

# ***Three Important Anatomists in the Transition from the Ottoman Empire to the Turkish Republic: Hasan Mazhar, Berkol and Zeren***

***Osmanlı İmparatorluğu'ndan Türkiye Cumhuriyeti'ne Geçiş Dönemindeki Üç Önemli Anatomist: Hasan Mazhar, Berkol ve Zeren***

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## **Abstract**

### **Aim**

The aim of this study is to examine the change and development of medical anatomy through the short autobiographies of three respected anatomists (Hasan Mazhar Pasha, Nurettin Ali Berkol and Zeki Zeren), who shed light on anatomy education with their studies in the field of medical anatomy in the last periods of the Ottoman Empire and the establishment of the Republic of Türkiye. These three intellectual scientists have worked devotedly for the development of the country at the scientific, political, social, and cultural level in the country under wars and change of management.

### **Keywords**

Hasan Mazhar Paşa, Nurettin Ali Berkol, Zeki Zeren, anatomi, tarih, Türkiye

## **Özet**

### **Amaç**

Bu çalışmanın amacı, anatomi alanındaki çalışmalarıyla anatomi eğitimine ışık tutan üç saygın anatomistin (Hasan Mazhar Paşa, Nurettin Ali Berkol ve Zeki Zeren) kısa otobiyografileri üzerinden Osmanlı İmparatorluğu'nun son dönemlerinde ve Türkiye Cumhuriyeti'nin kuruluşunda tıbbi anatominin değişim ve gelişimini incelemektir. Bu üç aydın bilim insanı, savaşlar ve yönetim değişikliği altında ülkenin bilimsel, siyasi, sosyal ve kültürel düzeyde kalkınması için özveriyle çalışmışlardır.

### **Anahtar Kelimeler**

Hasan Mazhar Paşa, Nurettin Ali Berkol, Zeki Zeren, anatomi, tarih, Türkiye

## INTRODUCTION

The last periods of the Ottoman Empire faced many problems in the fields of medicine and education, as in every other field. The reasons for this situation are diverse and multidimensional. During this difficult period, physicians and medical educators have worked devotedly to modernize medical education and practice in the country. These studies continued increasingly during the transition to the Republic of Türkiye and they pioneered the development of today's medical discipline. The aim of this study is to evaluate and present the development and change of medical anatomy is to examine the short autobiography of three respected anatomists (Hasan Mazhar Pasha, Nurettin Ali Berkol and Zeki Zeren) who have shed light on anatomy education with their studies in the field of medical anatomy in the last periods of the Ottoman Empire with the establishment and continuation of the Turkish Republic.

In the Ottoman Empire, education in medical schools in the Madrasa period, which included the period starting from the establishment of Gevher Nesibe Dârüşşifâ and Medical School in Kayseri in 1205 and ending with the opening of the Tıbbane and Cerrahhane-i Amire on 14 March 1827. Education was carried out within the master-apprentice relationship in this period. It was maintained within the framework of its social structure and religious beliefs. Therefore, anatomy education from the beginning of the Madrasa period to the middle of the period could not progress much (1,2). Şemseddin-i İtâkî, who lived in the 17th century, and Mehmed Atâullah Efendi (Şânizâde), who lived in the 18th century, were among the leading figures in the field of medicine of this period. Teşrihu'l-Ebdân and Tercümân-ı Kibâle-i Feylesûfân, the first illustrated anatomy book written in Turkish by Şemseddin-i İtâkî in 1632, is also known for the first use of Turkish anatomical terms. His work, "Hamse-i Şânizâde", which is considered the most important of Şânizâde's works, had a great share in laying the foundations of modern medicine in these lands. The first volume of the work, prepared in five volumes, is Mir'atü'l Ebdân Fi Teşrih-i A'za'il-i İnsan, the first anatomy book prepared in a modern sense. The reason why this book was met with interest and followed by Western medical authorities is that it is a work that pioneers the transition from the classical Ottoman understanding of medicine to modern medicine in the Ottoman geography (1-4).

In the period from the Medicine School opened in 1827 to the 1870s, many problems had to be faced in order for medical education to reach a certain standard. These include problems related to the location of the medical faculty,

insufficiency of the teaching staff and the fact that instructors are brought from abroad, prejudices that need to be broken for cadaver dissections in anatomy education, difficulties in determining and maintaining the training curriculum and programs, the uncertainty of the language of education, the inadequacy of educational materials generally procured from abroad, and difficulties in acquisition can be considered. During the 100-year period, from the 1870s to the 1970s, these three anatomists played an active role in the modernization of medicine and the establishment of terminology in the country (1,2).

### HASAN MAZHAR PASHA (1845 – 1920)

After graduating from Istanbul Darülfünun (University), Faculty of Medicine, he specialized in anatomy and surgery in Paris between 1871-1874. Hasan Mazhar, who returned to his country immediately after becoming a specialist, participated in the Montenegrin, Serbian and Russian wars as a surgeon. In 1878, he returned to the Istanbul Military Medical School and was appointed as an assistant dissection (Associate Professor). In 1879, he was given the title of dissection teacher (Professor of Anatomy) (Figure 1<sup>4</sup>) (2,5-8).

When Mazhar Pasha returned to his homeland, medical education was given in French. He and a group of his friends made studies on this subject, arguing that the lessons should be given in Turkish. He provided an important service in the preparation and use of "Lügat-ı Tıp" (Medical Dictionary) by finding the Turkish equivalents of many medical terms, especially anatomy. Turkish anatomy has been under the influence of Mazhar Pasha's anatomy terms for many years. Hasan Mazhar Pasha is the person who had a say in the establishment of modern anatomy in Türkiye (2, 8-14)



**Figure 1.** Hasan Mazhar Pasha (14)

### NURETTİN ALİ BERKOL (1881 – 1955)

After graduating from Istanbul Darülfünun (University), Faculty of Medicine, he was entitled to receive the rank of captain. He went to France in 1907 to increase his knowledge of anatomy and worked at the Paris Medical Faculty for two years. While abroad, he learned the methods of storing cadavers in ice rooms and protecting them with formol injection from the jugular vein (Figure 2<sup>12</sup>) (2,15,16).

After the Balkan War started in 1912 and the faculty was suspended, he joined the army and worked in various hospitals in the country (Skopje, Thessaloniki, Hadımköy, Çanakkale, Kabataş, Haydarpaşa). Later, he left his military service and was appointed as the chief of the Medical Faculty Dissection (Anatomy) Laboratory. With the start of World War I, he joined the army again and worked in hospitals in Konya and Istanbul. Returning to the university in 1917, he was appointed as a professor. He was elected as a deputy from Istanbul in 1927 and returned to the Faculty of Medicine in 1931 after serving as the deputy chairman of the Turkish Grand National Assembly for three years. In 1933, with the University Reform in Türkiye, he chaired the board formed to translate the terms in the field of anatomy into Turkish. His book titled "Osmanlıca Anatomi Sözlüğü ve Türk Anatomi Terimleri (Ottoman Anatomy Dictionary and Turkish Anatomy Terms)", published in 1946 made a great contribution to Turkish anatomy terminology (2,15-18).

Berkol, who was a student of Hasan Mazhar Pasha, who pioneered the establishment of modern anatomy in the country, was influential in the development of anatomy teaching and research, and became the leader in the development of cadaver dissection by modernizing the dissection room, especially in the Republican period (18).



**Figure 2.** Nurettin Ali Berkol (12)

### ZEKİ ZEREN (1900 – 1973)

He graduated from Istanbul Darülfünun (University), Faculty of Medicine in 1923. Between 1923-1927, he worked as an assistant and chief assistant in anatomy and then surgery clinics. Afterwards, he worked as a surgeon and chief physician in city hospitals in Çankırı and Zonguldak. He returned to Istanbul University Faculty of Medicine with the University Reform in 1933 and worked at the Anatomy Institute under the direction of Nurettin Ali Berkol. In the same year, he was included in the board formed for the Turkish translation of Anatomy terms (Figure 3<sup>19</sup>) (2,17,20,21).

Going abroad for educational purposes in 1939, Dr. Zeren worked for six months at the Paris Faculty of Medicine. During his academic life, he regularly visited various medical faculties in Europe and exchanged views on innovations in the field of anatomy (2,19,21).

Zeki Zeren is one of the faculty members who were expelled from the universities in the 1960 coup. At that time, he undertook the duties of the 12th term deputy in the Turkish Grand National Assembly and the Chairman of the Health and Social Assistance Commission (19,20).



**Figure 3.** Zeki Zeren (19)

Zeki Zeren has accomplished a great deal in determining and using Turkish equivalents for Latin Anatomy terms instead of Ottoman Turkish. Zeren has made important contributions to the teaching, research, and development of anatomy in Türkiye and to the development of practical dissection studies. He made efforts to establish academic relations with the anatomists of European countries, editorial duties with internationally respected journals, and for Türkiye to take part in international scientific

organizations. He lexicalized these terms by publishing his important book "Latin-Turkish-Ottoman Anatomy Dictionary and Turkish Anatomy Terms" in 1946. At the same time, Dr. Zeren should also be considered as an activist in the fields of culture and civilization in his own time (2,20, 22-24).

### CONCLUSION

From the perspective of history, Türkiye, which ended an empire and passed to the republic, has realized a rapid renewal and change. Three anatomists living in this transition period not only received medical education in the European countries where they went for education but also analyzed the socio-cultural structure of these countries and tried to put modernized medical education into practice in Türkiye right after they returned to the country. These three intellectual scientists have worked devotedly for the development of the country at the scientific, political, social, and cultural levels in the country under wars and regime change. They were very influential in the formation of an identity in the new Republic of Türkiye, especially with their contributions to the development of Turkish terminology in the field of medicine.

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