

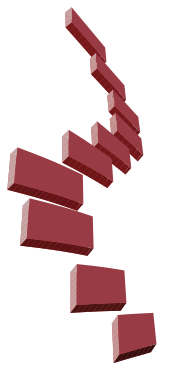


JOURNAL OF TURKISH SPINAL SURGERY

JANUARY
2024

► VOLUME: 35
► ISSUE: 1





► EDITORIAL BOARD

► Editor

M.D., Prof. Metin ÖZALAY

Ortogrup Orthopedics and Traumatology Clinic, Adana, Turkey

ORCID: <https://orcid.org/0000-0002-2506-9712>

E-mail: metinozalay@gmail.com

► Assistant Editors

M.D., Assoc. Prof. Turgut AKGÜL

İstanbul University, İstanbul Faculty of Medicine, Department of

Orthopedics and Traumatology, İstanbul, Turkey

ORCID: <https://orcid.org/0000-0002-0704-3797>

E-mail: turgut.aggul@istanbul.edu.tr

M.D., Assoc. Prof. Ali DALGIÇ

Medicana International Ankara Hospital, Clinic of Neurosurgery,
Ankara, Turkey

ORCID: <https://orcid.org/0000-0003-1000-2811>

E-mail: ali.dalgic@medicana.com.tr

M.D., Prof. Gökhan DEMİRKİRAN

Hacettepe University Faculty of Medicine Hospital, Department of
Orthopedics and Traumatology, Ankara, Turkey

ORCID: <https://orcid.org/0000-0001-5612-5599>

E-mail: Gdemirkiran@hacettepe.edu.tr

M.D., Prof. Erden ERTÜNER

İstinye University Faculty of Medicine, Department of Orthopedics and
Traumatology, İstanbul, Turkey

ORCID: <https://orcid.org/0000-0003-4489-5937>

E-mail: erden.erturer@istinye.edu.tr

M.D., Assoc. Prof. Erkin SÖNMEZ

Başkent University Faculty of Medicine, Department of Neurosurgery,
Ankara, Turkey

ORCID: <https://orcid.org/0000-0002-5693-3542>

E-mail: erkins@baskent.edu.tr

M.D., Assoc. Prof. Tuna PEHLİVANOĞLU

Liv Hospital Ulus Clinic of Orthopedic Surgery, Liv Spine Center,
İstanbul, Turkey

Istinye University Faculty of Medicine, Department of Orthopaedic
Surgery, İstanbul, Turkey

ORCID: <https://orcid.org/0000-0001-8886-7538>

E-mail: dr.tuna@hotmail.com

M.D., Prof. Ender KÖKTEKİR

Selçuk University Faculty of Medicine, Department of Neurosurgery,
Konya, Turkey

ORCID: <https://orcid.org/0000-0002-6442-6663>

E-mail: enderkoktekirnrs@hotmail.com

► Secretaries of JTSS

M.D., Assoc. Prof. Ömer ERŞEN

University of Health Sciences Turkey, Gülhane Faculty of Medicine,
Department of Orthopedics and Traumatology, Ankara, Turkey

ORCID: <https://orcid.org/0000-0001-7351-6305>

E-mail: omer.ersen@sbu.edu.tr

M.D., Ümit Özgür GÜLER

Private Clinic, Ankara, Turkey

ORCID: <https://orcid.org/0000-0002-5375-635X>

E-mail: umitogurguler@yahoo.com

► SCIENTIFIC BOARD

Kuniyoshi ABUMİ

İbrahim Altan ACAR

Rifat Emre ACAROĞLU

Haluk AĞUŞ

Serdar AKALIN

Ömer AKÇALI

Mutlu AKDOĞAN

Burak AKESEN

Yunus Emre AKMAN

Mehmet Atıf Erol AKSEKİLİ

Erdem AKTAŞ

Ahmet ALANAY

Akif ALBAYRAK

Emin ALICI

Mehmet Akif ALTAY

Mehmet ALTINMAKAS

Faruk ALTINEL

Necdet Şükrü ALTUN

Veysel ANTAR

Mahmut ARGÜN

Ali ARSLANTAŞ

Richard ASSAKER

Özkan ATEŞ

Yunus ATICI

Ramazan ATİÇ

Halil ATMACA

Ayhan ATTAR

Abdurrahman AYCAN

Hakan AYCAN

Varol AYDIN

Önder AYDINGÖZ

Ufuk AYDINLI

Mehmet AYDOĞAN

Evren AYDOĞMUŞ

Hayati AYGÜN

Selim AYHAN

Bilal AYKAÇ

Hasan Murat AYTEN

Mehmet AYVAZ

Nikola AZAR

Abdurrahman BAKIR

Naci BALAK

Tevfik BALIKÇI

Fatih BAYGUTALP

Mehmet Kürşad BAYRAKTAR

Şenol BEKMEZ

Süleyman Bülent BEKTAŞER

İsmet Teoman BENLİ

Traumatology, İstanbul, Turkey

Rasim Haluk BERK

Murat BEZER

Burak BİLEKLİ

Serkan BİLGİÇ

Abdülkadir Şükrü BİRLER

Thomas Roger BLATTERT

Burak Orhan BORAN

Hüseyin BOTANLIOĞLU

Celal BOZKURT

İsmail BOZKURT

Muhtar Hakan BOZKUŞ

Alp Özgün BÖRCEK

Ali BÖREKÇİ

Erkut Baha BULDUK

Halil BURÇ

Balioğlu Mehmet BÜLENT

Suat CANBAY

Mustafa CANIKLIOĞLU

Aydın CANPOLAT

Tufan CANSEVER

Oğuz CEBESOY

Yashar CELİLOV

Mehmet Fethi CEYLAN

Wai Yuen CHEUNG

Asım CILIZ

Erdoğan CİVELEK

Mehmet Erdal COŞKUN

Yusuf Şükrü ÇAĞLAR

Mehmet Sedat ÇAĞLI

Arif Tarkan ÇALIŞANELLER

İslam ÇALIŞKAN

Gökhan ÇAVUŞ

Süleyman Rüştü ÇAYLI

Suat Erol ÇELİK

Erhan ÇELİKOĞLU

Mustafa ÇELİKTAŞ

Nuri Eralp ÇETİNALP

Mehmet ÇETİNKAYA

Bayram ÇIRAK

Mert ÇİFTDEMİR

Soner ÇİVİ

Sedat DALBAYRAK

Alihan DERİNCEK

Gökhan DEMİRKİRAN

Hatice Evren EKER

Serkan ERKAN

Hüseyin Yener ERKEN

Duygu Geler KÜLCÜ

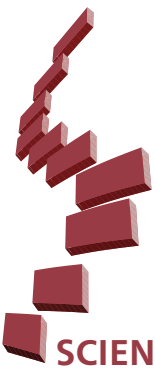
Haydar GÖK

Doğaç KARAGÜVEN

Turgut Nedim

KARAİSMAİLOĞLU

Ahmet KARAKAŞLI



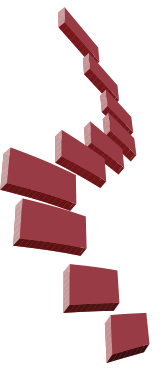
JOURNAL OF TURKISH SPINAL SURGERY

SCIENTIFIC BOARD

Yaşar KARATAŞ
Deniz KARGIN
Mustafa Ömür KASIMCAN
Özcan KAYA
Selim KAYACI
Ali Erhan KAYALAR
Mehmet Akif KAYGUSUZ
Neşe KESER
Fatih KESKİN
İsmail Emre KETENCI
Mesut KILIÇ
Mustafa KILIÇ
Kasım KILIÇARSLAN
Cumhur KILINÇER
Cihan KIRÇIL
Ahmet Esat KITER
İlker KİRAZ
Rahmi Kemal KOÇ
Deniz KONYA
Mehmet Fatih KORKMAZ
Murat KORKMAZ
Feza KORKUSUZ
Mustafa Can KOŞAY
Murat KÖKEN
Erkam KÖMÜRCÜ
Fehmi Doruk KURAN
Aslıhan KUŞVURAN ÖZKAN
Ahmet KÜÇÜK
Jun Ho LEE
Ahmet MENKÜ
Abdullah MİLCAN
Siyavuş MUHAMMEDREZAİ
Alexander Y. MUSHKIN
Vugar NABİ
Sait NADERİ
Necdet Serdar NECMİOĞLU
Gürdal NÜSRAN
Ali Ender OFLUOĞLU
Önder OFLUOĞLU
Erbil OĞUZ
Kadir OKTAY
Sakıp Eren OLCAY
Zeynep Deniz OLGUN
İsmail OLTULU
Zafer ORHAN
Özgür ÖCAL
Ahmet ÖĞRENCİ
Nusret ÖK
Özdamar Fuad ÖKEN
Bekir Tunç ÖKTENOĞLU
Önder ÇETİN
Mehmet Reşit ÖNEN
Ali ÖNER

F. Cumhuri ÖNER
Hakan ÖZALP
Zühtü ÖZBEK
Emel Ece ÖZCAN EKŞİ
Mert ÖZCAN
Raif ÖZDEN
Kubilay Murat ÖZDENER
Selçuk ÖZDOĞAN
Ali Fahir ÖZER
Selçuk ÖZGEN
Serdar ÖZGEN
Bırol ÖZKAL
Cenk ÖZKAN
Okan ÖZKUNT
Bülent ÖZKURT
Korhan ÖZLÜ
Ramadan ÖZMANEVRA
Ufuk ÖZSOY
Anıl Murat ÖZTÜRK
Çağatay ÖZTÜRK
İrfan ÖZTÜRK
Kadir ÖZTÜRK
Ömer Selçuk PALAOĞLU
Tuna PEHLİVANOĞLU
Gökhan PEKER
Ferran PELLISE
F.J. Sanchez PEREZ-GRUESO
Barış POLAT
Abolfazl RAHİMİZADEH
Ali Fatih RAMAZANOĞLU
Radhey S. MITTAL
Hakan SABUNCUOĞLU
Necdet SAĞLAM
Gürsel SAKA
Evren SANDAL
Abdelfattah SAOUD
Seçkin SARI
Kerim SARIYILMAZ
Mehdi SASANİ
İsmail Safa SATOĞLU
Murat SAYIN
Halil İbrahim SEÇER
Altay SENCER
Erhan SERİN
Erhan SESLİ
Cem SEVER
Fırat SEYFETTİNOĞLU
Salman SHARIF
Christoph J. SIEPE
Ahmet Şükrü SOLAK
İhsan SOLAROĞLU
Bilgehan SOLMAZ
İlker SOLMAZ

Murat SONGÜR
Yetkin SÖYÜNCÜ
Hasan Kamil SUCU
Halil İbrahim SÜNER
Altan ŞAHİN
Soner ŞAHİN
Fikret ŞAHİNTÜRK
Cüneyt ŞAR
Ahmet ŞARLAK
Mehmet Ali ŞEHİRLİOĞLU
Hakan ŞENARAN
Alparslan ŞENEL
Alpaslan ŞENKÖYLÜ
Salim ŞENTÜRK
Serkan ŞİMŞEK
Sait ŞİRİN
Ufuk TALU
Bahattin TANRIKULU
Mehmet TAŞKOPARAN
Necati TATARLI
Cüneyt TEMİZ
Mehmet TEZER
Zafer Orkun TOKTAŞ
Murat TONBUL
Hacı Bayram TOSUN
Ahmet Cemil TURAN
Ulvi Hakan TUYGUN
Kudret TÜREYEN
Okan TÜRK
Salih Cengiz TÜRKMEN
Bekir Yavuz UÇAR
Ali Akın UĞRAŞ
Mustafa Onur ULU
Çağatay ULUÇAY
Mehmet Hikmet Uluğ
Vedat URUÇ
Ali Kemal US
Mustafa UYSAL
Melih ÜÇER
İlker ÜNLÜ
Hasan Tahsin ÜTSÜKARCI
Onat ÜZÜMCÜGİL
Peter VARGA
Mithat Selim YALÇIN
Muhammed Nadir YALÇIN
Erol YALNIZ
Cumhur Kaan YALTIRIK
Onur YAMAN
Hakan Serhat YANIK
Tarık YAZAR
Muharrem YAZICI
Yasin YETİŞYİĞİT
Sinan YILAR



SCIENTIFIC BOARD

Ahmet Özgür YILDIRIM
İlyas Çağlar YILGÖR
Adem YILMAZ
Atilla YILMAZ
Baran YILMAZ
Güney YILMAZ

Hürriyet Gürsel YILMAZ
İlhan YILMAZ
Mesut YILMAZ
Tevfik YILMAZ
Ali Güven YÖRÜKOĞLU
Kemal YÜCESOY

Serdar YÜKSEL
Evren YÜVRÜK
Alberto ZERBI
Mehmet ZİLELİ
Ufuk ERGİNOĞLU

Please refer to the journal's webpage (www.jtss.org) for "Ethical Policy" and "Instructions to Authors".

The Journal of Turkish Spinal Surgery and/or its editors are members of ICMJE, COPE, WAME, CSE and EASE, and follow their recommendations. Journal of Turkish Spinal Surgery is indexed in , Embase, EBSCO Host Research Databases, Scopus, ProQuest, Gale/Cengage Learning, Tübitak/Ulakbim TR Dizin, J-Gate, Türkiye Citation Index, Türk Medline, CNKI.

The journal is published online.

Owner: Ahmet Esat Kiter on behalf of the Turkish Spine Society

Responsible Manager: Metin Özalay



Publisher Contact

Address: Molla Gürani Mah. Kaçamak Sk. No: 21/1 34093 İstanbul, Turkey

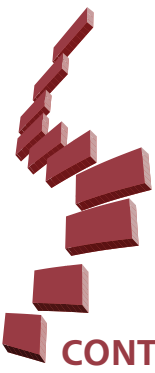
Phone: +90 (530) 177 30 97 / +90 539 307 32 03 E-mail: info@galenos.com.tr Web: www.galenos.com.tr

Publisher Certificate Number: 14521

Printing Date: January 2024

E-ISSN 2147-5903

International scientific journal published quarterly.



CONTENTS

ORIGINAL ARTICLES

- 1 **DURAL FIBROSIS IN SPINAL SURGERY: COMPARISON OF LIGAMENTUM FLAVUM SPARING AND ANTI-ADHESION GEL USE TECHNIQUE**
Mehdi Hekimoğlu, Hıdır Özer; İstanbul, Turkey
- 6 **MINIMALLY INVASIVE UNILATERAL HEMI LAMINECTOMY APPROACH FOR THE REMOVAL OF SPINAL SCHWANNOMAS IMPACT ON PAIN AND NEUROLOGICAL RESULTS**
Ahmet Eren Seçen, Emin Çağır, Denizhan Divanlıoğlu, Özgür Öcal, Ali Dalgıç; Ankara, Turkey
- 13 **THE EFFECT OF ANTI-INFLAMMATORY, ANTIOXIDATIVE, AND NEUROPROTECTIVE CHARACTERISTICS OF ALOPERINE ON EXPERIMENTAL ACUTE SPINAL CORD INJURY IN A RAT MODEL**
Evren Sönmez, Yalçın Kocaogullar, Gökhan Cüce, Densel Araç, Mehmet Zeki Yıldız, Cafer İktal Gülsever, Fatma Hümeysra Yerlikaya; İstanbul, Konya, Turkey
- 19 **DECOMPRESSION WITH INSTRUMENTATION IN THE TREATMENT OF UPPER-LEVEL DISC HERNIATIONS**
Zeki Boğa, Semih Kıvanç Olguner, Yurdal Gezeran; Adana, Turkey
- 24 **THE EFFECT OF INTERFERENTIAL CURRENTS AND TENS ON PAIN AND FUNCTIONALITY IN PATIENTS WITH CHRONIC MECHANICAL LOW BACK PAIN**
Tuğba Kuru Çolak, Nihat Sert, Buse Sert, Adnan Aptı; İstanbul, Turkey
- 31 **LOW-ENERGY VERTEBRAL COMPRESSION FRACTURES: DIFFERENTIAL DIAGNOSIS BETWEEN OSTEOPOROTIC AND MALIGNANT FRACTURES BY INFLAMMATORY BIOMARKERS**
Hüseyin Doğu, Ali Osman Muçuoğlu, Demet Aygün, Nail Demirel, Hidayet Akdemir; İstanbul, Turkey
- 38 **OSTEOPOROTIC VERTEBRAL FRACTURE; COMPARATIVE ANALYSIS OF UNILATERAL AND BILATERAL VERTEBROPLASTY RESULTS**
Mehmet Meral, Merdan Orunoğlu, Erhan Biçer, Eser Berkyürek, Rahmi Kemal Koç; Kayseri, Turkey

CASE REPORT

- 43 **COEXISTENCE OF SPINAL DYSRAPHISM AND EXTRARENAL WILMS TUMOUR: A CASE REPORT AND REVIEW OF THE LITERATURE**
Ayhan Tekiner, Tuncer Taşçıoğlu, Burak Yürük, Zeliha Çulcu Gürçan, Yağmur Çıman, Özge Özdemir; Ankara, Turkey

LETTER TO THE EDITOR

- 47 **EPIDURAL ANESTHESIA FOR POSTOPERATIVE ANALGESIA FOLLOWING ANTERIOR VERTEBRAL BODY TETHERING**
Mete Manici; İstanbul, Turkey