



Şerefeddin Sabuncuoğlu: A Pioneer Surgeon of the Ottoman Era

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ABSTRACT

Sharaf al-Dīn (Şerefeddin) Sabuncuoğlu (1385-c.1468) was an innovative surgeon and a prominent illustrator who lived in the Ottoman Empire during the 15th century. His medical treatise, *Kitāb al-Jarrāhiyyāt al-Khaniyya* (*Kitābū'l-Cerrāhiyyetü'l-Hāniyye* [Book of Imperial Surgery]; 1465), is the first illustrated surgical textbook written in Turkish. His book also provides comprehensive information about ancient Greek and Asian knowledge of medicine, including topics on gynecology, neurology, obstetrics, ophthalmology, orthopedics, pediatrics, urology, and vascular surgery, as well as Sabuncuoğlu's own contributions to the field of surgery. Despite not being well recognized in his era, his methods were revolutionary for his time, and many remain valid even today. This review seeks to highlight Şerefeddin Sabuncuoğlu's medical treatise from a historical perspective and to shed light on its influence on modern surgery.

Keywords: 15th century, cauterization, history of medicine, medical illustration, surgery, Turkey

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INTRODUCTION

Surgery has been an important part of medical history. In ancient China, Egypt, Greece, Rome, and India, physician scholars developed different methods for treating wounds, reducing fractures, and stopping hemorrhages. Even during Europe's "Dark Ages" between the 7th and 13th centuries, and thereafter, the Arabs and the Turks continued to practice medicine and surgery with numerous innovations and improvements (1, 2). One of the best examples raised from Anatolia (Asia Minor) at this period was Sharaf al-Dīn Sabuncuoğlu (Tr: Şerefeddin Sabuncuoğlu), an innovative surgeon and a great illustrator who lived in the Ottoman Empire during the 15th century (1–17).

Sabuncuoğlu's medical treatise, *Kitāb al-Jarrāhiyyāt al-Khaniyya* (Tr: *Kitābū'l-Cerrāhiyyetü'l-Hāniyye* [Book of Imperial Surgery]; 1465), is the first illustrated surgical textbook written in Turkish. This book also contains comprehensive information about ancient Greek and Asian knowledge of medicine, including topics on gynecology, neurology, obstetrics, ophthalmology, orthopedics, pediatrics, urology, and vascular surgery, as well as Sabuncuoğlu's own contributions to the field of surgery. Despite not being well recognized in his era, his methods were revolutionary for his time, and many remain valid even today. This review seeks to highlight Şerefeddin Sabuncuoğlu's medical treatise from a historical perspective and to shed light on its influence on modern surgery.

Şerefeddin Sabuncuoğlu and the *Jarrāhiyyāt al-Khaniyya*

Sharaf al-Dīn Sabuncuoğlu (1385-c.1468) was born in the wealthy provincial city of Amasya, in northern Anatolia. He was an influential surgeon and illustrator who served 14 years as a chief physician in the hospital (*dar al-Shifa*) of Amasya in 1465 (5–8, 18, 19). He spoke Arabic, Persian, and Greek and studied Hippocrates, Galen of Pergamon, and Abū al-Qāsim al-Zahrāwī (Albucasis). Sabuncuoğlu authored three books: *Tarjama-i Akrābādihīn* (Tr: *Terceme-i Akraadin*, Translation of Pharmacopoeia), *Mujarrabnāma* (Tr: *Mücerrebname*, Book of Experiences), and *Jarrāhiyyāt al-Khaniyya* (Tr: *Cerrahiyyetü'l-Haniyye*, Imperial Surgery) (4, 6, 12, 14). For a long time, Arabic and Persian served as the *lingua franca* among the scholars in Anatolia, at least until the fall of the Seljuk State, at which time Mehmet I of Karaman (Tr: Karamanoğlu Mehmed Bey) made Turkish the official language. Thus, beginning in the 14th century, medical books were written in Turkish, though few of them remain (1, 3, 4).

One of the most important books of the period is the *Jarrāhiyyāt al-Khaniyya*, Sabuncuoğlu's first medical treatise. He included his own color illustrations of surgical techniques and medical tools. The book was written with Arabic letters in the old Oghuz Turkish and dedicated to Sultan Mehmed II, commonly known as the "Conqueror" (Tr: Fatih). The book was forgotten until 1927 when the Turkish writer and historian of literature, Ali Canip Yöntem (1887–1967), rediscovered it. At first, it was believed to be a good translation of the *Kitāb al-Tasrif* (The Method of Medicine) by Arab physician Abū al-Qāsim al-Zahrāwī. However, a careful analysis revealed 137 different observations and recommendations made by Sabuncuoğlu, making *Jarrāhiyyāt al-Khaniyya* the first illustrated medical treatise of the Turkish literature (1, 2, 4–7, 9, 12–14, 18).

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Figure 1. Miniature painting depicting hermaphroditism, Supplement Turc 693, National Library of France

Jarrāhiyyāt al-Khaniyya consists of three chapters comprising 191 sections: the first chapter focuses on treatment with cauterization, the second chapter is on surgical procedures, and the last chapter is on fractures and dislocations. Every section includes a picture and text describing a process of diagnosis and a surgical technique. The book is remarkable for its three topics related to oncology and its sections about mental illnesses, circumcision, and hermaphroditism (Fig. 1) (2, 5, 9, 10, 13–17, 20).

To our knowledge, three handwritten copies of the *Jarrāhiyyāt al-Khaniyya* remain. One copy is kept in the *Bibliothèque Nationale de France* (National Library of France) in Paris, one in the Fatih Millet Library in Istanbul, and one in the Medical History Department of Istanbul University Çapa Faculty of Medicine. Each copy is unique, and each copy has a different number of pages. These differences may be because two of the copies were written by Sabuncuoğlu himself, but one copy dates to later in the 18th century. In 1992, the Turkish medical historian Prof. İter Uzel conducted meticulous research on the three copies and then published them in Turkish, Arabic, and English (1–4, 6, 7, 9, 11, 13–16, 18).

Although Sabuncuoğlu's illustrations are not artistically significant, they are revolutionary considering Islam's aniconic attitudes prohibiting visual representations of any living being. Sabuncuoğlu drew the surgical instruments used for each technique. He also drew doctors and patients engaged in surgeries, including castration (Fig. 2). His illustrations also include drawings of female surgeons (*ṭabība*, Tr: tabibe) conducting obstetric and gynecologic surgeries (2, 5, 7, 9, 10, 12, 14–16, 18). Until the end of the 18th century, male surgeons prevailed in medical history. Female surgeons often were ignored and treated unequally. By defying the Islamic rules about depicting the human form in art and literature, Sabuncuoğlu offers a glimpse into the important but often unrecognized work of the *ṭabība* (4, 9, 12, 15).

Şerefeddin Sabuncuoğlu's Contributions to Surgery

In the *Jarrāhiyyāt al-Khaniyya*, Sabuncuoğlu describes various surgical treatments, including gynecological, neurological, ophthalmological, orthopedic, otorhinolaryngological, pediatric, plastic, urological, thoracic and vascular procedures. Neurosurgical conditions described in his book include craniospinal trauma, dislocations, headache, hemiplegia, hydrocephalus, low back pain, and sciatica (3, 12–14).



Figure 2. Miniature painting depicting Castration procedure, Supplement Turc 693, National Library of France

He also had an interest in proctology, presenting in his treatise surgical management of hemorrhoids, anal fissures, perianal abscesses, and fistulas. As a pioneer surgeon, he recommended the chest-knee position for his patients, which still is regarded as an appropriate preoperative position. Furthermore, he advised using wine and olive oil as an antiseptic to prevent surgical infections plus a mixture of mandrake root and almond oil for general anesthesia (1, 13).

In addition to his general surgical knowledge, Sabuncuoğlu also could be recognized as an empirical scientist. He describes many of his own observations in the *Jarrāhiyyāt al-Khaniyya*. In his other book, *Mujarrabnāma*, he explains that all novel surgical methods described in the book were initially practiced on animals before applying them to his patients. He also made a major contribution to surgery by describing complications of his surgical treatments. A strict judge of his own techniques, he performed surgical treatments on himself before documenting and illustrating them in his textbook (4, 11, 13, 14).

Sabuncuoğlu also describes various kinds of pain, including sciatica, headache, toothache, cold pain, back pain, eye pain, and throat pain. He recommends alleviating these pain conditions using medicines made from specific herbs and their products. These medicines could be administered as an ointment, cream, taffy, plaster, oral preparation, or lotion (14). In cases where this *materia medica* (medical material) did not reduce pain sufficiently, Sabuncuoğlu used cauterization, a technique of applying a hot, metal tool on specific parts of the body. For example, he has an illustration of a physician applying cauterization for the treatment of sciatica. He also used cauterization for headaches related to sinusitis or migraine (Fig. 3a, b) and low back pain. He noted that gold instruments were best for avoiding infections. However, these tools melted after rewarming, so he opted for instruments made of iron, despite the high risk of infection (14).

In the *Jarrāhiyyāt al-Khaniyya*, Sabuncuoğlu presents various illustrations of his medical tools and the surgical process for each. As an innovative physician, he designed and constructed many of his own medical instruments. For example, he was the first surgeon to use a hollow tube for endoscopy into the upper esophagus and the pharynx. He used a variety of surgical tools to remove foreign



Figure 3. Miniature painting depicting Cauterization of acute headache (a) and Chronic headache (b), Supplement Turc 693, National Library of France



Figure 4. Miniature painting depicting Silver tube used for urinary bladder stone removal, Supplement Turc 693, National Library of France

bodies. He describes a delicate, silver tube inserted into the bladder for urinary bladder stone removal (6, 19) (Fig. 4). Sabuncuoğlu used this tube method for other diseases, specifically in abdominal and otorhinolaryngological procedures (18). Despite not being fully recognized in his own era, the writings and innovations of Şerefeddin Sabuncuoğlu, including the first color-illustrated medical treatise in Turkish, place him among the pioneer surgeons of the 15th century.

CONCLUSION

This article describes the crucial contributions of Şerefeddin Sabuncuoğlu to the field of surgical medicine. Sabuncuoğlu's medical textbook *Jarrāhiyyāt al-Khaniyya* is a comprehensive encyclopedia of ancient Greek and Central Asian medical knowledge, as well as his own innovative techniques and treatments. Today, Sabuncuoğlu is recognized as a pioneer surgeon and great medical illustrator of the Ottoman period.

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