



## ORHAN ABDI (KURTARAN) AND HIS THESIS ON SPINAL SURGERY

### ORHAN ABDİ (KURTARAN) BEY VE OMURGA CERRAHİSİ İLE İLGİLİ İLK UZMANLIK TEZİ

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#### SUMMARY:

Orhan Abdi was a surgeon who lived between 1877 and 1948. After graduation from the Military School of Medicine, he went to Germany to specialize in surgery. After completion of his specialization he submitted his thesis, which was related to spinal surgery. He was Professor of Orthopedics and Professor of Surgery in the Second Department of Surgery in Darülfunun School of Medicine between 1909 and 1933. He wrote a book on surgery entitled "Surgical Operation". In this article, the biography and thesis of Orhan Abdi are reviewed.

**Key words:** History of medicine, Orhan Abdi, spine surgery.

**Level of Evidence:** Biography, Level V

#### ÖZET:

Orhan Abdi Kurtaran (1877-1948), 1898'de Askeri Tıbbiye'den mezun olmuş daha sonra cerrahi alanında ihtisas yapması için Almanya'ya gönderilmiş bir hekimimizdir. Orhan Abdi Bey, Almanya' daki ihtisasının ardından omurga cerrahisi ile ilgili bir tez çalışması yapmıştır. 1909-1933 yılları arasında Darülfunun Tıp Fakültesi' nde önce Ortopedi, sonra İkinci Cerrahi Kliniği hocalığını üstlenmiş olan Orhan Abdi Bey'in "Ameliyat-i Cerrahiye" adlı bir ders kitabı bulunmaktadır. Bu çalışmada Orhan Abdi Bey'in hayatı ve tez çalışması gözden geçirilecektir.

**Anahtar Sözcük:** Tıp tarihi, Orhan Abdi Kurtaran, Omurga cerrahisi.

**Kanıt Düzeyi:** Biyografi, Level V

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## INTRODUCTION:

Surgical lectures, including spinal surgery, were begun in Turkey in the last years of the 19<sup>th</sup> century. In this period, a number of medical doctors were sent abroad for specialization, and when they returned they worked in the Medical School of Gülhane Clinical Instruction Hospital<sup>1-3</sup>. In this period, Mr. Orhan Abdi received surgical training abroad, focusing on orthopedics. When he returned, although he initially worked as an orthopedics specialist, he also undertook the chieftainship of surgery clinics. The life of Mr. Orhan Abdi, his thesis as part of his specialization, and his studies on spinal surgery will be reviewed in this article, to enlighten the history of spinal surgery in Turkey.

## AUTOBIOGRAPHY OF MR. ORHAN ABDI:

Mr. Orhan Abdi (Figure-1), who was born in 1875, completed his elementary, secondary and medical training in Istanbul. After working as a surgical assistant in Gülhane Clinical Instruction Hospital for one and a half years following his graduation, he was sent to Germany. He worked with the surgeon and orthopedist Prof. Dr. Max Schede at Bonn University, and prepared a 22-page thesis on spinal surgery (*Über einen fall von chronischer arthritis ankylopoetica der wirbelsaule: Fraktur der wirbelsaule und quetschung der cauda equina*) under the supervision of Prof. Sick<sup>4</sup>. The beginning of this thesis includes an autobiography of Mr. Orhan Abdi:

“I am Orhan Abdi. I was born the son of Hasan Abdi, who was a trader, in the city of Manastir in Albania on 9 March 1875, with Turkish nationality. After completing my elementary education at the public school in Istanbul and

completing high school in March 1892 at Eyüp Sultan, I continued to Çengelköy Medical School and then academia. By completing my twelve semesters of training, I obtained the medical doctor diploma on 21 September 1898.



**Figure-1.** Orhan Abdi Kurtaran

I worked as an assistant in Gülhane Hospital with Rieder Paşa for approximately 1.5 years. I was sent to Germany in the spring of 1900 and received training at Bonn University for one year. I worked as a volunteer with Prof. Dr. Hoffa for one year. In the following six months, after working in the Orthopedics factory in Bonn Eschbaum in 1902, I worked as an assistant in the second surgical clinic in Hamburg Eppendorf Hospital as an assistant doctor with Dr. Sick, the clinic chief, in August 1902. I am presenting this Ph.D. thesis under the supervision of Dr. Sick, to whom I am currently the assistant.”

After successfully completing his thesis, Mr. Orhan Abdi returned to Gülhane Clinical Instruction Hospital, and worked there from 1905–1908. During this time, the name of Orhan Abdi was known in relation to surgery and war surgery from 1906–1908.

Mr. Orhan Abdi worked in the Istanbul Ottoman University Medical School from 1909–1933. Initially, he gave lectures on “Clinical Instructions of Orthopedics and General Surgical Operation”. After 1912, he performed

the chieftainship of the Second Surgery Clinic. After the surname law was passed in 1934, he received the Kurtaran surname. He passed away on 22 February 1948<sup>1-3</sup>.

Although he was quite talented as a surgeon, he was not very productive in terms of publications. In his only book, published in 1913 and titled “Surgical Operation” (Figure-2), the descriptions of a number of diseases in neurosurgery and orthopedics, and their surgical treatments, are of note<sup>4</sup>.

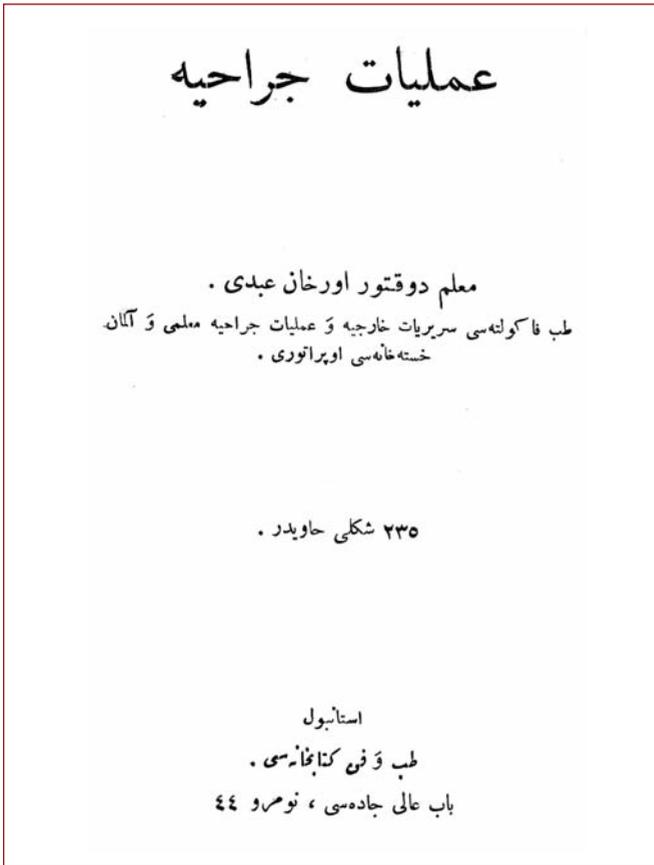


Figure-2. The inner cover of the book “Surgical Operation”, written by Mr. Orhan Abdi.

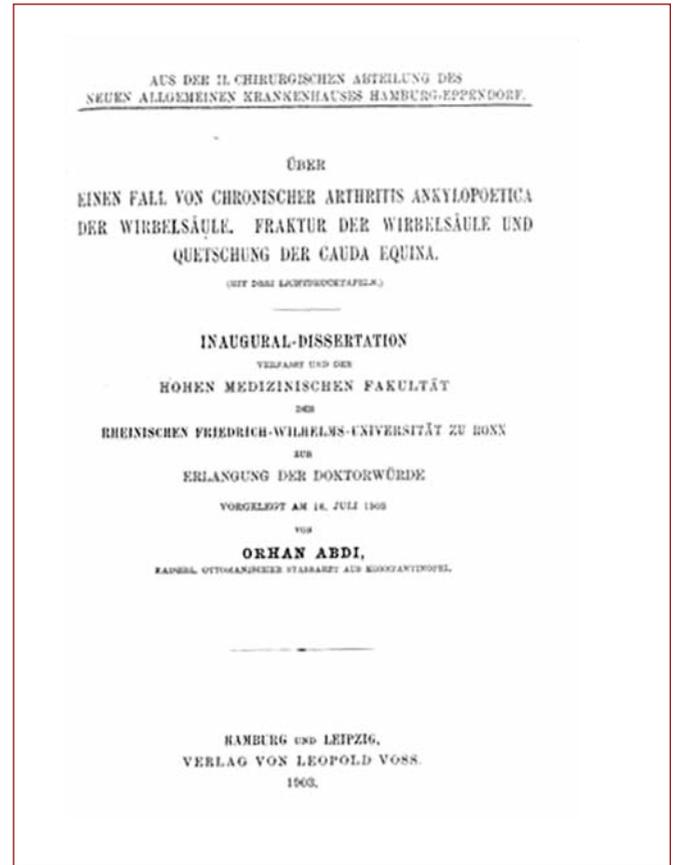


Figure-3. The cover of Mr. Orhan Abdi's thesis.

## MR. ORHAN ABDI'S SPECIALIZATION

### THESIS:

Mr. Orhan Abdi's thesis was published in 1903 with the title “Einen Fall von Chronischer

Arthritis Ankylopoetica der Wirbelauele. Fraktur der Wirbelsaule und quetschung der Cauda Equina” (Concerning the spinal fracture and cauda equina compression of a case with chronic ankylosing spondylitis) (Figure-3).

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His thesis was given under the supervision of Prof. Dr. Bier of the New General Hamburg Eppendorf Hospital Second Surgical Clinic, Bonn Friedrich Wilhelm University Medical School Faculty in 16 July 1903, and in the same year it was printed as three volumes in the Leopold Voss Press.

The thesis begins with the statement “This is dedicated to my highly meritorious Master Rieder Paşa, with gratitude and respect”.

After the autobiography of Mr. Orhan Abdi at the beginning of the thesis, there is a page that includes anterior–posterior, lateral and sagittal cross-sectional drawings showing the spinal involvement of ankylosing spondylitis, and another following page that includes a radiographic photograph of a coxofemoral joint which is completely ankylosed, and a schematic including a lateral view of the vertebra.

Mr. Orhan Abdi’s thesis includes the disease progression and autopsy findings of a male patient, who was 46 years old and worked in the cattle trade, and who died during the follow-up period due to ankylosing spondylitis in the clinic in which Mr. Orhan worked. The thesis is dated only ten years after this disease was described by important authors, such as Marie, Strümpell, Bechterew, and Baumler. At that time, the disease was not fully understood and had many names, and so discussion was ongoing and active. Mr. Orhan Abdi made significant contributions due to his close analysis of the tissue changes and the cause-effect relationship of the disease.

When the definitional differences of the above-mentioned authors were interpreted by Mr. Orhan Abdi, and when he also considered his

own results, he found that Strümpell’s definition of “ankylosing inflammation of the vertebrae” coincided with his own studies.

According to the thesis, a spinal fracture that developed as a result of manipulations made to that patient in order to provide motility to the hip joints made the clinical presentation more complex. Mr. Orhan Abdi stated at the beginning of the thesis that, since the patient died very quickly during follow-up of the compression injuries that developed after first and second lumbar laminectomy to relieve the cauda equina compression, it was regrettable that he was not able to analyze the changes in this region.

However, the amount of degeneration that developed due to the disease in the other big joints that were analyzed was shown to be the most of all the cases that were defined at that time. Ankylosis formed at 90° of flexion in both hip joints, and although the motility opening was increased in the right hip with the previously applied forces, an unsteady joint was encountered.

The patient, who had nothing of note in his own history or his family history, was hospitalized on 7 June 1900. He had rheumatic attacks aged 25 and 35, and recovery was obtained with treatment. Since the age of forty, he experienced increasing induration in his back and lower back. Picking an object up from the floor became increasingly difficult for the patient, spinal curvature formed, and visualization forwards was limited. He also had difficulties moving his head in the last two years.

An inspection of the patient was carried out and the condition of the patient was described in

terms of skin, muscle, bone and the joints, and the motility range of the joints was evaluated.

According to the patient's records, treatment was begun after the diagnosis of iatrogenic fractures in the first and second vertebrae with cauda equina compression. There was no apparent correction with conservative treatment, and so he received laminectomy and decompression surgery with chloroform anesthesia on 28 January (Figure-4).



**Figure-4.** Figures from Mr. Orhan Abdi's thesis.

The operational technique, the damage to the spinal cord, and the compression of the neural structures of the fractured fragments leading to the damage, were defined in detail. Although there was an increase in the patient's muscle force evaluations, and other positive improvements, such as feeling in the patient's feet in an examination on 12 February, weakness in the leg and detrusor muscles continued. The

compression wound in the trochanter region was deep and he was still experiencing muscle necrosis. The patient passed away after a sudden decrease in his heart rate on 17 February.

After this, detailed autopsy findings were given in the thesis. By defining the pathological conditions causing motility limitation in the knee and hip joints, the ankylosis formation was taken for pathological evaluation. While observing the damage that the fracture caused in the spinal cord, it was also noticed that the intervertebral foramen had not shrunk, despite the severe ankylosis. No effects were observed on the other internal organs or small joints. In general, all the observed findings were discussed by comparison with the definitions in the articles of Bechterew, Strümpel and Marie.

In the discussion, it was stated that a number of infectious diseases, such as rheumatic fever and gonorrhoea, developed secondarily in terms of their etiology, and the idea that the disease was focused on the lower back area was supported, as opposed to the idea that the disease shows ascending progression of the localization. By rejecting Marie's suggestion of loss in the reflexes and Bechterew's suggestion of neurological involvement, he defended the idea asserted by Strümpell that the disease affects the skeletal system and that no problems are encountered in neural tissue. The involvement of the costovertebral, sternoclavicular and hip joints was discussed, and the intervertebral, interspinous, longitudinal, and yellow ligaments, bone formation and radiological findings were defined. It was pointed out that there was no destruction in the vertebral body, and that bone formation was only observed in the motile regions of the spine.

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The publication of only three studies, by Bechterew, Marie and Leri, on the necropsy dissection of those kinds of cases prior to the publication of his thesis shows the importance of his work. Also, Mr. Orhan Abdi's evaluation of a case complicated by a postsurgical fracture increases the value of his thesis.

At that time, different ideas were asserted regarding the treatment of this disease. Contrary to Leyden, Goldscheider and Oppenheimer, who were defending electrotherapy, Bechterew claimed that it worsened the situation. Hydrotherapy was also being administered in various bath and hot spring hospitals. Baumler stated that the loaded forces on the spine can be decreased with bed rest and thus, despite the development of curvature due to gravity, the development of ankylosis in a more appropriate posture should be provided. Also, in the early period, the use of an extension brace made of materials including a metal that was different to usual, and treating in a way that included the head, were first tried by Schede, and were also suggested by Mr. Orhan Abdi.

At that time, when surgical treatment of advanced cases was difficult, hip resection was suggested. Manipulation and plastering under anesthesia were the administered treatment for difficult cases. In the final page of the thesis, it was suggested that the disease can occur with different characteristics, as an inference from the characteristics that were emphasized in the case presentations of other doctors describing this disease. He also included a discussion of the different types and definitions of their patients. He stated that more comprehensive studies should be made on this disease of unknown etiology, and that his own study would contribute to the literature in this manner.

## CONCLUSION:

Mr. Orhan Abdi received training that was unique. When he was sent to Germany with a scholarship from the sultan, as well as working with Hoffa, Schede and Sick, he also worked in a factory that produced orthopedic recovery material for one year. Orhan Abdi, who was giving lectures on general surgery, had the responsibility of the second surgery service after leaving Cemil Topuzlu medical school<sup>3</sup>.

Orhan Abdi's specialization thesis is quite extraordinary for its time. This thesis is an important thesis concerning spinal surgery, and it should be remembered in the history of spinal surgery.

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