



INSTRUCTIONAL LECTURES & PANEL PRESENTATIONS

BRIEF HISTORY OF SPINAL SURGERY IN TURKEY

Tarik YAZAR, MD, Professor of Orthopedics

*Institution(s):*

*Ankara University, School of Medicine, Ibn-i Sina Hospital, Department of Orthopaedics and Traumatology*

**Dr Cemil Topuzlu** (1866-1956) is probably the pioneer of modern surgery in Turkey. His contributions to Turkish spinal surgery is of up-most importance.

He not only described several general surgery procedures, but also performed many spinal operations, mainly on spinal trauma and Potts' disease. One article of his studies was published in December 31, 1897 in la Gazette Medical D'Orient. This study included;

Laminectomy on one patient due to vertebral column fracture

Laminectomy on one patient due to cervical Potts' disease

Laminectomy on one patient due to dorsal Potts' disease

Menard operation on one patient due to dorsolumbar Potts' disease

And Calot operation on 3 patients due to dorsolumbar Potts' disease

In the history of fusion, we see that that the first doctors performing spinal fusion were general surgeons. Orthopaedics and neurosurgeons followed general surgeons in 1960.

In Turkey the first Albee operation was performed by **Dr. Kemal Öke** on 2 cases.

Following the case of **Dr. Öke**, in 1926 **Dr. Burhaneddin Toker** presented another case.=

In 1942, **Dr. Sadettin Onaran** presented 9 cases of Albee operation on Potts' disease stating the efficiency of that operation.

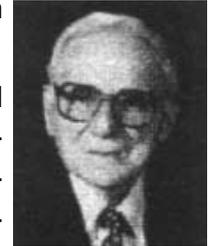
This study of **Dr. Onaran** was the first published series of spinal fusion surgery.

After these initial studies, bone and joint diseases hospitals were established throughout the country

In the following years spinal fusion operations were performed by **Dr. Baha Özkay**, **Dr. Ruhi Soyer** of Baltalimanı Hospital and **Dr. Orhan Aslanoğlu** of Eğridir Hospital in 1955 who were trainees of the French school.

Spinal stenosis was first described by **Dr. Münir Ahmet Sarpyener** in 1945.

**Prof. Dr. Ridvan Ege** and **Prof. Dr. Recai Ergüder** published the first study on discectomy at the 14th National Medical Congress in 1958.



*Prof. Dr. Ridvan Ege*



*Prof. Dr. Zeki Korkusuz*

In 1960's posterior spinal fusion became widely known. **Prof. Dr. Zeki Korkusuz** in Ankara, and concurrently others in Izmir and Istanbul, started to perform this surgery.

**Prof. Dr. Ridvan Ege** modified Albee operation in the same years.

In Aegean University, **Prof. Dr. Veli Lök** began to use Albee operation for Pott cases. Following posterior lumbar fusion, anterior fusion became popular as well.



**Prof. Dr. Gönğür Sami Çakırgil** performed anterior spinal fusion in Potts' diseases in 1964. These operations were mostly located at the thoracic and lumbar regions.

*Prof. Dr. Gönğür Sami Çakırgil*

In 1970's, **Prof. Dr. Zeki Korkusuz** performed anterior cervical procedures.

In 1971, **Dr. Akçiçek** from Eğirdir hospital presented 53 cases of vertebral osteotomies due to kyphosis.

The first anterior cervical fusion was made by **Dr. Cloward** at Hacettepe University Department of Neurosurgery in 1964.



*Prof. Dr. Aykut Erbenli*



*Prof. Dr. Vural Bertan*



*Prof. Dr. H. Ziya Gökalp*



*Prof. Dr. Yücel Tümer*



*Prof. Dr. Ertan Mergen*

After this first anterior cervical fusion, **Dr. Nurhan Avman** of Ankara University in 1965, **Dr. Vural Bertan** and **Dr. Aykut Erbenli** of Hacettepe University in 1967, **Dr. Hamit Ziya Gö-**

**kalp** of Gülhane Military Hospital in 1968, and other institutions started to operate on the anterior cervical spine. The DDT system of Armstrong popularized in 1975 was first used in Ankara University Medical School by **Prof. Dr. Yücel Tümer** and **Prof. Dr. Ertan Mergen**.



*Prof. Dr. Emin Alici*

Apart from these fusion operations, **Prof. Dr. Emin Alici** performed the first trans-oral fusion in 1978 and Alici Internal Fixation (ALIF) surgery in 1979.

## Spinal Instrumentation in Turkey

### Cervical Instrumentation

Medical records on which instruments was first used in Turkey are lacking. The first instrumentation is thought to be posterior sublaminar wiring.

In 1967, **Dr. Bertan** and **Dr. Tokgözoğlu** used cervical plates for fixation in a trauma case. This study was published in 1972. Plate fixation was occasionally used in various centers, whereas, posterior wire fixation remained to be popular for many years.

Anterior cervical plates were also used for different cases in following years.

In 1980's Halifax clamps became popular for a short period. Halifax clamps for C1-C2 fusion and at other locations were used by **Dr. Zileli** in 1990. **Dr. Zileli** presented the results of his clinical study in one meeting.



*Prof. Dr. Mehmet Zileli*

Rundsford Loop was first used for occipito-cervical fixation in 1989 in Aegean University. A similar operation was also performed by **Dr. Özer**.

**Dr. Fahir Özer** was the first surgeon to use lateral mass plating in posterior cervical region. He was also among the first to perform anterior screw fixation of the odontoid, posterior screw fixation for Hangman fractures and C1-C2 transarticular screw fixation.

**Dr. Özer** and his friends defined oblique corpectomy and fusion in cervical spondylosis in 1999.

### **Thoracolumbar Instrumentation POSTERIOR SYSTEMS**

The system of Harrington first introduced in 1962 has been widely used since then.

Thoracolumbar instrumentation was first used in scoliosis surgery in contrast to cervical instrumentation.

Harrington instrumentation was first used in scoliosis surgery in contrast to cervical instrumentation.

Harrington instrumentation was first used in 1968 by **Dr. Güngör Sami Çakırgil** of Ankara University, in 1969 by **Dr. Bahattin Oğuz** Temoçin of İstanbul University, and in 1972 by **Dr. Mehmet Tiner** of Ege University.

**Dr. Altav** presented 4 cases of Harrington application for scoliosis in 1971.

**Dr. Bilsel** was the first to use the Luque system in 1988.

In 1988, the CD system was first used by **Dr. Ömer Çeliker** and by **Prof. Dr. Ünsal Domaniç**. **Prof. Dr. Azmi Hamzaoğlu** was first to use the Drummond-Harrington-Luque system in 1989.



*Prof. Dr.  
Azmi Hamzaoğlu*

Thoracolumbar Harrington instrumentation among Neurosurgeons was first performed by **Dr. Aydın Paşaoğlu** in 1980.



*Prof. Dr.  
Derya Dinçer*

*Prof. Dr.  
İ. Çetin*

The pedicular Schanz screw was first used in Ankara University by **Prof. Dr. İ. Çetin**, **Assoc. Prof. Dr. Derya Dinçer** and **Dr. Tarık Yazar** in 1987.

**Dr. Alıcı** performed the first transpedicular fixation operation in 1991 with the system called under his name.

The first transpedicular operation on spondylolysis was also performed by **Dr. Emin Alıcı**.

Although lumbar cage application was widely used by all neurosurgeons and orthopaedic surgeons initially, it was mostly commonly used by the neurosurgeons lately.

The names of first users of lumbar cages are still not known.

### **ANTERIOR SYSTEMS**

**Dr. Alıcı** performed anterior rigid rod fixation in 1990.

The Kaneda system was used after **Dr. Kaneda** himself gave an invited speech in one of our previous Spinal Surgery Congresses.

**Dr. İlker Çetin** of Ankara University was among the first to use the Kaneda System in 1992.

In Aegean Region, the first Kaneda device was implanted by **Dr. Zileli** in 1993.



*Dr.  
Mümtaz  
Alpaslan*

The Dwyer instrumentation and the Webb-Morley system were used by **Dr. Güngör Sami Çakırgil** and **Dr. Mümtaz Alpaslan** in 1987. First endoscopic instrumentation was made by **Dr. Alıcı** in 1995.

Assoc. **Prof. Dr. Ahmet Alanay** and **Prof. Dr. Tarık Yazar** were the first to perform vertebroplasty and kyphoplasty.

#### **Development of Instrument Systems**

Following the usage of imported spinal systems, studies on local products improved.

The first outcome was the Alıcı Spinal System (Hipokrat A.Ş.) developed by **Prof. Dr. Emin Alıcı** in 1990. Following several modifications, this system is one of the most commonly used implant by orthopedists.

In 1992, **Dr. Tarık Yazar** developed the “İbn-i Sina Spinal System” and **Dr. Mehmet Zileli** developed the “Tıpsan Spinal System”.

**Dr. Cengiz Türkmen**'s anterior fixator should also be mentioned among local products.

**Dr. Özer** developed a new ertractor system to be used in anterior cervical discectomy and fusion.

In conclusion, general surgeons were the first spinal surgeons who performed fusion in Turkey. Orthopaedic spinal surgeons were the pursuers of general surgeons in means of performing trauma and deformity surgery of our near past.

The pioneers of cervical stabilization were mostly neurosurgeons. After 1990's neurosurgeons were also interested in thoracolumbar stabilization.