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Anaesthesia and surgery in 15th century in Anatolia: Art and Illustrations of Serefeddin Sabuncuoglu

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Summary

Serefeddin Sabuncuoglu is the author of *Cerrahiyyetu'l Haniyye*, a surgical textbook that contains hand-drawn miniatures of many surgical procedures, incisions and instruments. In this 15th century book, Sabuncuoglu has described cauterization procedures, piercing, wound dressing, realigning and splinting of fractures and dislocations as well as the instruments used in operations. The book also contains a chapter about analgesics used at that time. *Anestezjologia i Ratownictwo 2009; 3: 10-12.*

Keywords: Sabuncuoglu, Cerrahiyyetu'l Haniyye, 15th century surgery, Mucerrebname

Although Turks have created one of the world's first written history texts – namely Orhun Inscriptions - in Central Asia at 8th century, it was not before the 14th century that written scientific material was produced in Turkish. The main reason was that before 14th century, the accepted scientific language was Arabic and Persian and scientists preferred to write in these languages in order to be cited by others. The first three written Turkish medical texts can be listed *Hazainüs Saadet*, *Müntehabı Sifa*, and *Cerrahiyyetu'l Haniyye*, which was written by Serefeddin Sabuncuoglu.

Serefeddin Sabuncuoglu was not only the author but also calligrapher and graphic artist of this surgical textbook that contains hand-drawn colored images (miniatures) of many surgical procedures, incisions and instruments. He was born in 1385 in Amasya - a city in mid-Anatolia. The Amasya Hospital where Sabuncuoglu practiced medicine was built in 1308, the year at which the Mongols ended Seljuk rule. In those days it was a very prestigious thing to hold a position as a doctor in a hospital; such jobs were only assigned to the masters of the art as the hospitals also functioned as medical schools. At a time when medicine was taught

through the master-apprentice method, Sabuncuoglu served as physician in the Amasya hospital for 14 years. He died at the age of 85 in 1470. He led a simple life, in which a humble physician criticizing himself, a scientist frequently citing seniors such as Hippocrates (460–370 BC), Galen (131–199 BC), Al-Zahrawi (936–1013) and a tireless scholar writing efficiently and tutoring his students can be witnessed.

Although he has written on different subjects, Sabuncuoglu is best known for three scientific books:

1. *Pharmacognosy*: This book described the qualities of all drugs at that time. It was mainly a translation of *Zahire-i Harzemsahi* from Persian on which Sabuncuoglu added a new chapter to update. His added chapter described the preparation of simple and compound medicines, pastes, laxatives, electuaries, tablets and powders, oils and creams as well as information on where and when to apply them.
2. *Mucerrebname*: (The experiment book): *Mucerrebname* is about the preparation, and application of drugs, which the author experimented with, on animals, patients and on himself. When applica-



Figure 1. Cauterization Therapy for acute migraine.

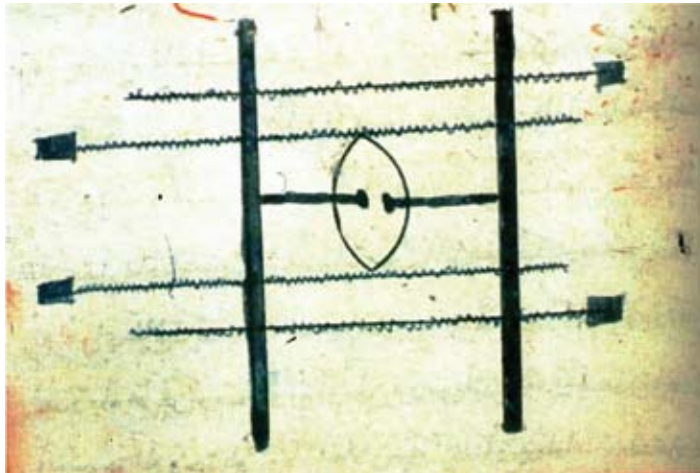


Figure 2. Vaginal speculum drawn by Sabuncuoglu

tion of the drugs was discussed, he used the scientific language that contemporary medical literature employs when presenting case studies. The author in this way probably intended to eradicate all suspicions about applying medication and to guide his colleagues.

3. *Cerrahiyyetu'l Haniyye*: Literary meaning “surgery at the imperial court”, this book is also known as *Cerrahiye-i Ilhaniye*. This most important work of Sabuncuoglu was completed in 1465 and dedicated to Sultan Mehmet, the Conqueror.

Cerrahiyyetu'l Haniyye is the first illustrated and written book in the old Turkish alphabet in the Middle East area where painting, drawing and sculpture were frowned upon by Islamic rules. Despite the Muslim

thinkers' tradition, Serefeddin Sabuncuoglu used his own miniatures, describing the techniques even on female patients. There are three known handwritten copies of the book; one in Bibliotheque Nationale in Paris [1], one in the Fatih library in Istanbul [2] and one in the Istanbul University, Istanbul Faculty of Medicine [3].

Cerrahiyyetu'l Haniyye was re-discovered in 1939 by Suheyl Unver [4]. In 1992, Ilter Uzel, a Turkish medical historian, examined three copies of the book and published them in Turkish, English and Arabic [5].

The book consists of three chapters, 193 topics and 206 pages dealing with many fields of surgery. The first chapter encloses the cauterization procedures that were accepted as the most valid surgical procedures of that

period. Cauterization was used to stop heavy bleeding, especially during amputations. The procedure was simple: a piece of metal was heated over fire and applied to the wound. This would cause tissues and blood to heat rapidly to extreme temperatures causing coagulation of the blood, thus controlling the bleeding, at the cost of extensive tissue damage. Because all symptoms were accepted at that time as an illness, cauterization was prescribed for the symptoms. An example of cauterization therapy is shown in the picture below (Figure 1). The second chapter focuses on splitting, piercing and wound dressing as well as the instruments used in operations. Sabuncuoglu was the first author to describe several gynecological instruments such as vaginal speculum and instruments for the extraction of a dead fetus with detailed drawings (Figure 2) [6]. The last chapter focuses on fractures and dislocations. In this chapter, realigning and splinting is discussed with colorful illustrations.

In the 36th part of the third chapter, Sabuncuoglu describes the narcotic that he used for all his operations. The root used is *Mandragora officinalis*, flesh of which, after being harvested, is grinded and mixed with sweet almond oil. Following a waiting period of

a day and night, one dirhem (equivalent to three grams) is given to fasted adult patient. Dose is adjusted for the pediatric population. This mixture ensures loss of consciousness and then the surgery is commenced.

After several centuries of neglect, Sabuncuoglu is enjoying a recent popularity that he richly deserves. As a pioneer of surgery and research, he has been cited numerous times in the last decades [7-12]. In fact, a recent article about his illustrations in psychiatric treatment methods [13] has led a scientific discussion on whether schizophrenia existed at that time period or not. Certainly what he has achieved centuries ago has impact on contemporary medicine and when he states, **“Keep your compassion separate from your fame and ambition”**, his words of wisdom to his younger students is still valid.

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