorities: Hippocrates and Galen in Greek and Roman medicine, respectively. He also displayed a peculiar genius in the field of surgery. He gave us novel descriptions of tracheotomy, tonsillectomy, catheterization of the bladder, lithotomy, inguinal hernia repair, abdominal paracentesis for ascites, and many other surgical procedures including re- duction of breast size. He not only influenced those in his own era but had great influence on physicians such as Rhazes, Holy Abbas, Albucasis, Avicenna, and Fabricius ab Aquapendente, who lived in subsequent eras. This historical article emphasizes the role of Paul of Aegina in the history of surgery and provides a comprehensive review of his surgical treatise with original case examples that represent his contributions to surgical prog- ress.

Surely every age ought to endeavor to benefit by the experiments, whether successful or otherwise, of all preceding ones; instead of every generation commencing a new series of trials, and wandering over the same ground in search of truths which had been long ago discovered.—Francis Adams (1796–1861)

The Eastern Empire took over and the Byzantine period began (324 AD) following destruction of the Western Roman Empire, which had been in existence for 500 years. The chief monuments of learning were maintained in Byzantium until Western Europe was fit to take care of them [1]. The solitary thing the Eastern Empire did for European medicine was to preserve something of the language, culture, and literary texts of Greece. The habit of compilation established by the later Greek and Roman writers remained a set custom in Eastern and Western Europe even beyond the Renaissance period. During the next period of more than 1000 years (the Byzantine period), the most prominent medical personalities were Oribasius (325–403 AD), Aetius of Amida (502–575 AD), Al- exander of Tralles (525–605 AD), and Paul of Aegina (Paulus Ae- gineta) [2]. Among these giants, so little is known of Paul of Aegina that it cannot be ascertained in what century he flourished. Moreau and Le Clerc placed him in the fourth century and Vander Linden and Conringius in the fifth; but Albertus Fabricius, Hutcheson, Sprengel, and most of the late writers of the ancient medical history of medicine placed him in the seventh century (625–690 AD) [3].

Paul was born on the island of Aegina and practiced medicine in Alexandria (Fig. 1). He wrote a medical encyclopedia Epitome of Medicine in seven books. In the introduction, Paul explained why he wrote his condensed encyclopedia of medicine [4].

While it would be extremely difficult, not to say impossible, to retain in the memory the general principles of the healing art, and all the particular means advised by the ancients, I have made this abridgement of what there is in the best of these writings. I have collected the cream of whatever others have said concerning the means of preserving health.

He also said that he wrote because physicians of his time simply would not read prolix ancient writers—and Galen or Oribasius were nothing if not prolix.

His Epitome of Medicine

His monumental work (Epitomae Medicone Libri Septem) was first printed in Greek by the Aldine Press in Venice in 1528. A copy of this original book is preserved in Special Collections at the Charles E. Young Research Library of UCLA [5] (Fig. 2). There are only a few Latin translations that have reached us. Of these translations, the one printed in 1551 was Jacobus Gouplus's reworking of the Guinterius translation. The Latin translation printed in 1567 was originally issued in Lyons in 1551, with commentary by Gouplus, who was the editor of the volume. A copy of each translation is preserved in History and Special Collections Division at the Louise M. Darling Biomedical Library of UCLA [6, 7]. An excellent translation into English by Francis Adams of Banchory was published by the Sydenham Society of London between 1844 and 1847 [8]. Each chapter of the text was followed by a brilliant commentary by Adams and by the most important opinions of the Greek, Roman, and Arabian writers on all the medical issues treated by Paul of Aegina. The Epitome was also printed in 1855 with a French translation by René Briau [9].

It is beyond the scope of this article to give a detailed account on the content of each book. Briefly, though, in the first book one can
find everything that relates to hygiene and to the preservation from, and correction of, distempers peculiar to various ages, seasons, temperaments, and so forth. In the second book is explained the whole doctrine of fevers, an account of certain matters relating to them being premised (such as excrementitious discharges, critical days, and other appearances), and concluding with symptoms that are the concomitants of fever. The third book relates to topical affections, from the crown of the head to the nails of the feet. The fourth book treats those complaints that are external and exposed to view and that are not limited to one part of the body but affect various parts. The fifth book is concerned mainly with toxicology and treatment of the wounds and bites of venomous animals; it also addresses the distemper called hydrophobia, persons bitten by mad dogs, and persons bitten by men. Afterward it describes the problems associated with deleterious substances and the preservatives from them. In the sixth book is contained everything relating to surgery, both what relates to the fleshy parts and to the bones. The seventh book is devoted to pharmacology: an account on the properties of all medicines, first of the simple and then of the compounds. The most noteworthy of these books is the sixth book, which is considered to be the best part of his writings (Fig. 3).

Paul was particularly interested in surgery. An examination of his Epitome demonstrates that his sixth book on surgery brought valuable contributions to the history of surgery toward the end of the Eastern Empire. The purpose of the present publication is to supply the reader with a comprehensive review of his monumental surgical treatise enriched by several case examples that represent his original achievements in the pageant of surgical progress.

Paul of Aegina and Surgery

Paul was the quintessential student of the best medical authorities, especially Hippocrates and Galen in, respectively, Greek and Roman medicine; yet he also displayed a peculiar genius with original achievements in the field of surgery. Paul was also the originator of more important surgical procedures than his predecessors, either Oribasius or Aetius. A wide variety of surgical procedures that played a significant role in the history of surgery are presented here.

Paul, as a competent surgeon, furnished prior knowledge regarding vascular surgery. He wrote chapters on “Angiology or section of temporal vessels,” “Arteriotomy,” “On hemorrhage from veins and arteries,” “On aneurysm,” “On the excision of varices,” “On venesection.”

The following lines in Chapter 53 (Book 4), on the arrest of hemorrhage clearly indicates his extensive knowledge on this matter

[10].