



A PIONEER OF SPINE AND MEDULLA SPINALIS SURGERY: PROF. NURHAN AVMAN, M.D.

*OMURGA VE OMURİLİK CERRAHİSİNDE BİR ÖNCÜ:
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SUMMARY:

Dr. Nurhan Avman (1928–1988) worked in the Neurosurgery Department of Hacettepe University between 1960 and 1965, and in the Neurosurgery Department of Ankara University between 1965 and 1988.

Dr. Avman not only established modern neurosurgery and microsurgery in Turkey, but succeeded in carrying out many contemporary spine and spinal cord procedures. He was a pioneer of many novel spine interventions in Turkey.

In this article, Dr. Avman's spine and spinal cord surgery-related studies will be reviewed.

Key words: History, Nurhan Avman, spinal cord surgery, spine surgery, history

Level of Evidence: Biography, Level V

ÖZET:

Dr. Nurhan Avman (1928–1988), 1960-1965 yılları arasında Hacettepe Üniversitesi, 1965- 1988 arasında ise Ankara Üniversitesi Tıp Fakültesi Nöroşirürji Anabilim Dalında görev yapmıştır. Dr. Avman çalıştığı dönem boyunca modern nöroşirürji ve mikrocerrahinin gelişiminde etkin rol oynamakla kalmamış, günün koşullarına uygun omurga ve omurilik cerrahi girişimleri de uygulamış, bu girişimlerin bazılarında ülkemizde öncülük etmiştir. Bu çalışmada Dr. Avman'ın omurga ve omurilik ile ilgili çalışmaları gözden geçirilecektir.

Anahtar Sözcük: Nurhan Avman, omurga cerrahisi, omurilik cerrahisi, tarih

Kanıt Düzeyi: Biyografi, Düzey V

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INTRODUCTION:

In Turkey, the history of spinal and medulla spinalis surgery is quite old. In the 19th century, a laminectomy performed on a Pott case by Cemil Paşa is accepted as the first spinal surgery²⁵. While similar surgeries were being performed by general surgeons until the 1920s, the first spinal cord tumor approach was performed by Dr. Abdulkadir Cahit in 1924, and the first spinal fusion was carried out by Dr. Mim Kemal in 1925. These initiatives were accepted as turning points of spinal surgery^{27,28}. In the 1940s, in particular, congenital stenosis studies by Dr. Sarpyener had worldwide repercussions³⁰. Since the 1960s, spinal surgery has begun to be performed by neurosurgeons and orthopedists²⁹. The development of spinal surgery in Turkey is parallel to the development worldwide³².

In 1960, Dr. Nurhan Avman returned from America and began to work in Hacettepe. He was interested in spinal and medulla spinalis surgery within the context of general neurosurgery, and was the pioneer of many applications. The aim of this article is to focus on Dr. Avman's studies on spinal and medulla spinalis surgery, on the 25th anniversary of his death.

BIOGRAPHY OF DR. NURHAN AVMAN:

Nurhan Avman (1928–1988) was born in Tekirdağ in 1928 (Figure-1). After completing his primary and secondary school education in various Anatolian cities, he graduated from the science department of Samsun High School in 1946 and went to Istanbul Medical School. Young Avman graduated from the Medical School of Istanbul University in 1952. After his military service, lasting until December 1953,

he went to America. Dr. Nurhan Avman trained in the USA between 1954 and 1960¹⁴.



Figure-1. Nurhan Avman (1928–1988).

Dr. Avman first worked as an intern in the surgical part of The American Hospital of Chicago, Chicago, Illinois for one year, and then as a general surgical assistant for one year. After that, he worked in The Lahey Clinic Neurosurgery Clinic, Mary Hitchcock Memorial Hospital and Veterans Administration Hospital, and worked as an Assistant Professor and Research Fellow in the Children's Hospital Boston and Brigham & Women's Hospital, part of the Harvard Medical Center¹⁴.

Dr. Avman worked in the Neurosurgery Clinic of Hacettepe University between 1960 and 1965 and became an Associate Professor in 1964. Prof. Dr. Avman played a major role in neurosurgery developing and becoming widespread in Turkey in this period.

SPINAL AND MEDULLA SPINALIS SURGERY APPLICATIONS OF DR. NURHAN AVMAN:

While Dr. Avman was working in Hacettepe University between 1960 and 1965, he was interested in lumbar and cervical disc hernias, syringomyelia, basilar invagination and spinal cord trauma^{1,2,13,22,23,33}. It can be seen in the publications from this period that myelography was used for diagnosis of lumbar disc hernia²². In an article he wrote, he focused on the reasons for failed disc surgery, and emphasized that no sign of hernias could be found by myelography in the foraminal and extraforaminal regions (Figure-2)¹. Dr. Avman published a wide clinical series on lumbar discectomy that contained 295 cases in 1971¹³. In another study, Dr. Avman focused on the indications for disc surgery⁴.

Dr. Avman was the Head of the Department of Neurosurgery of the Medical School of Ankara University between 1965 and 1988. Dr. Avman died of a heart attack on 19 February 1988. Dr. Avman contributed to the training of more than 50 neurosurgeons during his working life.

In the late 1960s and early 1970s, in particular, it seems that he performed cervical and lumbar discography, which was popular during this period, on chosen cases (Figure-3,4,5)¹².

In 1964, Dr. Cloward, invited by Dr. Avman, performed the first Cloward operation with Dr. Avman in Ankara. This was the first Cloward operation in Turkey^{24,26,30,31}. Although Dr. Avman was the first surgeon to perform the Cloward operation in Turkey, he used this approach for limited cervical discs, mostly for cervical trauma^{2,19}. In the 1970s and 1980s, it seems that the Cloward operation was mostly performed for cervical trauma, depending on the situation. Fixation was performed with fiber by posterior

decompression if a posterior approach was indicated, and laminectomy was performed for thoracolumbar fractures²¹.

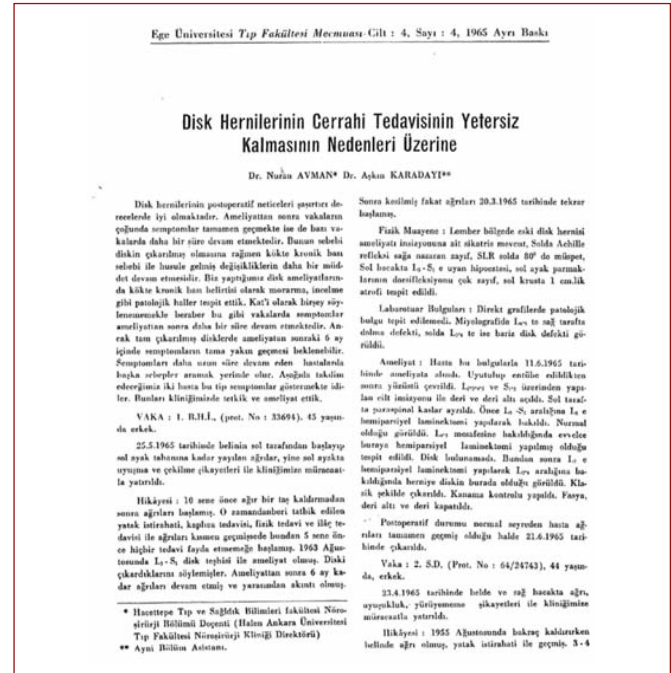


Figure-2. The publication in which Nurhan Avman evaluated surgical treatments for disc hernias.

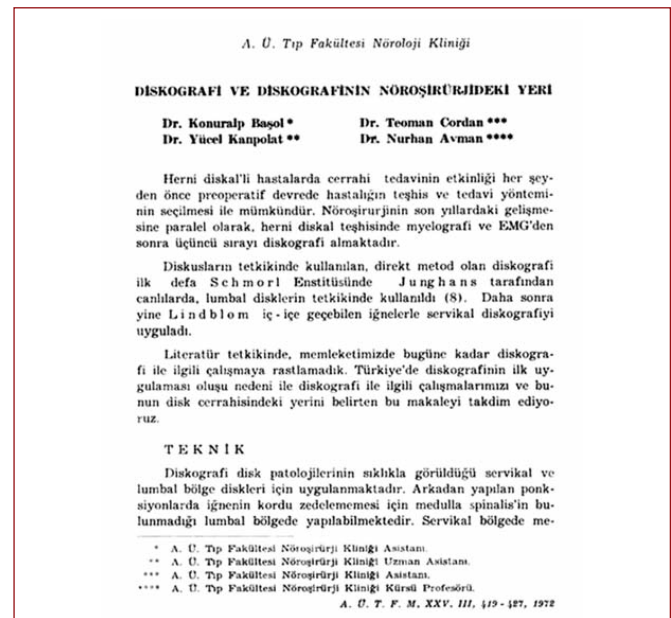


Figure-3. Publication on discography by Nurhan Avman in 1972.

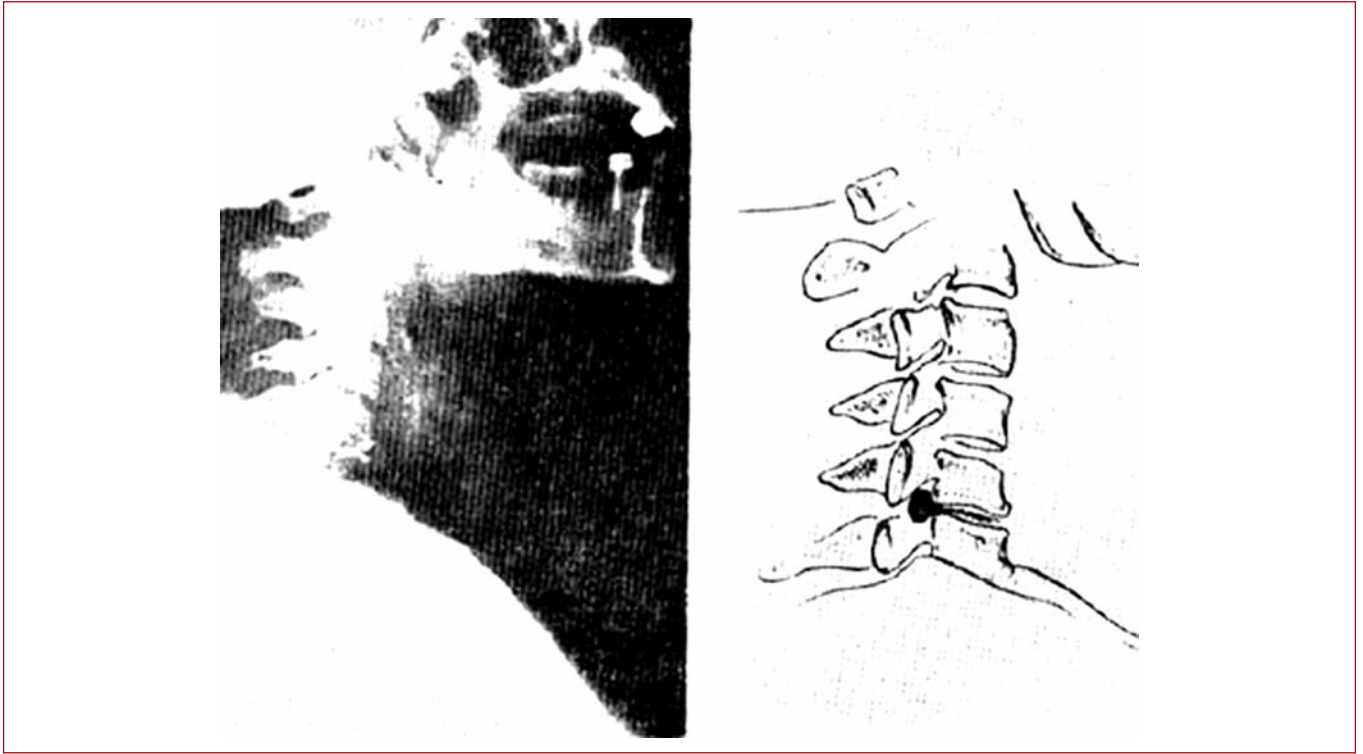


Figure-4. Images of cervical discography performed by Nurhan Avman.

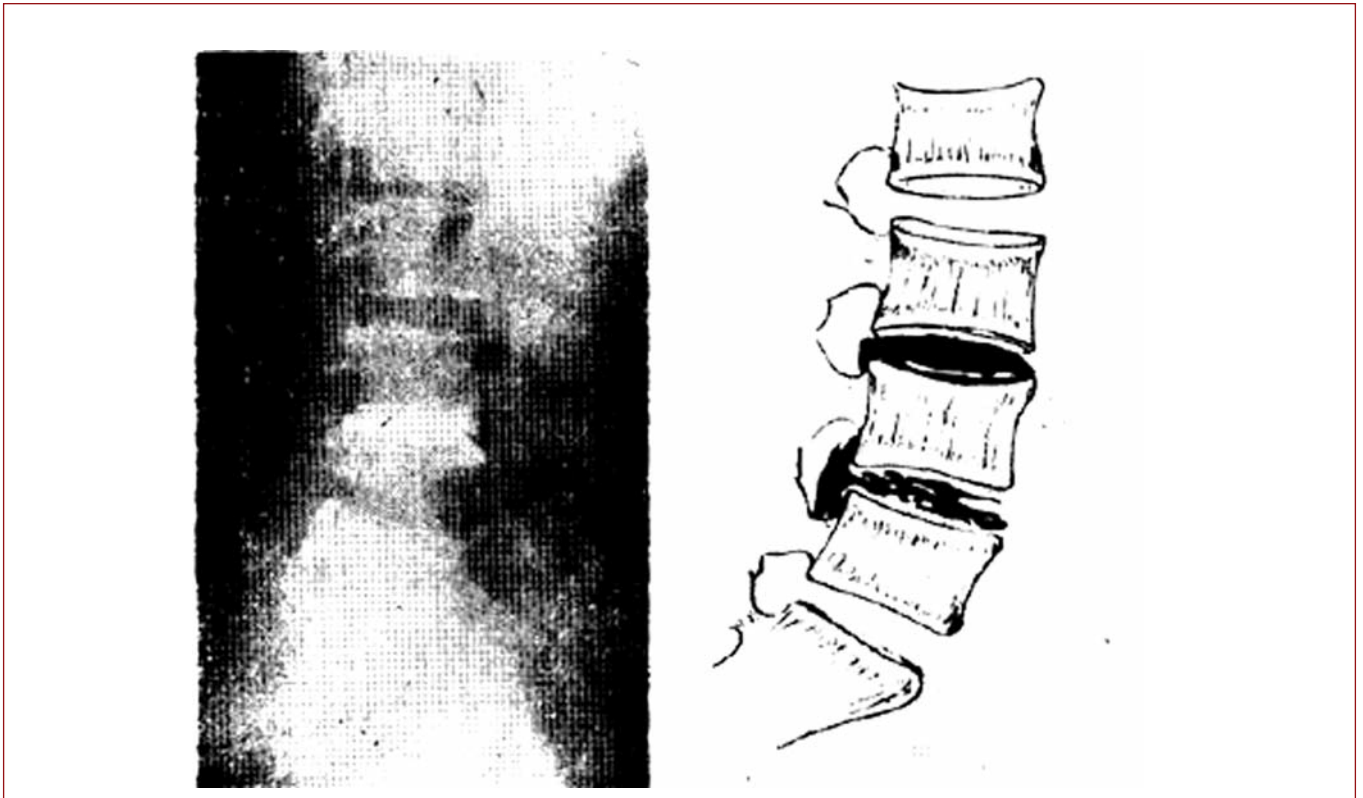


Figure-5. Images of lumbar discography performed by Nurhan Avman.

In Ankara University, where Dr. Avman was the head of the department, cervical discectomy with a posterior approach and the laminoforaminotomy technique in a sitting position had been applied for many years¹⁹. Similarly, surgeries cutting the dentate ligament were performed following laminectomy and durotomy, known as “Kahn surgery”, for cervical spondylitic myelopathy.

Dr. Avman spent the period from 1965–1988 at Ankara University. After 1972, Dr. Avman began using microsurgery applications in Turkey for the first time. After that time, spinal surgery was performed by microsurgery⁵⁻¹¹. After 1975, when microsurgery had begun to be used effectively, successful results were reported for spinal cord tumors and spinal cord AVM by a microtechnique¹⁵⁻¹⁸. In this period, interventions were carried out for many different spinal pathologies (Figure-6)^{16,20}.

In 1976, Dr. Nurhan Avman published 184 tumor cases that received surgery between 1965 and 1974. In the same publication, Dr. Avman reported that he used microsurgery in seven surgical cases¹³.

One of the operations performed in this period was postero-antero-lateral medulla spinalis decompression carried out for Pott and spinal tumors^{3,4}. Avman used the lateral approach for spinal tumors until the last days of his career. After the 1970s, Pott and spinal tumor surgical treatments were performed using this approach³³.

PUBLICATIONS OF DR. NURHAN AVMAN ABOUT SPINE AND MEDULLA SPINALIS SURGERY:

Although Prof. Dr. Avman had a career that mainly focused on brain tumors and cerebrovascular surgery, he also published many articles about spinal and medulla spinalis surgery²⁶.

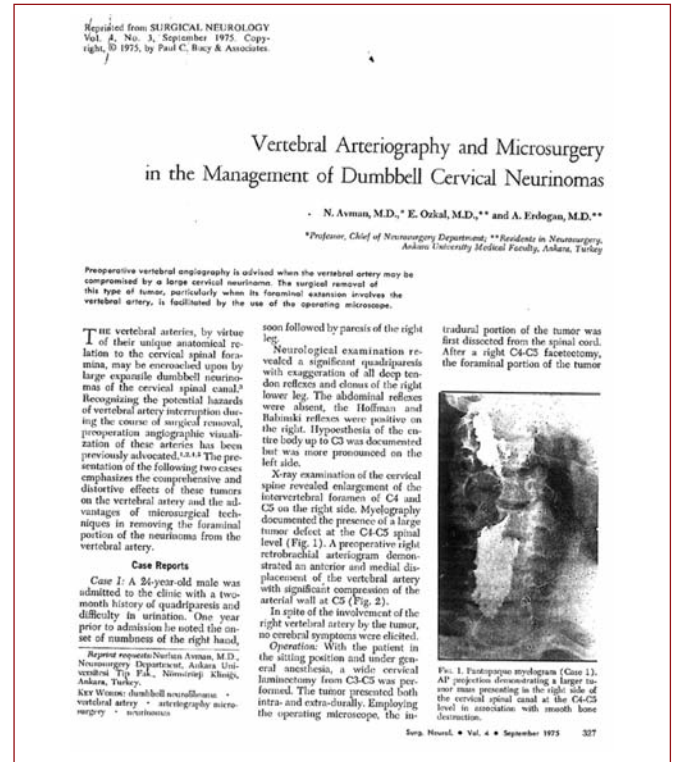


Figure-6. Article by Nurhan Avman about the surgical treatment of Dumbbell cervical neuromas.

The most important articles are as follows:

1. **Avman N, Karadayı A:** Disk hernilerinin Cerrahi tedavisinin yetersiz kalmasının nedenleri üzerine. Ege Üniversitesi Tıp Fakültesi Mecmuası 4 (4): 425-426, 1965
2. **Karadayı A, Avman A:** Disk hernilerinin cerrahi tedavisinde negatif miyelografinin

- değerlendirilmesi. Ege Üniversitesi Tıp Fakültesi Mecmuası 5 (1): 65-68, 1966
3. **Turgut Zileli, Nurhan Avman:** Syringomyeli. Nöropsikiyatri Arşivi, özel kongre arşivi ss 75-80, Eylül-Ekim 1966
4. **Avman N, Karadayı A, Saveren M:** Servikal kord travmalarında anterior dekompresyon ve füzyon (Cloward) ameliyatının yeri. Ankara Üniversitesi Tıp Fakültesi Mecmuası 23 (6): 1746-1753, 1970
5. **Karadayı A, Avman N, Özdamar N:** Baziller impresyon (platybasia) teşhis ve tedavisi. Nöropsikiyatri Arşivi 7 (1): 1-10, 1970
6. **Buharalı Z, Aşkın karadayı, Cordan T, Avman N:** Disk hernilerinin cerrahi tedavisi (cerrahi olarak tedavi edilen 295 vakanın değerlendirilmesi). Ankara Üniversitesi Tıp Fakültesi Mecmuası 24 (5): 910-919, 1971
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11. **Avman N, Buharalı Z, Saveren M:** Disk hernilerinin cerrahi tedavi endikasyonları. Türkiye Ortopedi ve Travmatoloji Dergisi 1 (1): 61-71, 1973
12. **Avman N, Özkal E, Erdoğan A:** Vertebral arteriography and microsurgery in the management of dumbbell cervical neurinomas. Surg Neurol 4 (3):327-329, 1975
13. **Avman N, Tanyaş Y, Dinçer C:** Spinal kord tümörleri ve mikroteknik. Ankara Üniversitesi Tıp Fakültesi Mecmuası 29 (1-2): 79- 96, 1976
14. **Avman N, Özkal E, Gökben B:** Spinal arteriovenöz malformasyon ve anevrizma. 13. Ulusal Psikiyatri ve Nörolojik Bilimler Kongresi Kitabı, 1977, Ankara, S: 290-295
15. **Avman N, Özkal E, Şenveli E:** Spinal anjiomlar ve mikroteknik. Nöroloji 9 (1): 53-60, 1978
16. **Avman N, Özkal E, Gökben B:** Aneurysm and arteriovenous malformation of the spinal cord. Surg Neurol 11 (1):5-6, 1979
17. **Avman N, Özkal E, Erdoğan A:** Microsurgical removal of anterolateral spinal lesions. J Microsurg. 3 (3):176-179, 1982
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CONCLUSION:

In conclusion, Dr. Avman not only contributed to modern neurosurgery and microsurgery in Turkey, but also made contributions to modern

spinal and medulla spinalis surgery. When Dr. Avman's applications of spine and medulla spinalis surgery and his publications are examined, it seems that he closely followed the recommendations in the literature of the time.

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