

Joint Meeting of Istanbul Spine Masters & ISMISS Turkey

October 19 - 22, 2023

Memorial Bahçelievler Hospital, Istanbul / Türkiye



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PROGRAM & ABSTRACT BOOK



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NÖROMODÜLASYON
Araştırma ve Eğitim Derneği

Invitation

It is our pleasure to invite you to the “**Joint Meeting of Istanbul Spine Masters & ISMISS Turkey 2023**” which will be held at the Memorial Bahçelievler Hospital in İstanbul in October 19-22, 2023.

Like the previous years, this year the **7th Istanbul Spine Masters** and **14th ISMISS Turkey** meetings will be organized jointly. Traditionally, while the ISMISS meetings cover the latest advancements on minimal invasive techniques and spinal endoscopy; the Istanbul Spine Masters meetings cover whole spectrum of spine surgery in an “advanced course” format in a more interactive/didactic way.

We believe that the topics covered in the meeting will be extremely relevant to daily practice. The meeting program is just “intense”, and full of excellent lectures, results of implementation of new procedures, case discussions, debate sessions, video demonstrations and premeeting courses.

We look forward to seeing you in the magnificent city of İstanbul in October 19-22, 2023.



Mehmet ZİLELİ, MD
Chairman



Cumhuri KILINÇER, MD, Ph
Vice-Chairman



Onur YAMAN, MD
Vice-Chairman

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Mehmet Zileli

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Cumhur Kılınçer

Onur Yaman

Middle East Spine Society President

Onur Yaman

ISMISS Turkey Chairman

H. Yener Erken

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(In Alphabetical Order According to Surname)

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Abolfazl Rahimizadeh / Iran

Erkan Kaptanoğlu / Türkiye

Joachim Oertel / Germany

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Masoud Khadivi / Iran

Mohammed Mohi Eldin / Egypt

Oscar L. Alves / Portugal

Richard Assaker / France

Sait Naderi / Türkiye

Salman Sharif / Pakistan

Sandeep Vaishya / India

Sebastian Gitter / Germany

Yener Erken / Türkiye

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(In Alphabetical Order)

Faculty

Abd-El Hafiz Shebab Eldien

Egypt

Abolfazl Rahimizadeh

Iran

Altay Sencer

Türkiye

Andras Erbszt

Hungary

Cumhur Kılınçer

Türkiye

Ender Ofluoğlu

Türkiye

Erkan Kaptanoğlu

Türkiye

Eun Sang Kim

South Korea

Hayati Aygün

Türkiye

İdris Avcı

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Joachim Oertel

Germany

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Egypt

Moon-Jun Sohn

South Korea

Mykhailo Dushnyi

Ukraine

Onur Yaman

Türkiye

Richard Assaker

France

Sait Naderi

Türkiye

Salman Sharif

Pakistan

Salim Şentürk

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Sebastian Gitter

Germany

Sebastian Senger

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Türkiye

Shakhaydar Shatursunov

Uzbekistan

Shomansur Shatursunov

Uzbekistan

Süleyman Özyalçın

Türkiye

Tarık Yazar

Türkiye

Ülkün Ünlü Ünsal

Türkiye

Yahya Güvenç

Türkiye

Yener Erken

Türkiye

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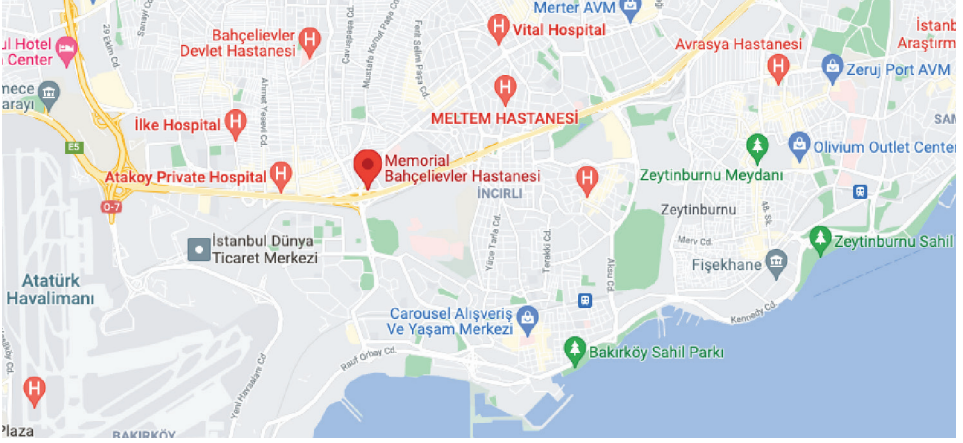


NÖROMODÜLASYON
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Logistics

Memorial Bahçelievler Hospital

Bahçelievler Merkez, Adnan Kahveci Bulvarı. No: 227, 34180 Bahçelievler / İstanbul



ORGANIZATION SECRETARIAT



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NÖROMODÜLASYON
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19 October 2023, Thursday

PREMEETING COURSE: Update of Spine Surgery *Live Surgery and Case Discussions*

08.30-17.00 Live surgery (2-3 cases) starting at 9:00

Case discussion: Lumbar degenerative (60 minutes)

Case discussion: Cervical degenerative (60 minutes)

Case discussion: Trauma (60 minutes)

Case discussion: Tumor (60 minutes)

Case discussion: Deformity (60 minutes)

Case Presenters:

*Oscar L. Alves, Ender Ofloğlu, Erkan Kaptanoğlu, Sebastian Gitter, Salman Sharif,
Onur Yaman, Richard Assaker, Kemal Koç, Mehmet Zileli, Khairun Nabi Khan*

08.45-09.00 Opening talks: *Mehmet Zileli*

SESSION 1 TRAUMA

Moderator: Mehmet Zileli

09.00-09.15 Case 1

Khairun Nabi Khan

09.15-09.30 Case 2

Onur Yaman

09.30-09.45 Case 3

Ender Ofloğlu

09.45-10.00 Case 4

Salman Sharif

SESSION 4 DEFORMITY

Moderator: Onur Yaman

15.30-15.45 Case 13

Ender Ofloğlu

15.45-16.00 Case 14

Richard Assaker

16.00-16.15 Case 15

Onur Yaman

16.15-16.30 Case 16

Erkan Kaptanoğlu

SESSION 5 TUMOR

Moderator: Salman Sharif

16.30-16.45 Case 17

Mehmet Zileli

16.45-17.00 Case 18

Erkan Kaptanoğlu

17.00-17.15 Case 19

Salman Sharif

17.15-17.30 Case 20

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20 October 2023, Friday

ISMISS TURKEY

08.15-08.30 Opening talks: *Joachim Oertel (ISMISS President), Yener Erken (ISMISS Turkey Chairman)*

SESSION 1 / ENDOSCOPIC SURGERY- 1

Moderator: Mehmet Zileli

- 08.30-08.45 Preoperative planning & step by step technique of lumbar interlaminar approach
Altay Sencer
- 08.45-09.00 Preoperative planning & step by step technique of lumbar transforaminal approach
Yener Erken
- 09.00-09.15 The unilateral biportal endoscopic (UBE) spine surgery: Procedures, applications, and technical details
Hayati Aygün
- 09.15-09.30 Safety of irrigation in lumbar endoscopic discectomy
Altay Sencer
- 09.30-09.45 Unilateral Biportal Endoscopic Lumbar Interbody Fusion
İdris Avcı
- 09.45-10.00 Discussion

10.00-10.30 Refreshment break

SESSION 3 / CASE and VIDEOS

Moderator:

- 13.00-13.15 Various Endoscopic Videos
Salim Şentürk
- 13.15-13.30 UBE for lumbar spinal stenosis
Hayati Aygün
- 13.30-13.45 Transforaminal endoscopic lumbar discectomy for lumbar disc herniation at the L5-S1: Tips and tricks
Yener Erken
- 13.45-14.00 Lumbar endoscopy: Case and video
Joachim Oertel
- 14.00-14.15 Full endoscopic spine surgery: Surgical videos
Altay Sencer
- 14.15-14.30 UBE: Surgical videos
Tarık Yazar

14.30-15.00 Refreshment break

SESSION 4 / DECOMPRESSIVE SURGERY & PAIN PROCEDURES

Moderator: Cumhur Kılıncı

- 15.00-15.15 Consecutive decompression for lumbar degenerative spine disorders
Hayati Aygün
- 15.15-15.30 Multilevel unilateral approach for decompression of lumbar spinal stenosis
Serdar Kahraman
- 15.30-15.45 What are the limits of full endoscopic spine surgery?
Salim Şentürk
- 15.45-16.00 Doctorfit Model: Complex diagnostic and therapy protocol for lumbar disc herniation
Andrew Erbszt
- 16.00-16.15 Minimally invasive piriformis release: New treatment for sciatica
Andrew Erbszt
- 16.15-16.30 Ozone and spinal procedures
Süleyman Özyalçın
- 16.30-16.45 Endoscopic discectomy: Analysis of surgical results
Shomansur Shatursunov, Shakhaydar Shatursunov
- 16.45-17.00 Discussion

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21 October 2023, Saturday

ISTANBUL SPINE MASTERS, Day 1

08.15-08.30 Opening talks: *Mehmet Zileli, Cumhur Kılınçer, Onur Yaman*

SESSION 1 / CERVICAL SURGERY

Moderator: Oscar L. Alves

08.30-08.45 Os odontoideum: Evidence-based management

Oscar L. Alves

08.45-09.00 Complications of ACDF

Abd-El Hafiz Shebab Eldien

09.00-09.15 Surgery for cervical OPLL with Kurokawa (French door) method: Efficacy and complications

Eun Sang Kim

09.15-09.30 Tailored surgery for cervical spondylotic myopathy

Sait Naderi

09.30-09.45 Cervical osteotomy: Indications and techniques

Yahya Güvenç

09.45-10.00 Discussion

10.00-10.30 Refreshment break

SESSION 2 / KEYNOTE TALKS

Moderator: Mehmet Zileli

10.30-10.50 Spinal deformity surgery: Tips and Tricks

Richard Assaker

10.50-11.10 MIS surgery: Current state and future trends

Joachim Oertel

11.10-11.30 Spinal cord injury: WFNS Spine Committee Recommendations

Salman Sharif

11.30-11.50 Strategies for revision surgery in lumbar spine

Abolfazl Rahimizadeh

11.50-12.00 Award Presentation

12.00-13.00 Lunch

SESSION 3 / SPINAL TUMORS

Moderator: Onur Yaman

13.00-13.15 Surgery of intradural extramedullary tumors through hemilaminectomy

Eun Sang Kim

13.15-13.30 Management of cervico-thoracic metastases

Serdar Kahraman

13.30-13.45 The role of multimodal management of symptomatic vertebral hemangioma and intramedullary cavernous malformation

Moon-Jun Sohn

13.45-14.00 Vertebral artery mobilization and cervical tumor resection

Kemal Koç

14.00-14.15 Cervical aneurysmal bone cysts and giant cell tumors

Abolfazl Rahimizadeh

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21 October 2023, Saturday

ISTANBUL SPINE MASTERS, Day 1

SESSION 4 / VARIOUS TOPICS

Moderator: Sebastian Gitter

- 14.15-14.30 Expanding the limits of cervical arthroplasty
Oscar L.Alves
- 14.30-14.45 Lysis Repair surgical approaches
Mohammed Mohi Eldin
- 14.45-15.00 Recent advances in the treatment of spinal arteriovenous malformation and fistula
Moon-Jun Sohn
- 15.00-15.15 Adjacent level disease: Prevention and treatment
Ender Ofluoğlu
- 15.15-15.30 Osteotomy complications: Prevention and treatment
Ülkün Ünlü Ünsal

15.30-16.00 Refreshment break

SESSION 5/ FREE PAPERS

Moderator: Salim Şentürk

- 16.00-16.10 **OP-01** Comparison of Endoscopic Lumbar Spinal Surgery Outcomes in Obese and Non-Obese Patient Groups
Magomed Lepshokov, Sebastian Senger, Stefan Linsler, Benedikt Burkhardt, Joachim Oertel
- 16.10-16.20 **OP-02** Cages Alone Versus Plate Fixation with Cages after Four Levels Anterior Cervical Discectomy
Hamdi Nabawi Mostafa, Ibrahim Gamal Ewais, Taha Mohamed Adel, Karim Mohamed Elshafei, Ahmed Mahmoud El Sherif
- 16.20-16.30 **OP-03** Our clinical results on percutaneous cage placement to the facet joint space in patients with cervical foraminal stenosis and radiculopathy
Kemal Süheda Özkavaklı, İsmail İştemen, Can Sezer, Gökhan Çavuş, Emre Bilgin
- 16.30-16.40 **OP-04** Selective Apical Convex Rod Derotation: A fast and secure technique for the correction of adolescent idiopathic scoliosis - A case series of 38 patients
İdris Avcı, Kemal Paksoy, Melih Kapdan, Ahmet Atilla Abdioğlu, Salim Şentürk, Onur Yaman
- 16.40-16.50 **OP-05** Myoclonic seizures after endoscopic cervical disc surgery: a rare complication or just coincidence?
Faik Melih Kapdan, Ece Sunar, İdris Avcı, Kemal Paksoy, Salim Şentürk, Onur Yaman
- 16.50-17.00 **OP-06** Innocently Applied Opioid Analgesic for Pain Control After Spinal Surgery May Risk Life: Tramadol-Induced Refractory Status Epilepticus and a Systematic Review of the Literature
Nese Keser, İbrahim Yılmaz, Ceyhan Oflezer, Sezin Alpaydın Baslo, Dilek Karadağ, Mehmet Öztürk, Erhan Emel
- 17.00-17.10 **OP-07** Position of the nerve root in relation to disc space in cervical posterior surgery
Joachim Oertel, Vincent Christopher Mack
- 17.10-17.20 **OP-08** Percutaneous Cervical Cryodenervation in 16 Patients with Cervical Facet Joint Syndrome
Özgür Akşan
- 17.20-17.30 **OP-09** Optimal surgical methods for solitary metastasis of the thoracolumbar spine
Chang Min Ha, Se Jun Park, Sungjoon Lee, Sun Ho Lee, Whan Eoh, Eun Sang Kim

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22 October 2023, Sunday

ISTANBUL SPINE MASTERS, Day 2

SESSION 6

OSTEOPOROSIS

Moderator: *Abd-El Hafiz Shehab Eldien*

- 08.15-08.30 Vertebral augmentation: When indicated? What is correct timing?
Cumhur Kılınçer
- 08.30-08.45 Vertebroplasty or kyphoplasty: Pros and cons
Sait Naderi
- 08.45-09.00 Pedicle screw fixation in osteoporotic fractures
Mohammed Mohi Eldin
- 09.00-09.15 Cortical bone trajectory screw
Abd-El Hafiz Shebab Eldien
- 09.15-09.30 Discussion

09.30-10.00 Refreshment break

SESSION 7

ROUND TABLE: SAGITTAL BALANCE. WHEN DOES IT MATTER?

Moderator: *Richard Assaker*

- 10.00-10.15 Sagittal balance and pelvic parameters: Principles
Salman Sharif
- 10.15-10.30 Point of view: Sagittal imbalance - cases and examples
Onur Yaman
- 10.30-10.45 Point of view: Usage of sagittal balance in patient management
Richard Assaker

SESSION 8

FREE PAPERS

Moderator: *Ender Ofluoglu*

- 11.30-11.40 **OP-10** C1-2 instrumentation and unilateral 3 level percutaneous cage placement to facet joint space in a trauma patient with odontoid fracture and cervical scoliosis: case report
Kemal Süheda Özkavaklı, İsmail İstemen, Can Sezer, Gokhan Cavus, Emre Bilgin
- 11.40-11.50 **OP-11** Contralateral interlaminar approach using biportal endoscopy for intraforaminal disc herniation due to craniocervical migration: a technical case report
Cigdem Mumcu
- 11.50-12.00 **OP-12** An uncommon presentation of malposed pedicle screw: aortopulmonary screw
Abdurrahman Aycan, Ege Tanyeli, Onur Tutan
- 12.00-12.10 **OP-13** Endoscopic cervical and lumbar spine surgery
Fadi Aldaher, Joachim Oertel
- 12.10-12.20 **OP-14** Diagnosing Tethered Cord When MRI Is Not Possible: A Technique From The Past
Bilal Bahadır Akbulut, Nevhis Akıntürk, Celal Çınar, Erkin Özgiray
- 12.20-12.30 **OP-15** Due to lack of registration, cancelled

Closing of the meeting

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POSTER PRESENTATIONS

PP-01 Due to lack of registration, cancelled

PP-02 Spontaneous Thoracic Epidural Hematoma in the Psychiatry Inpatient Unit: A Misdiagnosis with Conversion Disorder
Bilal Bahadır Akbulut, Mustafa Serdar Bölük, Huseyin Biceroglu, Taşkın Yurtseven

PP-03 Synovial Cyst Mimicking Breast Cancer Metastasis: A Case Report
Erkin Ozgiray, Nevhis Akıntürk, Bilal Bahadır Akbulut

PP-04 Full Endoscopic Lumbar Discectomy: A Single-Junior-Surgeon Experience in Eastern Anatolia
Ali Ekrem Adıyaman

PP-05 Due to lack of registration, cancelled

PP-06 Due to lack of registration, cancelled

PP-07 Expanding Horizons of Unilateral Biportal Endoscopy (UBE) in Minimally Invasive Lumbar Spine Surgery: A Comprehensive Review
Cigdem Mumcu, Atif Malik

PP-08 Due to lack of registration, cancelled

PP-09 Due to lack of registration, cancelled

PP-10 Due to lack of registration, cancelled

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Invited Speaker Lectures

(According to the Chronological Order at the Scientific Program)

New minimally invasive operation for piriformis syndrome

Dr. Andras Erbszt

Doctorfit Spinal Clinic, Budapest, Hungary

Piriformis syndrome still remains a diagnostic and therapeutical challenge. The author demonstrates the causes, prevalence and diagnostic process of the syndrome. The therapy of piriformis syndrome is usually conservative - operation is required in less than 5% of all cases. A new, minimally invasive surgery method has been developed by the author in order to decompress the n. ischiadicus without the direct approach of the nerve, which can cause destruction and disfunction of the gluteal muscles. Finally, the results of more than 30 operations will be presented.

Doctorfit Model: Complex diagnostic and therapy protocol for lumbar disc herniation

Dr. Andras Erbszt

Doctorfit Spinal Clinic, Budapest, Hungary

The number and cost of doctor visits due to degenerative spinal diseases are dramatically increasing worldwide. Despite the ever-growing expenses of healthcare systems around the world, therapeutical results are not advancing as one would expect.

In the author's experience, results can be drastically improved by utilising the appropriate protocol.

This presentation will showcase the succesful diagnostic and therapeutic approach used by DoctorFit Spinal Clinic in Budapest for over 15 years. Its primary aim is to prevent the onset of chronic pain syndrome by optimalsing the patient journey and promoting quicker recovery.

The heart of the therapeutic protocol is the Integrated Spinal Care Model, which encompassess four elements:

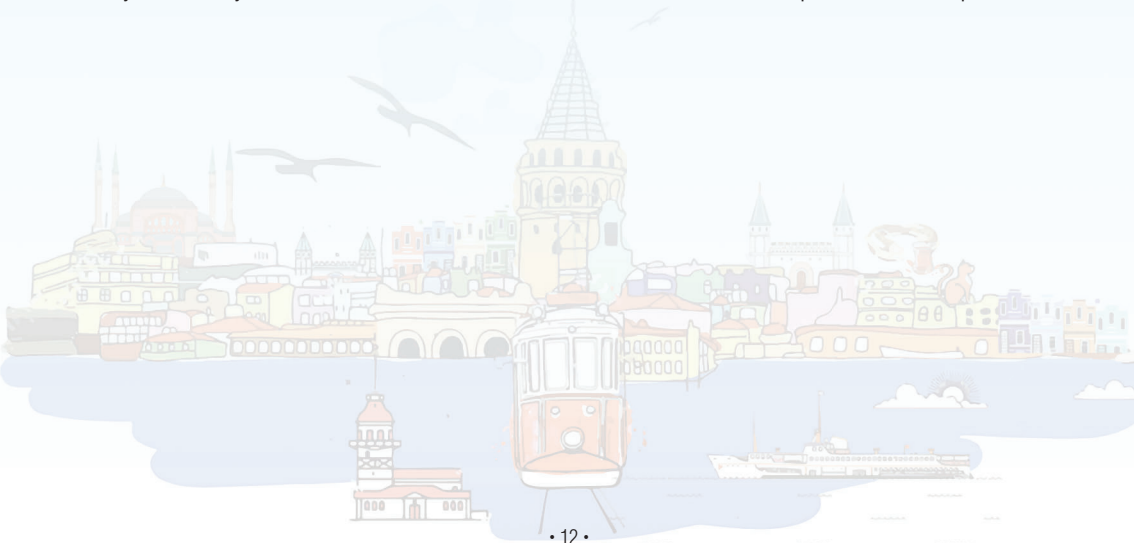
Early diagnosis

Effective pain management

Short and long term rehabilitation

Minimally invasive spinal surgery - where possible

Finally, the last 15 years' main achievements and advancements of the DoctorFit Spinal Clinic will be presented.



Invited Speaker Lectures

Ozone and spinal procedures

N. Süleyman Özyalçın, MD, FIPP, EDPM

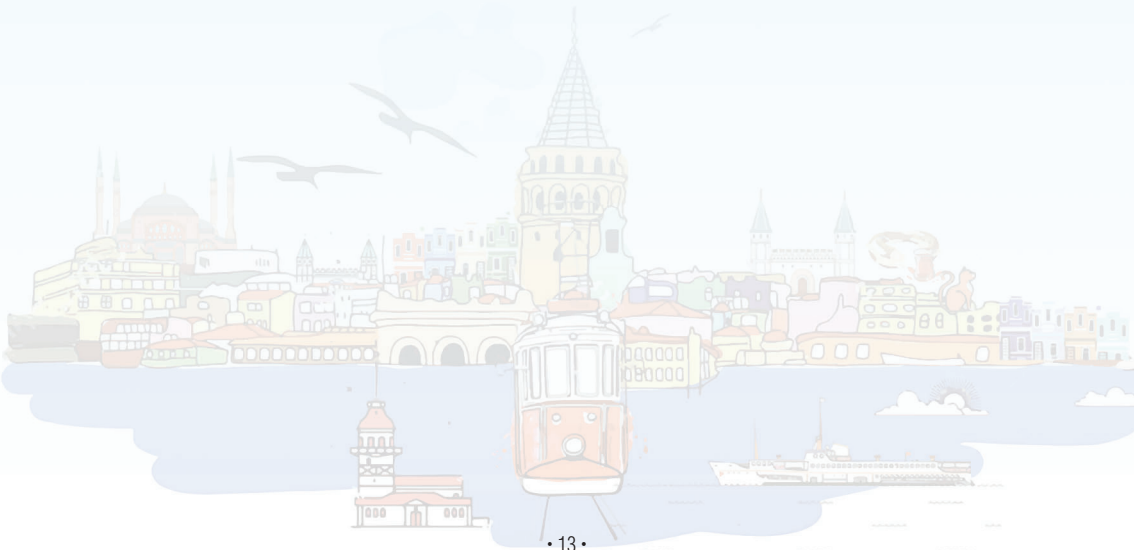
*Prof, Anesthesiology and Reanimation and Pain Specialist Acibadem Altunizade Hospital Pain Center
Algo Pain Center*

Several hypotheses have been proposed to clarify the mechanisms underpinning the antioxidant, analgesic, antiinflammatory and immunomodulatory actions of medical O₂-O₃ mixture. However, despite its various and heterogenous medical applications, the biochemical effects of the O₂-O₃ mixture are far from being understood in detail, even though its chemical properties seem to play a pivotal role in exerting its positive effects in different pathological conditions

Ozone has been used in medicine due to its anti-inflammatory, analgesic, and antiseptic properties as a drug. It helps alleviate low back pain caused by LDH by reducing inflammation around the nerve root, and subsequently reduces the disc volume (6). Ozone decreases herniated disc volume by breaking up proteoglycans in the nucleus pulposus, neutralizing the negative charge of sulfate side chains, and reducing water retention.

Intradiscal ozone application is a method that requires technical training and experience. This technique is performed into cervical, thoracic and lumbar disc as a decompression. However, the need for a fluoroscopy or tomography manual has limited the spread of this technique in the widespread clinical rehabilitation setting. It should be done by experienced people in appropriate sterilized conditions and with proper medical equipment.

Serious complications such as infection, nerve damage, blindness due to cranial nerve damage have been reported.



Endoscopic treatment of foraminal stenosis

Radchenko V.O., Piontkovskiy V.K., Dushnyi M.M.

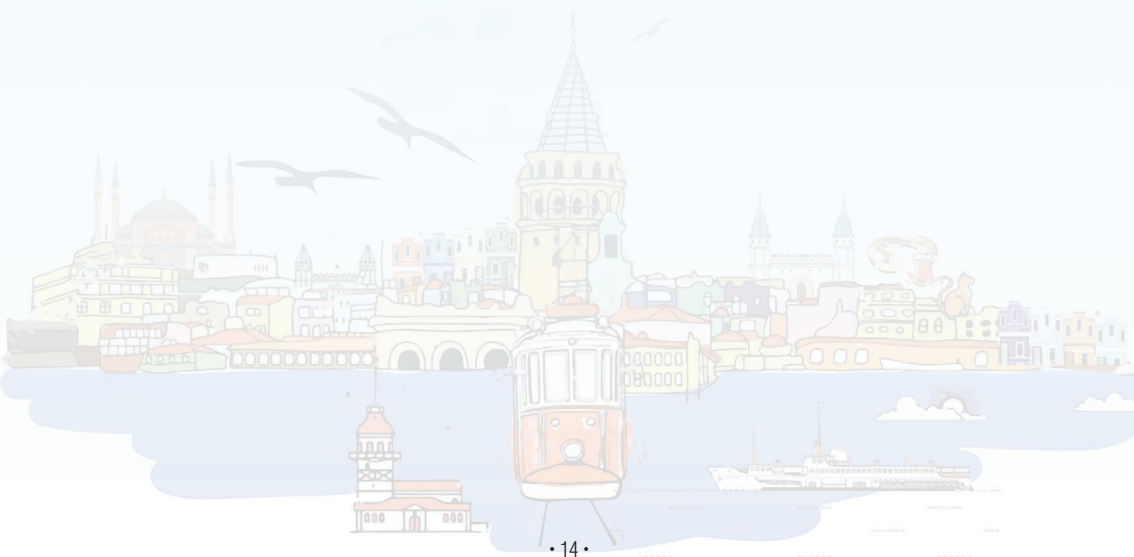
Introduction. Foraminal stenosis of the lumbar spine is a social problem and has been relevant for many decades. The emergence of endoscopic methods of surgical treatment of foraminal stenosis fundamentally changed the approaches to the treatment of this category of patients.

The aim of the study. To assess the effectiveness of using endoscopic methods of surgical treatment of degenerative foraminal stenosis of the lumbar spine.

Materials and methods. Since 2016, in the regional center of orthopedics, traumatology and vertebrology, 124 (72.1%) patients with degenerative foraminal stenosis were operated on by percutaneous endoscopic foramenotomy and 48 (27.9%) patients by unilateral biportal endoscopy with lateral approach. Patients were divided, according to the Lee classification, into categories according to the zones of foraminal stenosis: zone 1 (41 patients (23.8%)), zone 2 (83 patients (48.3%)), zone 3 (48 patients (27, 9»)); segment level where this pathology was observed: L1-L2 - 12 patients (7.0%), L2-L3 - 24 patients (14.0%), L3-L4 - 27 patients (15.7%), L4-L5 - 52 patients (30.2%), L5-S1 - 57 patients (31.1%). Also, patients were divided according to the state of the vertebral-movable segment: stable (61 patients (35.5%)) or unstable (111 patients (64.5%)). The assessment of pain syndrome was carried out according to the VAS scale, the assessment of limitation of vital activity - according to the Oswestry disability index.

Results: the preoperative pain index averaged 8.3 ± 0.8 points, after 3 months the pain intensity decreased by 60%, to 3.2 ± 1.3 points. 6 months after the operation, the pain syndrome decreased by 85% and the average score was 1.2 ± 0.9 points. The average rate of limitation of vital activity according to the Oswestry disability index before the operation was $52.1 \pm 5.3\%$, after 1 month after surgery - $21.7 \pm 2.2\%$, after 3 months - $14.8 \pm 1.7\%$, after 6 months - $6.4 \pm 0.9\%$. These indicators testify to the high efficiency of the above operative interventions.

Conclusion: endoscopic methods of surgical treatment of foraminal stenosis are effective methods of eliminating this pathology due to their minimal trauma, clear intraoperative visualization of nerve structures, and the possibility of a quick return of patients to everyday life. However, for surgical intervention, it is absolutely necessary to take into account the area and level of foraminal stenosis, as well as the stability of the vertebral-movable segment.



Invited Speaker Lectures

Vertebral artery mobilization and cervical tumor resection

Rahmi Kemal Koç

Erciyes University, Department of Neurosurgery Kayseri, Turkey

Both of primary and metastatic tumors of the cervical spine are likely to involve the vertebral artery (VA) on one or both sides.

The cervical tumors involving or surrounding the VA are great challenges for Neurosurgeons to carry out radical cervical tumor resection. In order to prevent inadvertent VA injury during the tumor resection and to achieve safe and maximum tumor resection and to minimize the tumor recurrence, VA releasing has a great importance.

For the management of such tumors, a standard anterior approach may be inadequate.

To evaluate the clinical therapeutic effect of vertebral artery releasing to maximum cervical tumor resection.

Surgical Technique

Anterior Approach. It is approached from the affected side. The natural space between the sternocleidomastoid (SCM) muscle and the internal jugular vein is widely dissected. The SCM muscle is retracted laterally, while the carotid artery, jugular vein, esophagus, and trachea were retracted medially. If the lesion is small, a routine anterior cervical opening may be done. The sympathetic chain is recognized under the prevertebral aponeurosis and then, the medial portion of the longus colli muscle is excised medial to the sympathetic chain. Dissection is started at the upper and lower parts of the lesion. The intertransverse ligament is resected and the anterior wall of the transverse foramen is removed subperiosteally using a Kerrison rongeur. The VV bleeding is controlled by a bipolar coagulator; however, a homeostatic agent may be used when the bleeding cannot be controlled. The VA is identified and then completely mobilized from the affected lateral walls to the anterior wall. The dissection then continues between the tumor and surrounded tissue, then the VA is retracted laterally or medially for the remainder of procedure. The tumor is totally removed.

Posterior Approach. In this case, it is approached from the midline incision. The paravertebral muscle is dissected to the affected side. After partial hemilaminectomy with the removal of the lateral mass, the nerve root, and VA was identified and the VA became free. In addition to tumor excision, instrumentation and autograft fusion were performed as needed.

Clinical series

From March 2001 to January 2019, 21 patients with cervical bone tumors (15 benign and 6 malignant tumors) underwent tumor resection with vertebral artery releasing in our clinic. There were 12 males and 9 females with ages ranging from 6 to 71(mean 30.4) years old. The medical records of these patients were reviewed retrospectively. All the patients were followed-up clinically and radiologically.

The average follow-up was 64 months. Histopathology revealed adenocarcinoma metastasis (4), osteoblastoma (4), eosinophilic granuloma (2), giant cell tumor (2), aneurysmal bone cyst (2), schwannoma (3), cavernous hemangioma (1), mesenchymal tumor (1), langerhans cell histiocytosis (1) and primitive neuroectodermal tumor (1). All the patients received gross total tumor resection and made a good neurological recovery. No such complications as spinal cord or vertebral artery injury, postoperative radiculopathy or instrumentation failure were observed. Local recurrence was observed only in two patients with lung adenocarcinoma metastasis.

Conclusion

Causing no significant morbidity, the cervical bone tumors surrounding VA can be radically resected after VA releasing.

Analysis of the Results of Surgical Treatment of Intervertebral Disc Herniation Lumbar Spine by the Method of Endoscopic Microdiscectomy

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Introduction

According to modern literary sources, about 80% of people during their lives suffered at least one episode of low back pain with or without pain in the lower extremities. Up to 70% of people at least once in their lives experienced such back pain that made them turn to a neurologist, and 19% of those who applied were forced to resort to surgery due to the lack of a tangible effect from conservative therapy.

Materials and Methods

A prospective non-randomized study of 156 patients with herniated lumbar intervertebral discs operated in the clinic of vertebrology of the Republican Specialized Scientific and Practical Medical Center of Traumatology and Orthopedics of the Ministry of Health of the Republic of Uzbekistan for the period from 2020 to 2023 was carried out. The study included patients aged 20 to 76 years who had lumboischialgia due to herniated lumbar intervertebral disc hernia. All patients underwent a comprehensive neurological and instrumental examination, including traditional and functional radiography of the lumbosacral spine, MSCT (CT) and MRI, as well as electroneuromyography (ENMG).

The criteria for selecting patients for the study were the ineffectiveness of conservative therapy for more than 3 months, frequent recurrences of pain (more than 3 times a year), the presence of neurological symptoms in the lower extremities, MRI or CT verification of a herniated disc at the level of L3–L4, L4–L5 or L5–S1, as well as electroneuromyography confirmation of root compression. The study did not include patients operated on for repeated disc herniation, who had more than one level of lesions, degenerative spinal canal stenosis, instability of the spinal segments, as well as patients with severe concomitant somatic pathology. The inclusion of patients in one of the groups was carried out in accordance with the technique of the performed operation. The first group consisted of patients operated on by microsurgical discectomy ($n = 64$), the second - patients who underwent endoscopic discectomy using the PSLD (Percutaneous Stenoscopic Lumbar Decompression) technique ($n = 92$). All patients were operated on by the same surgical team. Each technique used a standard set of instruments. The choice of the surgical technique was based on the preference of the patient and the availability of the necessary equipment at the time of the operation. Patients became more active on the first-fourth day after the operation and observed the orthopedic regimen for a month after the operation.

A comparative analysis of the outcome was performed on the basis of self-assessment of the functional state according to the Oswestry quality of life scale 3 and 6 months after the operation. The following indicators were also assessed: the severity of the pain syndrome according to the 100-mm visual analog pain scale (VAS), the subjective outcome of the treatment according to the Macnub criterion.

Results and Discussion

The neurological status of patients before surgery varied according to the intensity of the radicular pain syndrome and the duration of the disease. Immediately after the operation, the majority of patients experienced a complete regression of radicular pain syndrome, and all patients were subjected to the same activity restrictions - restriction of axial loads and strictly mandatory wearing of an orthopedic lumbar corset for 1 month after the intervention. Of the 92 patients in the endoscopic group, 5 (5.4%) had a relapse, which required a second operation. In 4 (3.4%) patients, prolonged pain was observed within 1 month after discharge, which corresponded to an unsatisfactory result on the Macnub scale. In 7 (7.6%) patients, short-term pain of a pulling nature was observed for no more than 1 week after surgery.

Conclusion

Based on the study, we can say that the efficiency of endoscopic discectomy is comparable to the microsurgical technique. Considering that this method is comparable to microdiscectomy in terms of its technical characteristics and capabilities, this technology can be used to remove herniated intervertebral discs. In some cases, the technical capabilities of the method allow decompression of nerve structures, which can be used in the treatment of non-discogenic spinal canal stenoses.

Invited Speaker Lectures

Surgical treatment of osteoporotic fractures of the bodies of the thoracolumbar spine using percutaneous balloon kyphoplasty with bone cement.

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Spinal fractures due to osteoporosis occur in 20-30% of patients older than 70 years, in 16-20% of women during menopause. The increase in the number of vertebral column fractures occurring against the background of osteoporosis is a natural consequence of population aging both in Uzbekistan and in the world as a whole. The main symptoms of such fractures are pain and kyphotic deformity of the spine.

The treatment of osteoporotic unstable uncomplicated fractures of the thoracolumbar spine in older patients has a number of features. The peculiarities of this group of patients is the presence of a large number of concomitant somatic pathology. In addition, the development of osteoporosis of the spine and a decrease in bone mineral density lead to a significant decrease in the strength characteristics of the vertebral bodies, which limit the use of modern transpedicular fixators and dictate the need to restore the support ability of the spinal column.

Percutaneous puncture balloon kyphoplasty is a modern minimally invasive way to stabilize unstable fractures of the thoracolumbar spine. The use of balloon kyphoplasty allows you to restore the height of the body of a broken vertebra and reduce the angle of post-traumatic kyphosis. First, a special balloon is inserted into the body of the broken vertebrae, which inflates under pressure. This helps to correct the deformity of the vertebra, after which the vertebral body is filled with bone cement.

The results of surgical treatment of 23 patients over 55 years of age who were treated by the RSSPMC of Traumatology and Orthopedics in the department of vertebrology with uncomplicated osteoporotic fractures of the bodies of the thoracolumbar spine were analyzed. In all cases, the standard technique of balloon kyphoplasty with bone cement was used. The duration of compression fractures was no more than 8 weeks, when there are still chances to restore the anatomical position and shape of the vertebra as much as possible using balloon kyphoplasty.

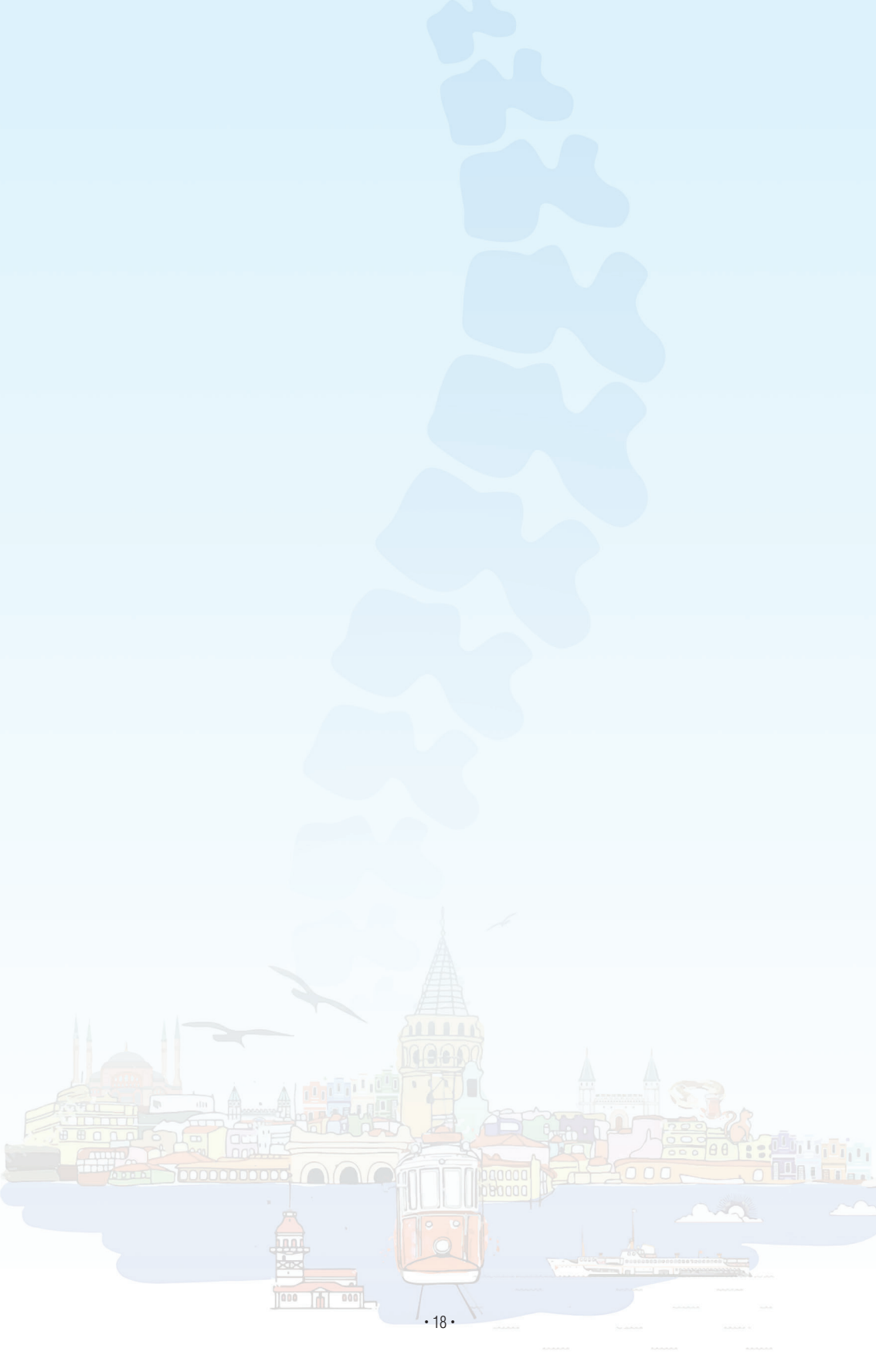
After the operation, all patients noted a significant decrease in the intensity of the pain syndrome. Patients are activated 4-6 hours after surgery.

When analyzing the immediate and long-term results of treatment, a clinical examination was used, the quality of life was determined using an adapted Oswestry questionnaire, pain syndrome on a visual analog scale (VAS), and an x-ray of the spine was performed in two standard projections. Before surgery in this group of patients, the wedge-shaped deformity of the vertebral body was 30-55% ($42.5 \pm 8.4\%$). During kyphoplasty, the height of the anterior segments of the fractured vertebra was restored by $20.0 \pm 6.2\%$ (Fig.). Correction of the angle of local kyphosis was achieved within $8-12^\circ$ ($7.3 \pm 2.5^\circ$). The pain syndrome decreased from 7.2 ± 1.9 to 2.5 ± 1.7 on the visual analogue scale. In the long-term period, there was no increase in pain syndrome, an increase in the angle of local kyphosis, and deformation of the vertebral body.

In the postoperative period, an analysis of possible complications arising after balloon kyphoplasty was performed. There were no infectious and embolic, as well as abdominal complications in the form of hemo- and pneumothorax, formation of intermuscular hematomas. Extravertebral outflow of bone cement was noted in 3 (13.4%) cases, including paravertebral outflow of bone cement in 2 patients, and intradiscal in 1 case, intracanal was not observed.

The frequency of complications in both groups did not exceed that according to a meta-analysis of foreign studies. In all patients, the course of complications was asymptomatic, not accompanied by neurological disorders. Complications arose due to an incorrectly selected viscosity of bone cement, as well as a high rate of its introduction.

Thus, percutaneous puncture kyphoplasty allows for minimally invasive, low-traumatic stabilization of vertebral body fractures in the thoracolumbar spine against the background of osteoporosis, restoring the strength characteristics of the damaged vertebra. Restoration of the height of the vertebral body leads to the restoration of the biomechanics of the spinal motion segment, thereby reducing the likelihood of fractures of the "adjacent" level. Providing a significant reduction in the intensity of the pain syndrome, it increases motor activity in patients with osteoporotic fractures of the thoracolumbar vertebrae.



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Oral Presentations

OP-01

Comparison of Endoscopic Lumbar Spinal Surgery Outcomes in Obese and Non-Obese Patient Groups

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OBJECTIVE: This study aims to compare endoscopic lumbar spinal surgery outcomes using the EasyGO! System between obese and non-obese patient groups.

METHOD: A total of 374 spine endoscopic procedures from 2011 to 2022 were analyzed. Based on BMI, 77 patients (21%) were non-obese and 294 (79%) were obese, with an average age of 55 years.

RESULTS: Procedures targeted various pathologies: prolapsed discs in 294 patients (79%), synovial cysts in 39 (11%), lateral lumbar spinal canal stenosis in 25 (7%), and central lumbar spinal stenosis in 13 (3%). Single-level surgery was performed on 330 patients (88.9%), two-level on 40 (10.8%), and five-level on 1 (0.3%). Most common was L4/5 level (42%). Reasons for admission included pain in 359 cases (97%), paresis in 202 (55%), and sensory deficits in 166 (45%). Surgery duration ranged from 15 to 205 minutes, averaging 62 minutes. No significant differences were seen between obesity groups ($p=0.232$). Intraoperative dural sac tears occurred in 20 cases (6.8%) in non-obese and 6 cases (8.4%) in obese, with significant differences ($p=0.016$). Pain relief was 95% in non-obese and 96% in obese; paresis recovery was 82% in non-obese and 80% in obese. Sensory deficits fully recovered in 41% cases. Hospital stays ranged from 1 to 40 days, averaging 5.25 days, with no significant differences between groups ($p=0.441$).

CONCLUSION: Comparable clinical outcomes were observed in endoscopic lumbar spinal surgeries. The obese group had a significantly higher rate of intraoperative dural sac tears (8.4%) ($p<0.05$).

OP-02

Cages Alone Versus Plate Fixation with Cages after Four Levels Anterior Cervical Discectomy

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PURPOSE: This study assessed clinical and radiological outcomes to support the surgical decision of ACDF using cages alone versus cage-with-plate fixation in patients with four-level spondylotic myelopathy of the cervical spine.

METHODS: This study enrolled 30 patients with four levels of cervical spondylotic myelopathy. The C Group ($n=15$) was subjected to ACDF using four cages, and the C&P Group ($n=15$) had additional plate fixation. They were followed up clinically and radiologically for at least 12 months. Scheduled for surgical intervention in the neurosurgery department of Misr University and hospitals of Al Azhar University and Nasr Institute from October 2020 to September 2021.

RESULTS: The operative time was significantly shorter in the Cage alone group. Neck and arm pain decreased after surgery in the two groups. The fusion percentage was 92%. The C2-C7 Cobb's angle increased significantly following surgery in both groups with no significant intergroup difference. postoperative complications were more common in patients who underwent plate fixation procedures.

CONCLUSION: In this small-scale study involving 30 patients, we explored the outcomes of anterior cervical discectomy and fusion including patients' radiological and clinical data using cages alone versus plate fixation with cages after four level ACDF. Our analysis revealed that both techniques are similarly effective in improving patient outcomes. However, postoperative complications were more common in patients who underwent plate fixation procedures.

Oral Presentations

OP-03

Our clinical results on percutaneous cage placement to the facet joint space in patients with cervical foraminal stenosis and radiculopathy

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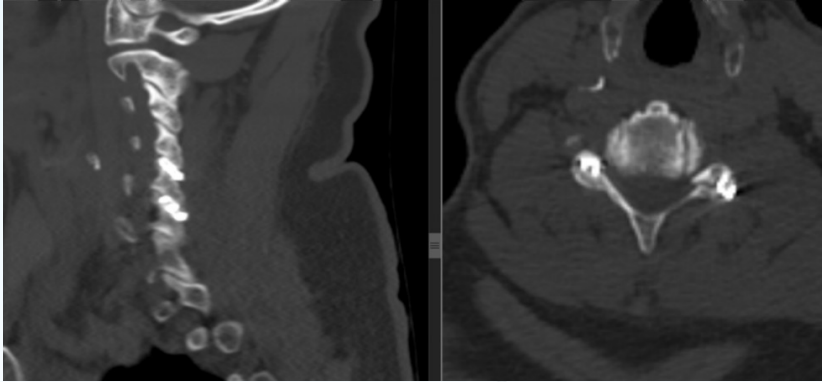
OBJECTIVE: Cervical radiculopathy usually affects individuals in the 5th decade. Surgical intervention may be required when conservative treatment has failed. Cage placement to facet joint space (CPFJS) is minimally invasive and can significantly treat cervical radicular symptoms. In this study, we aimed to share our experience.

METHOD: We had 19 patients who underwent CPFJS operation percutaneously between 2021-2022. The criteria for surgical intervention were the presence of radicular pain, cervical foraminal stenosis on radiologic examinations, and lack of adequate clinical response after conservative treatment. Patients were evaluated with preoperative and postoperative neck disability index (NDI) and visual analog scale (VAS) score for neck and arm pain.

FINDINGS: The mean age of the patients was 57,1 (34-74). 7 were female and 12 were male. 13 patients received bilateral two level operation, 5 patients received bilateral single level operation, 1 patient received unilateral left sided single level operation. The mean preoperative neck and arm VAS scores were 6,50 and 7,10 respectively. Postoperative neck and arm VAS scores were 2,1 and 2,4. Preoperative NDI was 65,1 and postoperative NDI was 15,2. The mean surgical time was 46 ± 13 minutes. The mean follow-up period was 12,6 (6-20) months. In 1 patient, facet joint fracture occurred during the procedure. 1 patient developed wound infection and was treated with antibiotherapy. No implant-related or unrelated neural complication was observed.

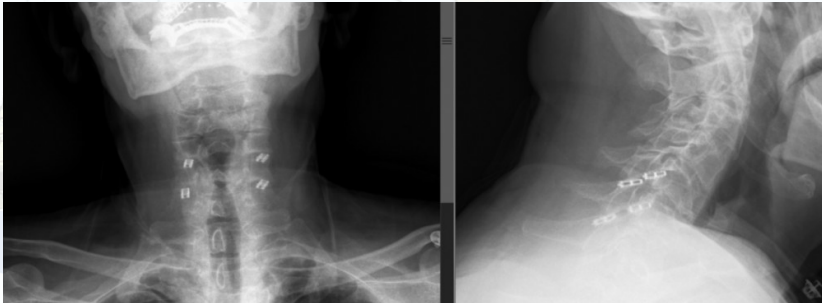
RESULT: As seen in the literature this study shows that in selected cases, percutaneous CPFJS is a suitable technique to treat patients with cervical foraminal stenosis and associated radiculopathy.

Case 1



Case 1: Postoperative cervical ct sagittal and axial image

Case 2



Postoperative radiograph

OP-04

Selective Apical Convex Rod Derotation: A fast and secure technique for the correction of adolescent idiopathic scoliosis - A case series of 38 patients

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INTRODUCTION: Adolescent idiopathic scoliosis (AIS) is the three-dimensional deformity of the spine of more than 10° affecting children from 10-18 years. Gold standard for the correction of larger curves is posterior fusion. With the help of osteotomies, the spine becomes mobile and the ideal alignment can be achieved with correction maneuvers. Derotations from the concave side harvest numerous complications like exacerbation of apical rotation, screw pull-out and implant failure. We present a novel technique of selective apical convex rod derotation (SACD) as an effective and safe maneuver for the correction of AIS and give the clinical results of our patients. **Surgical Technique:** After the transpedicular screws are placed, a short titanium rod is put on the convex-side screws just covering the apex and the screw nuts are loosely tightened. The convex apical rod are held with two rod holders and derotation is applied to the rod and the convex spine is pulled towards the midline. After the desired correction is reached, a permanent rod is placed to the concave side and screw nuts are tightened.

RESULTS: 38 patients have been included in this study. Preoperative median Cobb angle was 47.19°, postoperative Cobb angle was measured as 18.45° and one year follow-up was 17.25°. Thoracic kyphosis values were 19.07°, 30.52° and 33.05°, respectively. Lumbar lordosis were measured as 42.63°, 43° and 45.75°, respectively.

CONCLUSION: SACD is an effective treatment for AIS with minimal risk for screw pull-out, pedicular bursting or hypokyphosis. Correction results are similar to classic correction maneuvers.

Figure 1



Inserting of transient short rod on the convex apex

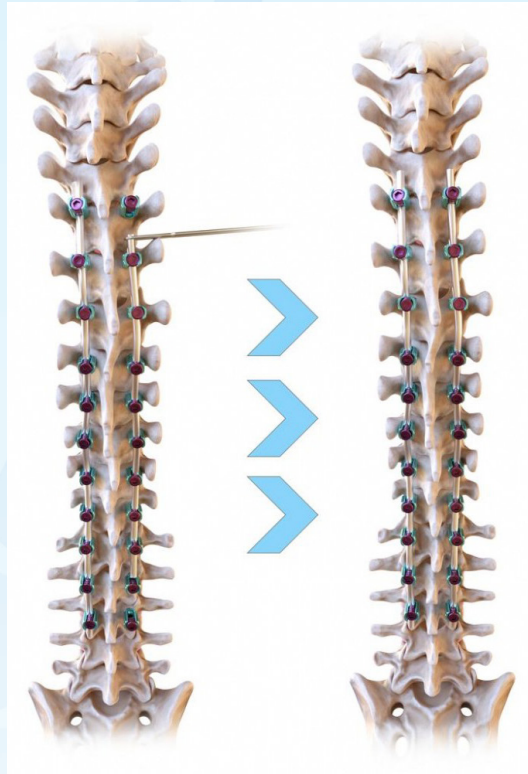
Oral Presentations

Figure 2



Illustration of the derotation maneuver

Figure 3



Final image after the derotation

OP-05

Myoclonic seizures after endoscopic cervical disc surgery: a rare complication or just coincidence?

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PURPOSE: To present a unique case of myoclonic seizures after endoscopic cervical disc surgery without any sign of intracranial hypotension or pneumocephalus

CASE PRESENTATION: A 34 year-old female patient without any history of previous convulsions presented to our outpatient clinic with severe neck and right arm pain for 10 days. MRI revealed a right-sided C6-C7 disc herniation with syringomyelia from C5 to T2. The patient was scheduled for endoscopic cervical interlaminar disc surgery the next day. The surgery went without any complications. On the postoperative 36th hour, the patient experienced myoclonic seizures lasting for one minute. Blood work, cranial MRI and EEG was scheduled to investigate the etiology of the seizures but no abnormality could be found.

DISCUSSION: Seizures after spinal procedures are extremely rare and are mostly associated with accidental durotomy-induced intracranial hypotension or pneumocephalus. We did not observe any leak of cerebrospinal fluid or pneumocephalus in our case. Also no possible causes like epileptogenic anesthetic agents or spinal cord trauma could be observed as a possible cause.

CONCLUSION: We believe that during the surgery the summary of manipulation of neural structures, together with the irrigation of the endoscope and the syringomyelia may have caused a disturbance of electrical pathways of the spinal cord which might have let to the electrical discharge causing the seizure.

OP-06

Innocently Applied Opioid Analgesic for Pain Control After Spinal Surgery May Risk Life: Tramadol-Induced Refractory Status Epilepticus and a Systematic Review of the Literature

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INTRODUCTION: This study aimed to present a case diagnosed as refractory status epilepticus who developed generalized tonic-clonic seizure following intravenous (IV) infusion of tramadol hydrochloride for the relief of low back pain after lumbar disc surgery, was refractory to all routine antiepileptic treatment and was intubated and pentotalized due to recurrent generalized tonic-clonic seizures.

METHOD: In this study, the keywords “epilepsy,” “seizures,” “status epilepticus,” “convulsive status epilepticus,” “refractory status epilepticus,” “super refractory status epilepticus” and “drug-drug interaction” were searched in the presence of and with signs that obtained from 57 years old woman, that developed generalized tonic-clonic seizure, and compared with the data obtained from clinical studies with high level of evidence. The data were collected in a Microsoft Office Programme (version 10) Excel list. Results were presented in numbers and percentages (frequency, %) (Table 1).

RESULTS: A total of 800 studies were identified after literature research on the subject; 116 were case reports. At the same time, 62 were reported to be clinical studies. After the full-text analyses, no studies were available in the literature similar to the case presented in this article (Figure 1).

DISCUSSION AND CONCLUSION: This study added a new case description by reviewing previous articles on cases of IV tramadol hydrochloride administration associated with refractory status epilepticus. Since it is vital to be careful in pharmacological approaches to be preferred in pain management by evaluating the individual's health, safety, and possible risks, opioid analgesics in acute pain associated with spinal surgery are inappropriate.

Figure1

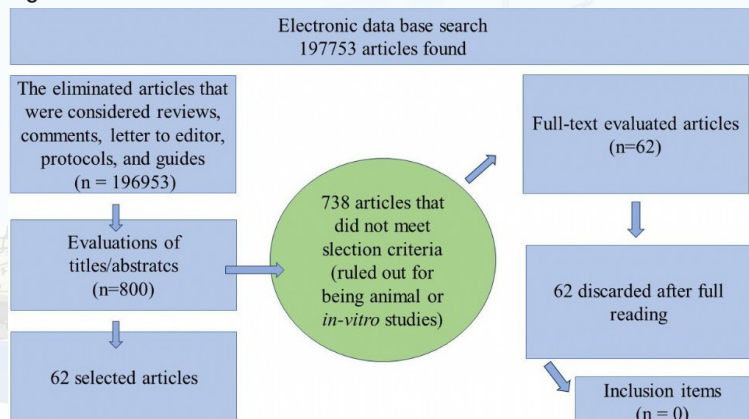


Figure 1. Flowchart of selection of studies for inclusion in umbrella review.

Oral Presentations

Table1

Keywords (publication year range)	Case reports (quantity)	Clinical study (quantity)	Review (quantity)	Systematic review (quantity)	Meta-analysis (quantity)	Total (quantity)
Epilepsy + Tramadol hydrochloride (1998-2023)	11	0	4	1	0	31
Seizures + Tramadol hydrochloride (1992-2023)	39	3	16	4	2	189
Epilepsy + Fentanyl + Tramadol hydrochloride (1998-2023)	0	0	1	1	0	3
Seizures + Fentanyl + Tramadol hydrochloride (1992-2023)	0	0	4	0	0	10
Epilepsy + Ondansetron + Tramadol hydrochloride (2012)	1	0	0	0	0	1
Seizures + Ondansetron + Tramadol hydrochloride (2012-2023)	1	0	0	0	0	2
Epilepsy + Rocuronium bromide + Tramadol hydrochloride	1	0	0	0	0	0
Seizures + Rocuronium bromide + Tramadol hydrochloride	1	0	0	0	0	0
Epilepsy + Suggamadex + Tramadol hydrochloride	0	0	0	0	0	0
Seizures + Suggamadex + Tramadol hydrochloride	0	0	0	0	0	0
Drug-drug interaction + Tramadol hydrochloride (1978-2023)	60	57	97	9	7	530
Epilepsy + Drug-drug interaction + Tramadol hydrochloride (1998-2023)	1	0	2	0	0	6
Seizures + Drug-drug interaction + Tramadol hydrochloride (1998-2023)	3	1	4	1	0	28
All Keywords	0	0	0	0	0	0

Searches performed before detailed examination of the full texts of articles

OP-07

Position of the nerve root in relation to disc space in cervical posterior surgery

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OBJECTIVE: To describe the intraoperative disc and nerve root position during posterior endoscopic surgery in different levels of the cervical spine.

METHODS: This retrospective study analyses the intraoperative video recordings of 20 patients (13 male, 7 female) who underwent mono-segmental cervical surgery using the EasyGo!System in Frykholm technique from 2018 to 2023. Screenshots were evaluated showing the position of the nerve root in relation to the disc space during cervical posterior surgery.

RESULTS: A total of 8 nerve roots were horizontal, 2 were displaced cranially, and 10 caudally. In 14 of the cases, the nerve root was displaced dorsally at decompression. There were 12 Frykholm surgeries performed at the level of C6/7, with the C7 nerve root running horizontally in 4 cases, caudally in 6 cases, and cranially in 2 cases. In 5 cases, at the level of C5/6, the C6 nerve root was observed to run twice horizontally and three times caudally. In segments C7/Th1, the root runs horizontally. In C4/5, the course is once horizontal and once caudal.

SUMMARY: Relative to the pathology, the course of the nerve root also varies, whereby it is often displaced dorsally during decompression. The more caudal the procedure of the cervical spine is undertaken the more likely a nerve root position traveling from caudal to cranial is observed. These findings must be considered to reduce the risk of nerve root injury in posterior cervical surgery.

OP-08

Percutaneous Cervical Cryodenervation in 16 Patients with Cervical Facet Joint Syndrome

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BACKGROUND AND OBJECTIVES: Cervical facet joint syndrome is an increasingly prevalent health issue in modern society and one of the most common causes of neck pain. This study aims to evaluate the efficacy of percutaneous cervical cryodenervation (PCC) in patients with this syndrome.

METHODS: In this prospective, randomized study, a total of 16 patients were included. Patients' pain and functional statuses were assessed at four different time intervals: pre-procedure, and 1 month, 6 months, and 1 year post-procedure. Assessments were conducted using the Visual Analog Scale (VAS) and the Neck Pain Functional Scale (NPFS). Statistical analyses were performed using SPSS 25.0 and PAST 3 software.

RESULTS: VAS scores significantly decreased post-procedure and this effect persisted for 1 year ($p < 0.001$). NPFS scores significantly increased at the 6-month post-procedure mark and this increase continued for 1 year ($p < 0.001$). Additionally, significant pain relief was observed from the first month post-procedure.

CONCLUSION: This study demonstrates that PCC is an effective treatment method for patients with cervical facet joint syndrome. The procedure significantly reduced pain and improved functional capacity. Notably, functional improvement was observed from the 6th month post-procedure, supporting the long-term effects of the treatment.

Oral Presentations

OP-09

Optimal surgical methods for solitary metastasis of the thoracolumbar spine

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BACKGROUND: The aim of this study was to identify optimal surgical methods for extra-compartmental solitary metastasis of the thoracolumbar spine.

METHODS: From January 2003 to December 2017, 45 patients who underwent surgical treatment for solitary metastases of the thoracolumbar spine were enrolled. We classified patients into four groups: stabilization alone, decompression with stabilization, piecemeal corpectomy, and total en bloc spondylectomy (TES). For the four groups, the overall survival (OS), local recurrence-free survival (RFS), and distant RFS were calculated by Kaplan-Meier survival curves and compared using log-rank test. Univariate Cox proportional hazards regression models were used to analyze efficiency of surgical methods.

RESULTS: There were 8 cases of stabilization alone, 12 cases of decompression with stabilization, 16 cases of piecemeal corpectomy, and 9 cases of TES. The local recurrence rate of the TES group was lower than those of the other three groups, but it did not reach statistical significance. The distant recurrence rate was higher in the piecemeal corpectomy group than in the decompression with stabilization group ($p = 0.006$). Compared to the stabilization alone group, the piecemeal corpectomy group was significantly associated with a decreased OS (hazard ratio [HR] = 3.86, $p = 0.037$) and a decreased distant RFS (HR = 3.59, $p = 0.026$) in univariate Cox proportional hazards regression model.

CONCLUSION: Based on our results, no definitive recommendations for surgical methods can be drawn. Thus, surgical methods should be tailored to individual cases to maximize tumor control and reduce recurrence rate and risk of postoperative complications.

OP-10

c1-2 instrumentation and unilateral 3 level percutaneous cage placement to facet joint space in a trauma patient with odontoid fracture and cervical scoliosis: case report

Kemal Süheda Özkavaklı, İsmail İstemen, Can Sezer, Gokhan Cavus, Emre Bilgin

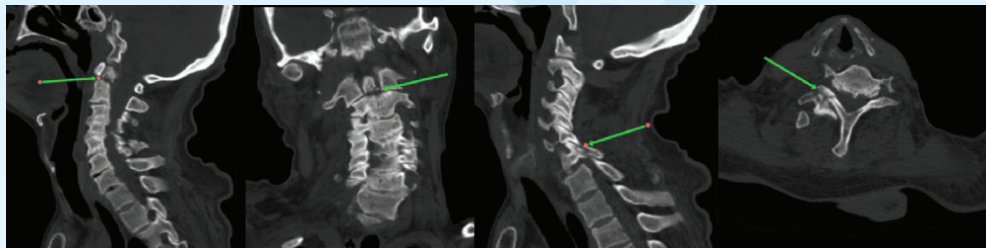
University of Health Sciences, Adana Faculty of Medicine, Department of Neurosurgery, Adana, Turkey

AIMS: In this study, we aimed to share our patient with odontoid fracture and c7 right facet fracture, who had also cervical scoliotic deformity, cervical stenosis and posttraumatic central cord syndrome and underwent percutaneous cage placement to facet joint space (CPFJS) and fusion surgery with c1-2 instrument in the same session.

CASE: A 68 year old male patient had a traffic accident 3 weeks ago. On presentation, the upper extremities were paretic, prominent on the right side, muscle strength 2/5 in lower extremities. He has voluntary anal contraction. Incomplete central cord syndrome was considered in the patient and it was ASIA-C according to the ASIA classification. Radiological studies showed odontoid fracture, multilevel cervical and foraminal stenosis, c7 right facet fracture, cervical dextroscoliosis with a Cobb angle of 15.5 degrees. The patient underwent c1-2 fusion surgery after 3 levels right-sided unilateral percutaneous CPFJS surgery. The cervical Cobb angle was 0.9 degrees postoperatively. Significant improvement in muscle strength was observed in the early postoperative period. After physiotherapy, in the 3rd month, the patient was able to walk without support and no significant deficits were observed in the upper extremities

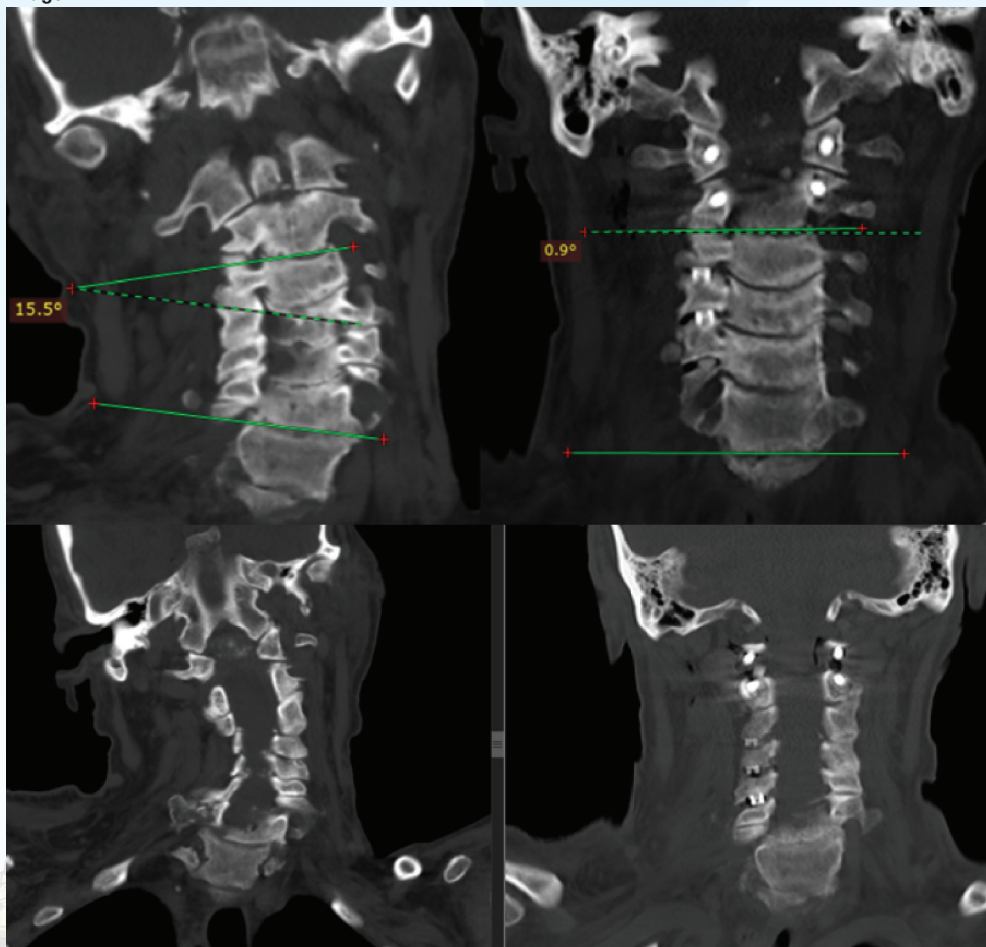
RESULT: It should be kept in mind that many pathologies can be seen simultaneously in trauma patients. CPFJS surgery in patients with cervical stenosis is an effective and successful method that is frequently used today. In this case, it has been shown that unilateral multilevel CPFJS can improve the scoliotic deformity and provide clinical improvement in the patient.

Image 1



In the 2 photos on the left, preoperative sagittal and coronal CT images show type 2 odontoid fracture as indicated by the arrow. In the 2 photos on the right, c7 right facet fracture is seen as indicated by the arrow.

Image 2



Cervical CT images in coronal plane. The preoperative cobb angle on the left is 15.5 and the postoperative cobb angle on the right is 0.9 degrees.

Oral Presentations

OP-11

Contralateral interlaminar approach using biportal endoscopy for intraforaminal disc herniation due to craniolaterally migration: a technical case report

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PURPOSE: It is estimated that roughly 10-20% of all disc herniations migrate craniolaterally and may be located in the preforaminal or intraforaminal regions. Surgery for intraforaminal disc herniations is technically demanding. Ipsilateral approaches (medial and lateral) are accompanied by extended resection of the facet joint and inadequate visualization of the pathology. In this study, a contralateral interlaminar approach (CIA) with biportal endoscopy (UBE), which has the advantages of structural protection, efficacy and safety in foraminal disc herniation, is presented.

CASE PRESENTATION: A 38-year-old female presented with an extreme left radicular pain since one week. MRI revealed compression of left L4 nerve root due to craniolateral migrated L4-5 disc herniation on the left side. She underwent a biportal endoscopic removal of disc herniation fragments via CIA.

RESULT: Early postoperative MRI confirmed appropriate decompression and the VAS score decreased from 9 to 1.

CONCLUSION: CIA using UBE is a safe and effective surgical option for IFDH without risk of iatrogenic instability. Advantages of this approach includes facet joint preservation and good visualization of lateral recesses.

OP-12

An uncommon presentation of malposed pedicle screw: aort pulsating screw

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Transpedicular screw stabilization is a widely used technique for thoracolumbar diseases. Surgeons must exercise increased care during thoracic transpedicular screw fixation due to region's anatomical challenges.

Our CASE: 59-year-old woman who developed kyphosis during follow-up of spinal infection. First stabilization surgery had a wrongly placement screw. In subsequent operation, this screw exhibited pulsations synchronized with the patient's cardiac rhythm within spine.

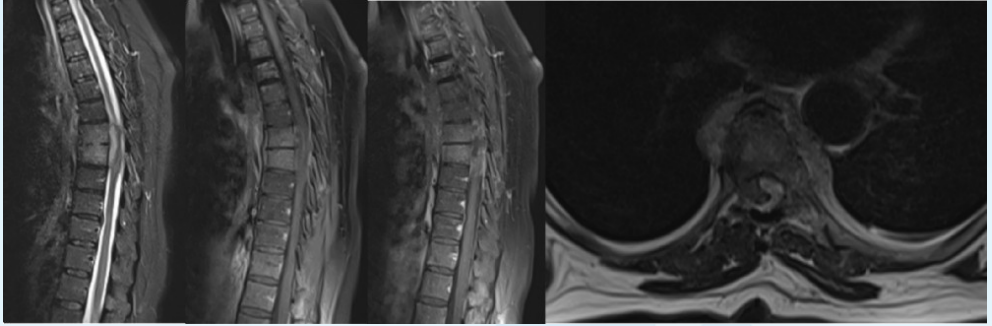
Transpedicular screw stabilization is a popular method for addressing instability caused by thoracolumbar diseases. Surgeons should approach thoracic region with caution.

In our case, a 59-year-old female patient underwent surgery for the diagnosis of a spinal epidural tumor or infection. Initial surgery confirmed infection. As kyphosis angle worsened six months after infection treatment, posterior stabilization was performed. Given severity of kyphosis and weakened vertebrae due to infection treatment, two pedicle screws were malpositioned in early postoperative phase. When it was observed left pedicle screw was in contact with aorta, emergency surgery initiated for screw revision. Patient's hemodynamics remained stable. During surgery, aortic pulsation reflected on pedicle screw was observed during removal of pedicle screw.

The mispositioned screws were successfully revised, with no complications during the perioperative period.

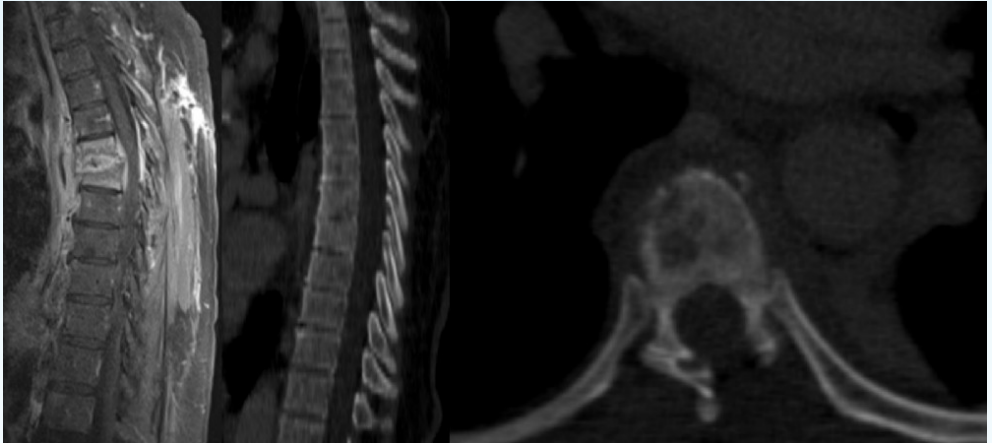
In thoracic screw surgery, higher malposition rate can be attributed to factors such as vertebral anatomy, limited experience compared to lumbar region, structural compromise due to infection. Given its proximity to vessels and organ, thoracic surgery carries elevated mortality and morbidity. Thus, meticulous care in thoracic screw applications is imperative, and timely revision surgery should be undertaken in the presence of complications.

Image 1: Pre Operative MRI



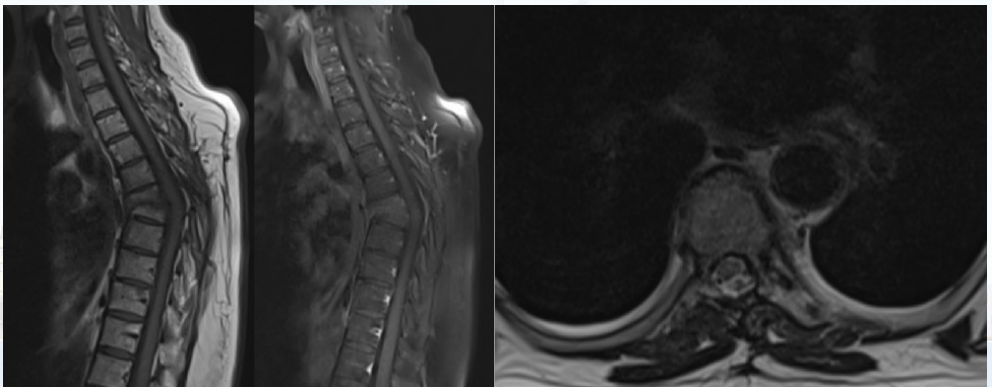
Initial diagnoses are tumor and infection

Image 2: CT scan after the first operation



First operation was a 2 level hemilaminectomy in order to relaxate the cord and take biopsy

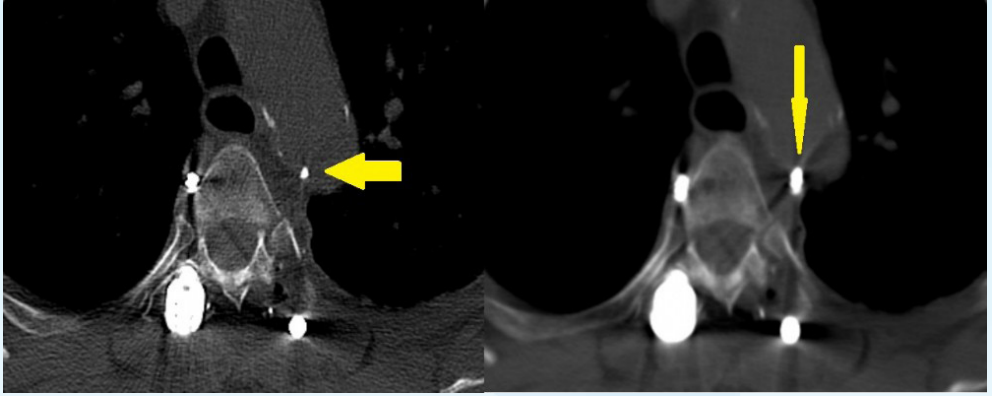
Image 3: MRI at he 6th month after the surgery



The infection cased severe kyphosis and motor deficit

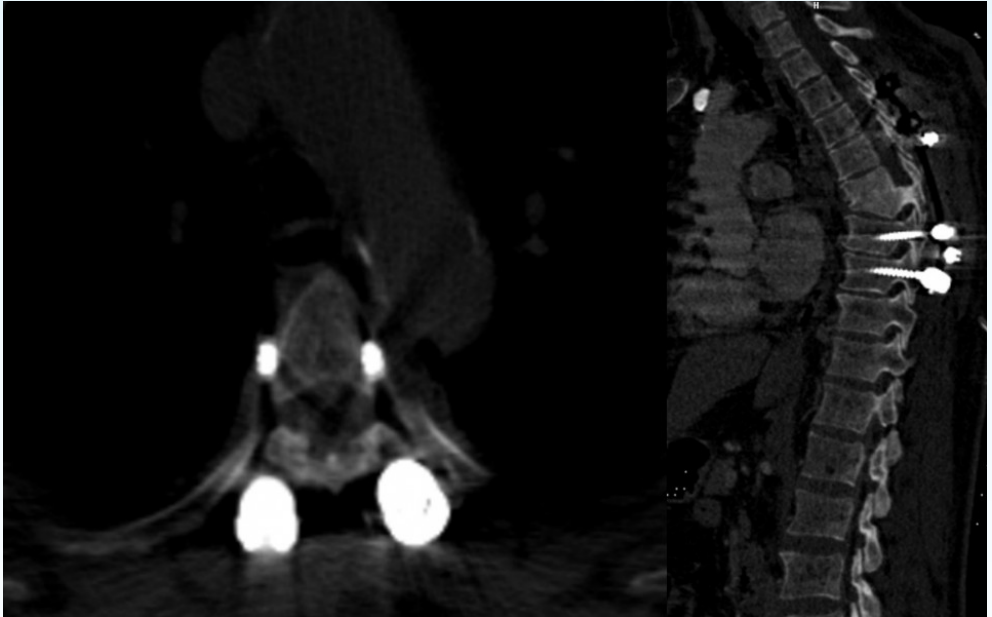
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Image 4: Pedicle screw that touches aorta



This screw was pulsating together with aorta before it was removed for revision of the screw

Image 5: CT after the final surgery



Kyphosis was partially corrected, future progression was halted and malposed screw revised



OP-13

Endoscopic cervical and lumbar spine surgery

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The primary idea of endoscopic spine surgery (ESS) was to reduce muscle trauma. In this work the authors present their experience in ESS for the treatment of cervical and lumbar degenerative disorders

MATERIAL-METHOD: In the past decade ESS has been performed in over 500. Clinical data about neck and back pain, arm and leg pain, intra- and perioperative complication, and reoperation was prospectively collected in 319 patients. Patients who underwent ESS via a paramedian approach for degenerative cervical or lumbar disorders with a minimum follow-up of 3 months were contacted for a final follow-up. At final follow-up a personal examination and a standardized questionnaire was performed including the ODI, NDI, and the modified MacNab/Odoms Criteria. **RESULTS:** 260 out of 319 patients attended the final follow-up (82%). 60 patients underwent ESS for posterior cervical foraminotomy (PCF), 18 for lumbar synovial cyst (LSC), 66 for decompression of lateral recess (LRS) or central canal stenosis (LSS), and 116 for lumbar disc herniation (LDH). The mean follow-up was 52 months. The rate for radicular pain relief in LDH, LSC, LRS/LSS and PCF procedure were 92%, 90%, 93%, and 86% respectively. No weakness was documented in 85% of lumbar and 86% cervical spine cases. The mean ODI was 14.0% and mean NDI was 12%. According to MacNab/Odoms criteria clinical success was noted in 91% and 89%, respectively. The dural tear rate varied from 1.1% in LDH to 21% in LSC procedures and all were closed endoscopically. The recurrent disc herniation rate was 6.1%. The mean surgical time decreased from 71 to 54 minutes.

CONCLUSION: ESS is a safe and effective technique to treat degenerative cervical and lumbar spine disorders. The rates for pain relief, clinical success, intraoperative complication, and reoperation are similar to established open procedures

OP-14

Diagnosing Tethered Cord When MRI Is Not Possible: A Technique From The Past

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BACKGROUND: Tethered cord is a developmental defect typically identified in the early years of life, along with motor function loss, gait problems, and urine abnormalities. While magnetic resonance imaging (MRI) is the gold standard diagnostic tool, MRI is not an option in the cases of metallic aortic valves. We present an adult case of spinal dysraphism with a metallic aortic valve.

METHODS: A 32-year-old male with Marfan syndrome and a metallic aortic valve presented with urinary incontinence, erectile dysfunction, and gait abnormalities. He complained of difficulty standing upright with the tension in his neck. He had a history of an aortic aneurysm rupture that caused motor loss of right foot dorsiflexion. Inspection revealed he had hair tuft on the lower lumbar-sacral region. His urodynamic test pointed out a neurological condition. EMG revealed chronic radiculopathy. Computed tomography (CT) depicted degenerative scoliosis with a Tarlov cyst. Since MRI scanning was counter-indicated due to the metallic aortic valve replacement, a CT myelogram was obtained, which revealed a closed spinal dysraphism with a thick filum terminale suggestive of a tethered cord syndrome.

RESULTS: The surgery revealed a thick, fat-rich filum terminale with closed spinal dysraphism. Untethering of the filum terminale with the reconstruction of the spinal dysraphism was performed. He was discharged with improvement in gait.

CONCLUSIONS: CT myelogram is still viable in selected diagnoses when MRI scanning is contraindicated. Tethered cord is not a pathology restricted to only childhood and early adulthood. It should be considered among adult cases with stigmas and associated symptoms.

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Poster Presentations

PP-02

Spontaneous Thoracic Epidural Hematoma in the Psychiatry Inpatient Unit: A Misdiagnosis with Conversion Disorder

*Bilal Bahadır Akbulut, Mustafa Serdar Bölük, Huseyin Biceroglu, Taşkın Yurtseven
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Spontaneous spinal epidural hematoma is a rare pathology that has the prevalence of 0.1 per 100,000. It has devastating results and requires urgent surgery. We describe such a case that has been consulted to our department after 3 days of onset due to misdiagnosis with conversion disorder.

An 18-year-old female was admitted to the department of psychiatry inpatient unit due to her suicidal thoughts and history of suicide attempts. A day after admission, the patient complained of back pain and difficulty walking. After 2 days, the patient had difficulty urinating and was completely bedridden. Neurology was consulted, and a subsequent MRI revealed an epidural hematoma on the thoracic 2-4 level, completely obliterating the spinal cord. The patient was referred to our department, and upon examination, the patient was now ASIA Grade A. An emergent hematoma evacuation was performed. The patient showed marked improvement post-operatively and on day 3 she was able to move both her legs against gravity.

Even though spontaneous spinal epidural hematoma is a rare pathology, one must be watchful for it regardless. While conversion disorder cannot truly be considered a diagnosis of exclusion, one should always exclude major neurological diseases.

PP-03

Synovial Cyst Mimicking Breast Cancer Metastasis: A Case Report

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Breast cancer is the most common tumor in women and it most commonly metastasizes to the bone and tends to metastasize to the spine. Metastases to the spine are associated with back pain, radicular pain, and motor/sensory loss. Synovial cysts are usually located at the joints and spinal synovial cysts are rather uncommon, yet with the increased number of MRI scans, more of them are seen each year.

Here we present a case of a lumbar synovial cyst diagnosed in a 50-year-old female with a history of breast cancer that presented with left-sided leg pain, and back pain that started 2 months ago. She had no motor/sensory loss. PET-CT scan didn't show any metastasis, yet a follow-up MRI showed an extradural lesion that had low intensity in both T1 and T2 weighted images revealed a lesion that was located on the L3-4 level in the spinal canal next to the right pedicle that had a size of 8.3 x 7.9 x 7.1 cms.

A right-sided hemilaminectomy was performed on the L3 level which revealed a cystic lesion, which was removed. The patient's pain was reduced and there was no post-operative motor loss. Post-operative MRI revealed that the tumor was removed totally. Pathological examination revealed that it was a synovial cyst. The patient was followed up for 2 years for any recurrences and possible metastasis and there were no recurrences.

While in patients with primary malignancies, metastases should be considered for diagnosis, there might be more benign pathologies underlying.

Poster Presentations

PP-04

Full Endoscopic Lumbar Discectomy: A Single-Junior-Surgeon Experience in Eastern Anatolia

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BACKGROUND: Full-endoscopic lumbar discectomy offers benefits like less tissue damage and quicker recovery. This study aims to be the first known report of full-endoscopic interlaminar lumbar discectomy operations in Eastern Anatolia region of Turkey, performed by a single junior surgeon under return of service practice.

METHODS: A single-center, retrospective study including 16 patients operated with interlaminar technique between March and August 2023. A single junior surgeon performed all surgeries. Data on age, laterality, operation level, and complications were analyzed using descriptive statistics.

RESULTS: Average age was 33.3 years, with a range of 20 to 54. Right-side operations occurred in 9 patients (56.25%) and left-side in 7 (43.75%). L5-S1 was the most common level in 15 of 16 cases (93.75%). Only one case was performed at the L4-5 level. Complications included two cases of nerve root injury requiring a transition to microscopic discectomy. One case experienced postoperative respiratory distress, but improved within hours. At 1-month follow-up, two patients reported leg pain. No additional pain reported in up to 6-month follow-ups.

DISCUSSION: We present the initial 16 cases of endoscopic lumbar discectomy performed in Eastern Anatolia by a junior surgeon who had not conducted this procedure solo during his training. Our findings indicate that this advanced surgical technique is feasible even for a junior surgeon without supervision or prior independent experience. However, caution is advised due to the risk of nerve root injuries. The findings contribute to the literature in Turkey and underline the need for more research on long-term outcomes.

PP-07

Expanding Horizons of Unilateral Biportal Endoscopy (UBE) in Minimally Invasive Lumbar Spine Surgery: A Comprehensive Review

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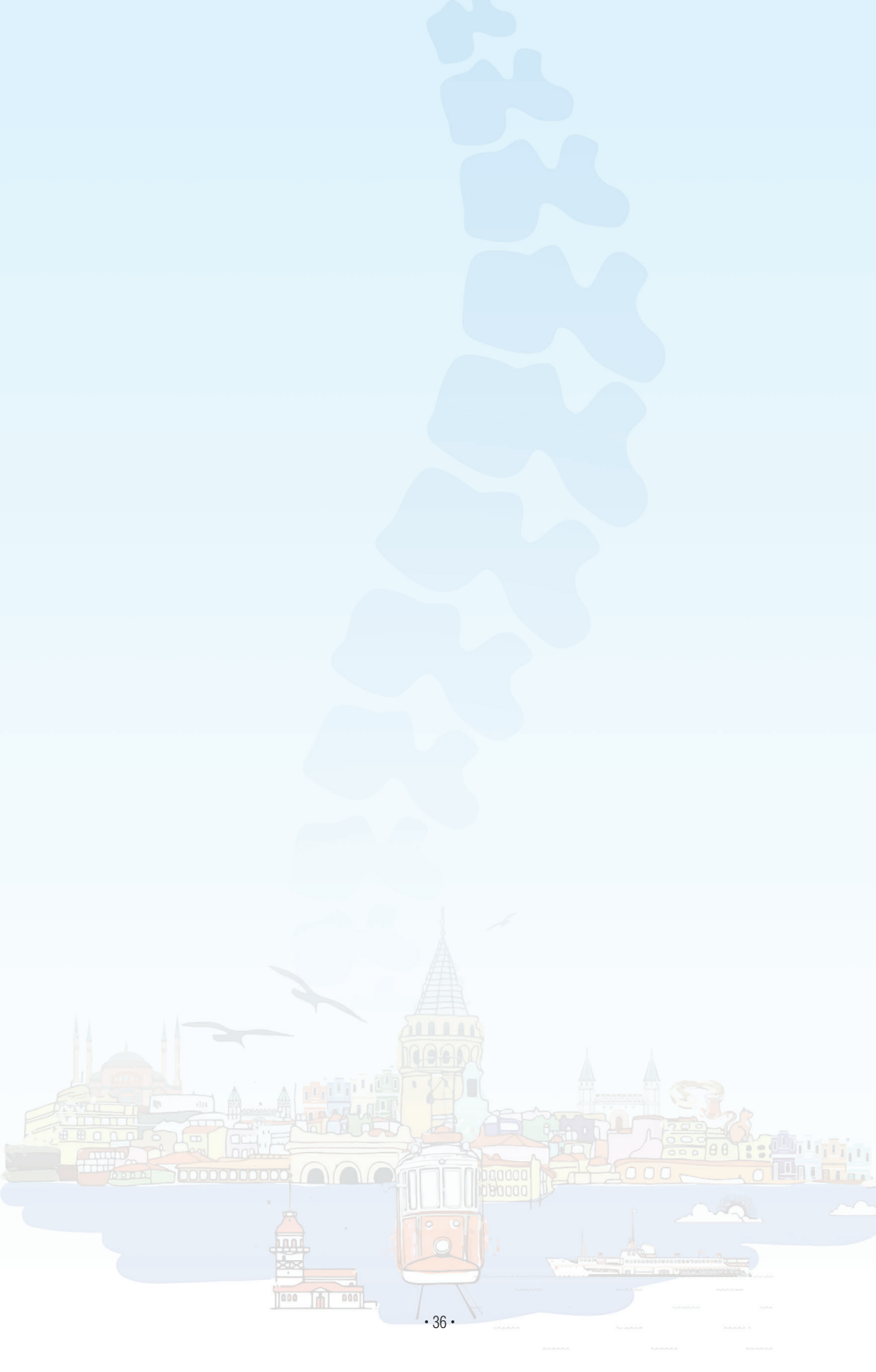
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OBJECTIVE: This review evaluates the evolving applications of unilateral biportal endoscopy (UBE) in managing lumbar-related diseases, emphasizing its emerging role in addressing various lumbar pathologies.

METHODS: We conducted an exhaustive literature analysis to explore the versatile applications of the UBE technique for lumbar diseases. This encompassed historical development, clinical applications, procedural intricacies, complications, advantages, and limitations of UBE.

RESULTS: The recent integration of UBE has demonstrated remarkable efficacy in addressing lumbar stenosis, irrespective of causal factors. UBE consistently achieves successful decompression while minimizing tissue trauma and preserving lumbar stability. When managing lumbar disc herniation, UBE offers distinct advantages over traditional open, or microscopy assisted surgery. In cases of lumbar spondylolisthesis, UBE incurs less postoperative trauma, yielding favorable fusion outcomes. Although infrequent, complications such as spinal cord injury, spinal epidural hematoma, incomplete decompression, recurrence, nerve root irritation, and postoperative infections do occur.

CONCLUSION: The UBE technique, characterized by its learning curve, standard instrumentation, and well-established efficacy, demonstrates versatility in treating various lumbar diseases. Utilization of endoscopy, featuring miniature cameras with continuous water irrigation, enhances the surgical field, reduces tissue dissection, and expedites recovery. This approach aligns with the broader trend in various medical disciplines, signifying the increasing prevalence of endoscopy in surgery. Turkish spine surgeons are encouraged to proactively align with the evolving trends in spinal endoscopy, in the rapidly evolving landscape of spinal healthcare.



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