2019 Index by Content

January 2019, Volume 22, Number 1S

GUIDELINES

 Responsible, Safe, and Effective Use of Biologics in the Management of Low Back Pain: S1
American Society of Interventional Pain Physicians (ASIPP) Guidelines
Annu Navani, MD, Laxmaiah Manchikanti, MD, Sheri L. Albers, DO, Richard E. Latchaw, MD, Jaya Sanapati, MD,
Alan D. Kaye, MD, PhD, Sairam Atluri, MD, Sheldon Jordan, MD, Ashim Gupta, PhD, MBA, David Cedeno, PhD,
Alejandro Vallejo, BS, Bert Fellows, MA, Nebojsa Nick Knezevic, MD, PhD, Miguel Pappolla, MD, Sudhir Diwan, MD,
Andrea M. Trescot, MD, Amol Soin, MD, Adam M. Kaye, PharmD, FASCP, FCPhA, Steve M. Aydin, DO, Aaron K. Calodney, MD,
Kenneth D. Candido, MD, Sanjay Bakshi, MD, Ramsin M. Benyamin, MD, Ricardo Vallejo, MD, PhD, Art Watanabe, MD,
Douglas Beall, MD, Todd P. Stitik, MD, Patrick M. Foye, MD, Erik M. Helander, MBBS, and Joshua A. Hirsch, MD

 Responsible, Safe, and Effective Use of Antithrombotics and Anticoagulants in Patients S75
Undergoing Interventional Techniques: American Society of Interventional Pain Physicians (ASIPP) Guidelines
Alan D. Kaye, MD, PhD, Laxmaiah Manchikanti, MD, Matthew N. Novitch, Imran N. Mungrue, Muhammad Anwar, MBBS,
Mark R. Jones, MD, Erik M. Helander, MBBS, Elyse M. Cornett, PhD, Matthew R. Eng, MD, Jay S. Grider, DO, PhD,
Michael E. Harned, MD, Ramsin M. Benyamin, MD, John R. Swicegood, MD, Thomas T. Simopoulos, MD,
Salahadin Abdi, MD, PhD, Richard D. Urman, MD, Timothy R. Deer, MD, Cyrus Bakhit, MD, Mahendra Sanapati, MD,
Sairam Atluri, MD, Ramarao Pasupuleti, MD, Amol Soin, MD, Sudhir Diwan, MD, Ricardo Vallejo, MD, PhD,
Kenneth D. Candido, MD, Nebojsa Nick Knezevic, MD, PhD, Douglas Beall, MD, Sheri L. Albers, DO, Richard Latchaw, MD,
Hari Prabhakar, MD, and Joshua A. Hirsch, MD
January/February 2019, Volume 22, Number 1

SYSTEMATIC REVIEWS

♦ A Systematic Review of Devices and Techniques that Objectively Measure Patients’ Pain 1
Sjors H. Wagemakers, MD, Joanne M. van der Velden, MD, PhD, A. Sophie Gerlich, MD, Alinde W. Hindriks-Keegstra, MD, Jacqueline F.M. van Dijk, PhD, and Joost J.C. Verhoeff, MD, PhD

♦ Unilateral Versus Bilateral Balloon Kyphoplasty for Osteoporotic Vertebral Compression Fractures: A Systematic Review of Overlapping Meta-analyses 15
Cui Zhiyong, MD, Tian Yun, MD, Feng Hui, MD, Yang Zhongwei, MD, and Liu Zhaorui, MD

♦ Sacroiliac Joint Fusion Methodology - Minimally Invasive Compared to Screw-Type Surgeries: A Systematic Review and Meta-Analysis 29
Zung Vu Tran, PhD, Anna Ivashchenko, MPH, and Logan Brooks, BA

♦ Posterior Cervical Foraminotomy Via Full-Endoscopic Versus Microendoscopic Approach for Radiculopathy: A Systematic Review and Meta-analysis 41
Peng-Fei Wu, BD, Ya-Wei Li, MD, Bing Wang, MD, Bin Jiang, BD, Zhi-Ming Tu, BD, and Guo-Hua Lv, MD

ORIGINAL STUDIES

♦ Effectiveness of Exercise Therapy and Manipulation on Sacroiliac Joint Dysfunction: A Randomized Controlled Trial 53
Parisa Nejati, MD, Afsaneh Safarcherati, MD, and Farshid Karimi, MD

♦ Efficacy Analysis of Percutaneous Kyphoplasty Combined with Zoledronic Acid in Treatment of Primary Osteoporotic Vertebral Compression Fractures 63
Zi-Feng Huang, MD, Shao-Xiong Xiao, MD, Kun Liu, MM, and Wei Xiong, BM

♦ The Impact of Local Steroid Administration on the Incidence of Neuritis following Lumbar Facet Radiofrequency Neurotomy 69
Jaspal R. Singh, MD, Vincent F. Miccio, Jr., MD, Devas J. Modi, BS, and Michael T. Sein, MD

♦ Full-Endoscopic Lumbar Fusion Outcomes in Patients with Minimal Deformities: A Retrospective Study of Data Collected Between 2011 and 2015 75
Solomon Kamson, MD, PhD, Dawei Lu, MD, and Paul D. Sampson, PhD, Yiyi Zhang, BS

♦ Transforaminal Epiduroscopy in Patients with Failed Back Surgery Syndrome 89
Martin Avelanal, MD, PhD, Gonzalo Diaz-Regancon, MD, Alejandro Orts, MD, Lucio Gonzalez-Montero, MD, and Irene Riquelme, MD

♦ OPRM1 Gene Interaction with Sleep in Chronic Pain Patients Treated with Opioids 97
César Margarit, MD, PhD, Purificación Ballester, LMS, María-del-Mar Inda, PhD, Reyes Roca, LMS, Luis Gomez, LMS, Beatriz Pianelles, LMS, Raquel Ajo, LMS, Domingo Morales, PhD, and Ana M Peiró, MD, PhD

♦ Relationship Between Decreased Subcalcaneal Fat Pad Thickness and Plantar Heel Pain. A Case Control Study 109
Daniel López-López, PhD, Ricardo Becerro-de-Bengoa-Vallejo, MD, PhD, Marta Elena Losa-Iglesias, PhD, Alfredo Soriano-Medrano, PhD, Patricia Palomo-López, PhD, Ángel Morales-Ponce, PhD, David Rodriguez-Sanz, PhD, and César Calvo-Lobo, PhD

♦ How Does Self-Efficacy Influence Pain Perception, Postural Stability and Range of Motion in Individuals with Chronic Low Back Pain? 1
Roy La Touche, PhD, Mónica Grande-Alonso, MSc, Paloma Arnés-Prieto, PT, and Alba Paris-Alemany, MD

REVIEWS

♦ Nerve Entrapment Headaches at the Temple: Zygomaticotemporal and/or Auriculotemporal Nerve E1
Andrea M. Trescot, MD, and Helen W. Karl, MD

♦ High Level of Childhood Trauma Predicts a Poor Response to Spinal Cord Stimulation in Chronic Neuropathic Pain E37
Jaakko Määttä, BM, Antti Martikainen, MD, Maarit Pakarinen, MD, PhD, Tiina-Mari Ikäheimo, RN, Mette Nissen, MD, Mikael von und zu Fraunberg, MD, PhD, Heimo Viinamäki, MD PhD, and Jukka Huttunen, MD PhD
January/February 2019, Volume 22, Number 1

**LETTER TO THE EDITOR**

- Vitamin B12 as a Treatment for Pain
  Scott Buesing, ND, Miranda Costa, ND, Jan M. Schilling, Dr. Med, and Tobias Moeller-Bertram, MD, PhD

- Comparison of Lateral Branched Pulsed Radiofrequency Denervation and Intraarticular Depot Methyprednisolone Injection for Sacroiliac Joint Pain: Inquiry for Additional Investigation
  Peter Huynh, MD, and Dora Hsu, MD

**ERRATA**

117
March/April 2019, Volume 22, Number 2

SYSTEMATIC REVIEWS

Manipulation and Mobilization for Treating Chronic Nonspecific Neck Pain: A Systematic Review and Meta-Analysis for an Appropriateness Panel
Ian D. Coulter, PhD, Cindy Crawford, BA, Howard Vernon, DC, PhD, Eric L. Hurwitz, DC, PhD, Raheleh Khorsan, PhD, Marika Suttorp Booth, MS, and Patricia M. Herman, ND, PhD

Adverse Outcomes Associated with Prescription Opioids for Acute Low Back Pain: Systematic Review and Meta-Analysis
Nitika Sanger, HBSc, Meha Bhatt, MSc, Nikhita Singhal, BHSc, Katherine Ramsden, MD, Natasha Baptist-Mohseni, Bsc, Balpreet Panesar, BSc, Hannah Shahid, BASc, Alannah Hillmer, BSc, Alessia D’Elia, BSc, Candice Luo, BHSc, Victoria Rogers, BSc, Abirami Arunan, HBSc, Lola Baker-Beal, Bsc, Sean Haber, BSc, Jihane Henri, BSc, Megan Puckering, BSc, Sunny Sun, BSc, Kim Ng, BSc, Stephanie Sanger, MUS, Natalia Mouravaska, MD, M. Constantine Samaan, MD, Russell de Souza, ScD, Lehana Thabane, PhD, and Zainab Samaan, PhD

RANDOMIZED TRIALS

A Prospective Randomized Comparison of the Efficacy of Ultrasound- vs Fluoroscopy-Guided Genicular Nerve Block for Chronic Knee Osteoarthritis
Doo-Hwan Kim, MD, Myung-Su Lee, MD, Sookyung Lee, MD, Syn-Hae Yoon, MD, Jin-Woo Shin, MD, PhD, and Seong-Soo Choi, MD, PhD

Radiofrequency Thermoablation of the Gasserian Ganglion Versus the Peripheral Branches of the Trigeminal Nerve for Treatment of Trigeminal Neuralgia: A Randomized, Control Trial
Neerja Bharti, MD, John Sujith, MD, Navneet Singla, Mch, Nidhi B. Panda, MD, and Indu Bala, MD

Usage of Intravenous Lidocaine Infusion with Enhanced Recovery Pathway in Patients Scheduled for Open Radical Cystectomy: A Randomized Trial
Seham M. Moeen, MD, and Ahmed M. Moeen, MD

REVIEWS

Development and Validation of a Screening Tool for Surgery-Specific Neuropathic Pain: Neuropathic Pain Scale for Postsurgical Patients
Mathias Kvist Mejdahl, MD, Karl Ban Christensen, PhD, and Kenneth Geving Andersen, MD, PhD

Toxicity Effects of Methylene Blue on Rat Intervertebral Disc Annulus Fibrosus Cells
Liang Zhang, MD, PhD, Yang Liu, MD, Zenan Huang, MD, Liping Nan, MD, Feng Wang, MD, Shifeng Zhou, MD, Jingcheng Wang, MD, PhD, and Xinmin Feng, MD

A Prospective Comparison of CT-Epidurogram Between Th1-Transforaminal Epidural Injection and Th1/2-Parasagittal Interlaminar Epidural Injection for Cervical Upper Limb Pain
Keiji Hashizume, MD, PhD, Aki Fujiwara, MD, Keisuke Watanabe, MD, PhD, Masahito Kамиhara, MD, PhD, Shohei Iwasaki, MD, and Hiroaki Yamagami, MD, PhD

ORIGINAL STUDIES

Office-Based Kyphoplasty: A Viable Option Using Local Anesthesia with Oral Sedation
Phillip R. Worts, MS, and Gilbert S. Chandler III, MD

Using Percutaneous Endoscopic Outside-In Technique to Treat Selected Patients with Refractory Discogenic Low Back Pain
Keng-Chang Liu, MD, Shyi-Kuen Yang, PhD, Bor-Rung Ou, PhD, Min-Hong Hsieh, MD, Chih-En Tseng, MD, Chia-wei Chang, MD, and Shih-Hao Chen, MD

Age, Gender, Level and Side Differences in the Anatomical Distinctions of Unilateral Percutaneous Kyphoplasty through the Transverse Process-Pedicle Approach
Hongwei Wang, MD, Pan Hu, MD, Delue Wu, MD, Ning Zhang, MD, Jun Wu, MD, and Liangbi Xiang, PhD

Prognosis for Recovery of Foot Drop after Transforaminal Endoscopic Decompression of Far Lateral Lumbar S-Sacral 1 Herniated Disc: Case Series
Albert E. Telfeian, MD, Adetokunbo Oyelese, MD, PhD, Jared Fridley, MD, Cody Doberstein, BS, and Ziya L. Gokaslan, MD
March/April 2019, Volume 22, Number 2

Uncinate Process Area as a New Sensitive Morphological Parameter to Predict Cervical Neural Foraminal Stenosis  
Jong-Uk Mun, MD, Hyung Rae Cho, MD, Seon Hwan Kim, MD, Jee In Yoo, MD, Keum Nae Kang, MD, Syn-Hae Yoon, MD, and Young Uk Kim, MD, PhD  

Endoscopic Radiofrequency Treatment of the Sacroiliac Joint Complex for Low Back Pain: A Prospective Study with a 2-Year Follow-Up  
Albert E. Telfeian, MD, PhD, Richard Ibrahim, MD, Karl Gohlke, BS, and Oleg Decker, BS  

Radiation Dose Practice Audit of 6,275 Fluoroscopically-Guided Spinal Injections  
Stuart Cohen, MD, Robert Schneider, MD, John Carrico, MD, and Roseanne Zeldin, MA  

Incidence of Cervicogenic Headache Following Lower Cervical Radiofrequency Neurotomy  
Joseph LaGrew, MD, Pavel Balduyeu, MD, Terrie Vasilopoulos, PhD, and Sanjeev Kumar, MD  

Risk Factors for Early Recurrence After Transforaminal Endoscopic Lumbar Disc Decompression  
Chan Hong Park, MD, PhD, Eun Soo Park, MD, Sang Ho Lee, MD, PhD, Kyung Kyu Lee, MD, Yoon Kwang Kwon, MD, Min Soo Kang, MD, Shin Young Lee, MD, and Young Hwan Shin, MD, PhD  

LETTER TO THE EDITOR

Reforming Approaches to Curb Drug Overdose Deaths  
Laxmaiah Manchikanti, MD, Ramsin Benyamin, MD, and Joshua A. Hirsch, MD  

Safe And Secure Approaches at Lysis Procedures  
Mert Akbas, MD, FIPP  

Need for Reframing of Prevention Strategies to Combat Opioid Epidemic  
Laxmaiah Manchikanti, MD, Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD  

Comments on Space Randomized Clinical Trial by Krebs et al  
Laxmaiah Manchikanti, MD, Ramsin Benyamin, MD, and Joshua A. Hirsch, MD  

Efficacy of Preemptive Analgesics and the need to Standardize Anesthetic and Analgesic Management  
James Park, MD and Mark C. Kendall, MD  

ERRATA  
199
# Guidelines

♦ **ASIPP Guidelines for Sedation and Fasting Status of Patients Undergoing Interventional Pain Management Procedures**
  
  Alan D. Kaye, MD, PhD, Mark R. Jones, MD, Omar Viswanath, MD, Kenneth D. Candido, MD, Mark V. Boswell, MD, PhD, Arnol Soin, MD, Mahendra Sanapati, MD, Michael E. Harned, MD, Thomas T. Simopoulos, MD, Sudhir Diwan, MD, Sheri L. Albers, DO, Sukdeel Datta, MD, Frank J.E. Falco, MD, and Laxmaiah Manchikanti, MD

## Systematic Reviews

♦ **Interventional Treatments for Postherpetic Neuralgia: A Systematic Review**
  
  Chia-Shiang Lin, MD, Ying-Chun Lin, MD, Hsuan-Chih Lao, MD, and Chien-Chuan Chen, MD

♦ **A Systematic Review of Interventions and Programs Targeting Appropriate Prescribing of Opioids**
  
  Yola Moride, PhD, Danae Lemieux-Uresandi, MSc, Genaro Castillon, MD, Cristiano Soares de Moura, PhD, BPharm, Louise Pliote, MD, PhD, Mareva Faure, MSc, Sasha Bernartsry, MD, PhD

♦ **Low-Level Laser Therapy for Fibromyalgia: A Systematic Review and Meta-Analysis**
  
  Shu-Wei Yeh, MD, Chien-Hsing Hong, MD, Ming-Chieh Shih, MD, Ka-Wai Tam, MD, PhD, Yao-Hsien Huang, MD, and Yi-Chun Kuan, MD

## Randomized Trials

♦ **Comparison between the Effectiveness of Complex Decongestive Therapy and Stellate Ganglion Block in Patients with Breast Cancer-Related Lymphedema: A Randomized Controlled Study**
  
  Myung Woo Park, MD, Shi-Uk Lee, MD, PhD, Sohyun Kwon, MD, and Kwan Sik Seo, MD, PhD

♦ **Comparison of Intravascular Injection Rate Between Blunt and Sharp Needles During Cervical Transforaminal Epidural Block**
  
  Younghoon Jeon, MD, PhD, Jungwoon Lee, MD, Hyunho Shin, MD, Chorong Park, MD, Kihyun Kim, MD, and Saeyeong Kim, MD, PhD

♦ **Paravertebral Dexmedetomidine in Video-Assisted Thoracic Surgeries for Acute and Chronic Pain Prevention**
  
  Sayed Kaoud Abd-Elshafy, MD, Fatma Abdallal, MD, Emad Zarief Kamel, MD, Heba Edwar, MBCh, Essam Abd Allah, MD, Hatem Hassan Mohamed Maghraby, MD, Jehan Ahmed Sayed, MD, Mohamed Shaaban Ali, MD, PhD, Hussein Elkhayat, MD, and Ghada Shalaby Khalaf Mahran, MD

## Original Studies

♦ **New Strategy for Minimally Invasive Endoscopic Surgery to Treat Infectious Spondylodiscitis in the Thoracolumbar Spine**
  
  Chia-Yu Lin, MD, Chien-Chun Chang, MD, Yen-Jen Chen, MD, Chun-Hao Tsai, MD, PhD, Hsi-Kai Tsou, MD, PhD, Chih-Sheng Lin, PhD, Mao-Wang Ho, MD, Hsien-Te Chen, MD, PhD, and Horng-Chaung Hsu, MD, PhD

♦ **Transforaminal Endoscopic Lumbar Discectomy Versus Open Lumbar Microdiscectomy: A Comparative Cohort Study with a 5-Year Follow-Up**
  
  Yong Ahn, MD, PhD, Sang Gu Lee, MD, PhD, Seong Son, MD, and Han Joong Keum, MD

♦ **Factors Influencing Receipt of Interventional Pain Management Among Medicaid Beneficiaries with Cancer**
  
  Michael T. Halpern, MD, PhD, and Mallorie H. Fiero, PhD

♦ **Observational Study of the Distribution and Diversity of Interventional Pain Procedures Among Hospitals in the State of Iowa**
  
  Amy C. S. Pearson, MD, and Franklin Dexter, MD, PhD

♦ **The Effectiveness and Safety of 42°C Pulsed Radiofrequency Combined with 60°C Continuous Radiofrequency for Refractory Infraorbital Neuralgia: A Prospective Study**
  
  Yitong Jia, MD, Zheng Chen, MD, Hao Ren, MD, and Fang Luo, MD

♦ **Prevalence of Extreme Trait Sensory Profiles and Personality Types in Nonspecific Chronic Low Back Pain with Predominant Central Sensitization: Secondary Analysis of an International Observational Study**
  
  Jacqui R. Clark, PhD, Jo Nijs, PhD, Keith Smart, PhD, Paul Holmes, PhD, Gillian Yeowell, PhD, and Peter C. Goodwin, PhD

♦ **Gender Differences in the Association of Brain Gray Matter and Pain-Related Psychosocial Characteristics**
  
  Anneleen Malfliet, PhD, Robby De Pauw, MSc, Jeroen Kregel, PhD, Iris Coppieters, PhD, Mira Meeus, PhD, Nathalie Roussel, PhD, Lieven Danneels, PhD, Barbara Cagnie, PhD, and Jo Nijs, PhD
## Contents Index

### May/June 2019, Volume 22, Number 3

**Therapeutic Effects and Safety of Percutaneous Disc Decompression with Coblation Nucleoplasty in Cervical Vertigo: A Retrospective Outcome Study with 74 Consecutive Patients and Minimum 1-Year Follow-Up**

Shangfu Li, PhD, Ruqiag Chen, PhD, Yuyong Chen, PhD, Guoshu Mo, MD, Liangming Zhang, PhD, Peigen Xie, PhD, Qiyou Wang, PhD, Bin Liu, PhD, Jianwen Dong, PhD, and Limin Rong, PhD

**Evaluation of Neuropathic Pain in a Rat Model of Total Brachial Plexus Avulsion from Behavior to Brain Metabolism**

Jun Shen, MD, Bei-Bei Huo, MD, Mou-Xiong Zheng, MD, PhD, Xu-Yun Hua, MD, PhD, Hao Shen, MD, PhD, Ye-Chen Lu, MD, Dong-Lang Jiang, MD, Chun-Lei Shan, MD, PhD, and Jian-Guang Xu, MD, PhD

**Clinical Anatomy and Possible Clinical Significance of the Intervertebral Vein in the Lumbar Intervertebral Foramina**

Zhihai Su, MD, Min Wang, MD, Qinghao Zhao, PhD, Weicong Zhang, MD, Han Liu, MD, Zhifei Cui, MD, Bin Liu, MD, Lingyan Zhang, PhD, Zhaihui Ding, MD, Qingchu Li, PhD, Hai Lu, PhD

### LETTER TO THE EDITOR

**Patient Negativity as an Obstacle to the Treatment of Chronic Pain and a Role for Cognitive Bias Modification**

Omar Viswanath, MD, Nathaniel Beyer, MA, MAT, Ivan Urits, MD, and Alan David Kaye, MD, PhD

**Which is Effective and Safe Method for the Treatment of Trigeminal Neuralgia: Temperature or Active Tip?**

Mert Akbas, MD, and Bilge Karsli, MD

*In Response: Mert Akbas et al Which is Effective and Safe Method for the Treatment of Trigeminal Neuralgia: Temperature or Active Tip?*

Yuanyuan Ding, MD, PhD, and Guangyi Zhao, MD, PhD

**Song Using Medicare Prices, ACA Marketplace**

Laxmaiah Manchikanti, MD, and Joshua A. Hirsch, MD

**Re: Baek et al Postoperative Longitudinal Outcomes in Patients with Residual Disc Fragments after Percutaneous Endoscopic Lumbar Discectomy**

Jun-Song Yang, MD, Kai-Xuan Liu, MD, and Hong Fan, MD

*In Response to Letter Re: Postoperative Longitudinal Outcomes in Patients with Residual Disc Fragments after Percutaneous Endoscopic Lumbar Discectomy*

Chi Heon Kim, MD, PhD

**Re: Choi KC, Park CK. Percutaneous Endoscopic Lumbar Discectomy for L5-S1 Disc Herniation: Consideration of the Relation Between the Iliac Crest and L5-S1 Disc**

Jun-Song Yang, MD

*In Response to Re: Choi KC, Park CK. Percutaneous Endoscopic Lumbar Discectomy*  

Kyung-Chul Choi MD, PhD, and Choon-Keun Park MD, PhD

**Cost Effectiveness of Lumbar Epidural Steroid Injections Provides Inaccurate Information**

Laxmaiah Manchikanti, MD, Ramsin Benyamin, MD, Standiford Helm II, MD, and Joshua A. Hirsch, MD

**Utility of Perineural Steroids Post Radiofrequency Neurotomy**

Mark R. Williams, MD, and Joseph Poli, MD

### ERRATA

305
# July/August 2019, Volume 22, Number 4

## SYSTEMATIC REVIEWS

- **Effectiveness of Percutaneous Adhesiolysis in Post Lumbar Surgery Syndrome: A Systematic Analysis of Findings of Systematic Reviews**  
  Laxmaiah Manchikanti, MD, Amol Soin, MD, Mark V. Boswell, MD, PhD, Alan D. Kaye, MD, PhD, Mahendra Sanapati, MD, and Joshua A. Hirsch, MD (307)
- **Percutaneous Endoscopic Debridement and Drainage for Spinal Infection: Systemic Review and Meta-Analysis**  
  Yi Mao, MM, Yang Li, MD, and Xingang Cui, MD (323)
- **The Relevance of the OPRM1 118A>G Genetic Variant for Opioid Requirement in Pain Treatment: A Meta-Analysis**  
  Xueying Zhang, MA, Yongxin Liang, PhD, Nannan Zhang, MA, Ying Yan, MA, Shanling Liu, PhD, Hao Fengxi, MA, Dai Zhao, MA, and Haichen Chu, PhD (331)
- **Effectiveness of Denervation Therapy on Pain and Joint Function for Patients with Refractory Knee Osteoarthritis: A Systematic Review and Meta-Analysis**  
  Ran Wang, MD, Chao Ma, MD, Ying Han, MD, Mengjiao Tan, MD, and Lijuan Lu, MD (341)
- **A Systematic Review of the Normal Sacroiliac Joint Anatomy and Adjacent Tissues for Pain Physicians**  
  Amelie J. Poilliot, PhD cand, Johann Zwirner, MD, Terence Doyle, MD, and Niels Hammer, MD (347)
- **Efficacy and Safety of Surgical Interventions for Treating Multilevel Cervical Spondylotic Myelopathy via Anterior Approach: A Network Meta-Analysis**  
  Zhuhai Li, MD, Long Chen, PhD, Bo Li, MD, and Jianxun Wei, MD (375)

## RANDOMIZED TRIALS

- **Selection of the Optimal Puncture Needle for Induction of a Rat Intervertebral Disc Degeneration Model**  
  Jiale Qian, MD, Jun Ge, MD, Qi Yan, MD, Cenhao Wu, MD, Huilin Yang, MD, PhD, and Jun Zou, MD, PhD (353)
- **High-Voltage, Long-Duration Pulsed Radiofrequency on Gasserian Ganglion Improves Acute/Subacute Zoster-Related Trigeminal Neuralgia: A Randomized, Double-Blinded, Controlled Trial**  
  Chengfu Wan, MD, Diao-song Dong, MD, and Tao Song, MD (361)
- **Ultrasound-Guided Block of the Axillary Nerve: A Prospective, Randomized, Single-Blind Study Comparing Interfascial and Perivascular Injections**  
  Eung Don Kim, MD, PhD, Jung Won Baek, MD, Ji Seob Kim, MD, Su A Oh, MD, and Young Hoon Kim, MD, PhD (369)
- **The Value and Application of Personalized Needle Modification in Percutaneous Infrazygomatic Radiofrequency in Isolated Maxillary Nerve Pain through the Foramen Rotundum**  
  Yajing Chen, MD, Qiang Zhu, MD, Bing Huang, MD, Qianying Liu, MD, Qilui He, MD, Yibing Yao, BS, Kang An, MD, Chunyan Zhu, MD, Wei Chen, MD, and Ming Yao, PhD (377)
- **Does Coadministration of Transforaminal Epidural Steroid Injection with Sedation Improve Patient Satisfaction? A Prospective Randomized Clinical Study**  
  Savas Sencan, MD, Ipek Saadet Edipoglu, MD, Serhad Bilim, MD, and Osman Hakan Gunduz, MD (385)
- **Efficacy of Atlantoaxial Joint Glucocorticoid Injection in Patients with Rheumatoid Arthritis: A Randomized Trial**  
  Diab Fuad Hetta, MD, Abdelraheem Mahmoud Elawamy, MD, Manal Mohamed Hassanein, MD, Arwa Saaed Aljohi, MD, Raouf Abdel-Razek Hasan, MD, Nisreen Adel Abbas Mohammed, MD, and Gehan S. Seifeldein, MD (393)
- **Repetitive Transcranial Magnetic Stimulation at Different Frequencies for Postherpetic Neuralgia: A Double-Blind, Sham-Controlled, Randomized Trial**  
  Qian Pei, MD, Baishan Wu, MD, Yuanzhang Tang, MD, Xiaohui Yang, MD, Liping Song, MD, Nan Wang, MD, Yan Li, PhD, Chenli Sun, MD, Shumin Ma, MD, and Jiaxiang Ni, MD (401)
- **Ultrasound-Guided Pectoral Nerve Block I and Serratus-Intercostal Plane Block Alleviate Postoperative Pain in Patients Undergoing Modified Radical Mastectomy**  
  Wei Wang, MM, Wenqin Song, MM, Congying Yang, MD, Qian Sun, MD, Hui Chen, BA, Lei Zhang, MD, Xueshan Bu, MM, Liying Zhan, MD, and Zhongyuan Xia, MD (409)
The Effect of Speed of Normal Saline Injection on Optic Nerve Sheath Diameter in Thoracic Epidural Anesthesia
Ji Hee Hong, MD, PhD, Sung Won Jung, MD, PhD, and Ji Hoon Park, MD

ORIGINAL STUDIES

A Contemporary Medicolegal Analysis of Injury Related to Peripheral Nerve Blocks
Ramsey Saba, MD, Ethan Y. Brovman, MD, Daniel Kang, MD, Penny Greenberg, RN, Alan D. Kaye, MD, PhD, and Richard D. Urman, MD

The Social and Functional Implications of High- Versus Low-Dose Opioids on Chronic Non-Cancer Pain
Yohei Denawa, MD, Will Kurtz, MD, and Till Conermann, MD

Role of 3 Tesla MR Neurography and CT-Guided Injections for Pudendal Neuralgia: Analysis of Pain Response
Jimmy Ly, BS, Kelly Scott, MD, Yin Xi, PhD, Oganes Ashikyan, MD, and Avneesh Chhabra, MD

A Novel Method of Locating Foramen Ovale for Percutaneous Approaches to the Trigeminal Ganglion
Sung Hyun Lee, MD, Kang Sup Kim, MD, PhD, Seong Chul Lee, MD, So Yeon Lee, MD, PhD, Pyoung On Kim, MD, and Misuk Lee, MD

Comorbid Insomnia and Sleep Apnea are Associated with Greater Downstream Health Care Utilization and Chronic Opioid Use after Arthroscopic Hip Surgery
Daniel Rhon, DSc, Suzanne J. Snodgrass, PhD, Joshua A. Cleland, PhD, and Chad E. Cook, PhD

LETTERS TO THE EDITOR

Caution when Withholding Antithrombotic and Antiplatelet Agents for Interventional Spine Procedures and the Need for Further Risk Stratification
David C. Miller, MD, Byron J. Schneider, MD, and Zachary L. McCormick, MD

In Response: Risk-Based Guidance on Thrombotics is Essential!
Laxmaiah Manchikanti, MD, Alan D. Kaye, MD, PhD, Mark R. Jones, MD, and Mahendra Sanapati, MD

LETTERS

Role of Platelet Concentration in Bleeding Complications of Interventional Techniques
Mark R. Jones, MD, Alan D. Kaye, MD, PhD, and Laxmaiah Manchikanti, MD

Description of Tramadol Mortality in Osteoarthritis May Not Be Accurate
Laxmaiah Manchikanti, MD, Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

Discouraging Conclusions on Initial Opioid Prescription
Laxmaiah Manchikanti, MD, Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

2019 TOP 25 POSTERS

www.painphysicianjournal.com
Cost Utility Analysis

- Cervical Interlaminar Epidural Injections in the Treatment of Cervical Disc Herniation, Post Surgery Syndrome, or Discogenic Pain: Cost Utility Analysis from Randomized Trials
  Laxmaiah Manchikanti, MD, Vidyasagar Pampati, MSc, Allan Parr, III, MS4, Maanasa V. Manchikanti, Mahendra R. Sanapati, MD, Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

Reviews

- Updated Review and Treatment Recommendations on Paraneoplastic Neurologic Syndromes and Chronic Pain
  Inna Blyakhman, MSc, and Krishnan Chakravarthy, MD, PhD

- Neurostimulation for the Treatment of Chronic Head and Facial Pain: A Literature Review
  Ajay B. Antony, MD, Anthony J. Mazzola, MD, Gurpreet S. Dhaliwal, MD, and Corey W. Hunter, MD

- Transition from Acute to Chronic Pain: Evaluating Risk for Chronic Postsurgical Pain
  Gabriel Fregoso, MD, Annie Wang, MD, Kelly Tseng, MD, and Jingping Wang, MD, PhD

- Long-Term Retrospective Assessment of Clinical Efficacy of Radiofrequency Ablation of the Knee Using a Cooled Radiofrequency System
  Leonardo Kapural, MD, PhD, Nicholas Lee, Kevin Neal, MD, and Michael Burchell, MD

- β-blocker Use is Associated with a Reduction in Opioid Use 30 Days After Total Knee Arthroplasty
  Jordan Ben Starr, MD, Miroslav Backonja, MD, Irene Rozet, MD

- Modified K-Hole Percutaneous Endoscopic Surgery for Cervical Foraminal Stenosis: Partial Pediculectomy Approach
  Chang-Ming Xiao, MD, Ke-Xiao Yu, MD, Rui Deng, MD, Qing-Yan Long, MB, Lei Chu, MD, Yang Xiong, MD, Bei Sun, MD, Liang Chen, MD, PhD, Zheng-Jian Yan, MD, and Zhong-Liang Deng, MD, PhD

Randomized Trials

- The Associations Between Cognitive Dysfunction, Stress Biomarkers, and Administered Anesthesia Type in Total Knee Arthroplasties: Prospective, Randomized Trial
  Ipek S. Edipoglu, MD, and Fatma Celik, MD

- Analgesic and Respiratory Effects of Two Doses of Morphine as an Adjunct to Bupivacaine in Ultrasound-Guided Transversus Abdominis Plane Block in Upper Abdominal Surgery
  Hala S. Abdel-Ghaffar, MD, Fatma G.E. Askar, MD, Huda H. Mohamed, MBCH, Nagwa M. Ibrahim, MD, Amani H. Abdel-Wahab, MD, and Mostafa S. Abbas, MD

- A Prospective, Randomized Cross-Over Trial of T2 Paravertebral Block as a Sympathetic Block in Complex Regional Pain Syndrome
  Young Hoon Kim, MD, PhD, Seo Yeong Kim, MD, Yun Jae Lee, MD, and Eung Don Kim, MD, PhD

Original Studies

- Evaluation of Opioid Prescribing Habits Based on Analysis of a State Prescription Drug Monitoring Program
  John C. Alexander, MD, Julia Silge, PhD, Stephanie Jones, MD, and Girish P. Joshi, MD

- Variations of Technique in Transforaminal Epidural Steroid Injections and Periprocedural Practices by Interventional Pain Medicine Physicians in the United States
  Lisa V. Doan, MD, Francisco Narvaez, MD, Michael Fakhry, MD, Kristoffer Padjen, MD, and Christopher G. Gharibo, MD

- Spinal Radiofrequency Ablation Combined with Cement Augmentation for Painful Spinal Vertebroplasty: A Single-Center Prospective Study
  Dawood Sayed, MD, Daniel Jacobs, DO, Timothy Soyder, MD, Daniel Haines, MD, and Walter Orr, MPH

- A Staged Treatment of Symptomatic Lumbar Intraspinal Synovial Cysts
  Kyung-Hoon Kim, MD, PhD, Su-Young Kim, MD, Hwoe-Gyeong Ok, MD, and Tae-Kyun Kim, MD, PhD
Sciatric Scoliosis Evolution after Lumbar Discectomy: A Comparison Between Adolescents and Young Adults
Yinchang Zhang, MD, Wenbo Li, MS, Leilei Xu, MD, Enze Jiang, MD, Yong Qiu, MD, and Zezhang Zhu, MD

The Long-Term Outcome of 3-Dimensional CT-Guided Percutaneous Radiofrequency Thermocoagulation for Tumor-Related Trigeminal Neuralgia
Chen Zheng, MD, Jia Yitong, MD, Jia Zhipu, MD, Wang Tao, MD, and Luo Fang, MD

Chronic Pain Practices: An Evaluation of Positive and Negative Online Patient Reviews
Mariam Salisu Orhurhu, MD, Bisola Salisu, BS, Emily Sottosanti, BS, Niyi Abimbola, BS, Ivan Urits, MD, Mark Jones, MD, Omar Viswanath, MD, Alan D. Kaye, MD, PhD, Thomas Simopoulos, MD, and Vwaire Orhurhu, MD

Depression Trends in Patients with Chronic Pain: An Analysis of the Nationwide Inpatient Sample
Vwaire Orhurhu, MD, Mayowa Olusunmade, MD, Yinka Akinola, MD, Ivan Urits, MD, Mariam Salisu Orhurhu, MD, Omar Viswanath, MD, Sameer Hirji, MD, Alan D. Kaye, MD, PhD, Thomas Simopoulos, MD, and Jatinder Gill, MD

Causes of Residual Back Pain at Early Stage After Percutaneous Vertebroplasty: A Retrospective Analysis of 1,316 Cases
Jun-Song Yang, MD, Ji-Jun Liu, MD, Lei Chu, MD, Jing Li, MD, Chu Chen, MD, Hao Chen, MD, Peng Liu, MD, Liang Yan, MD, Tuan-Jiang Liu, MD, and Ding-Jun Hao, MD, PhD

Effect of Shock Wave on Vascular Lesions in Diabetic Rats
Juan Long, MS, Chunjing He, MD, Hua Ding, MS, Yue Zhou, BS, Xinguo Kang, BS, and Jinfeng Zou, BS

Fibromyalgia Impact Score in Women with Fibromyalgia Across Southern, Central, and Northern Areas of Europe
Pedro Jesús Ruiz-Montero, PhD, Victor Segura-Jimenez, PhD, Inmaculada C. Alvarez-Gallardo, PhD, Jo Nijs, PhD, Kaisa Mannerkorpi, PhD, Manuel Delgado-Fernández, PhD, and C. Paul van Wilgen, PhD

BOOK REVIEW
Essentials of Regenerative Medicine in Interventional Pain Management
Mark V. Boswell, MD, PhD

LETTERS TO THE EDITOR
Extended Pain Relief Utilizing Lumbar Erector Spinae Plane Block in a Patient with Discogenic Low Back Pain
Ruben H. Schwartz, DO, Ivan Urits, MD, Omar Viswanath, MD, Alan D. Kaye, MD, PhD, and Jonathan Eskander, MD

ERRATA
519
**November/December 2019, Volume 22, Number 6**

**HEALTH POLICY REVIEW**

- **Update on Reversal and Decline of Growth of Utilization of Interventional Techniques In Managing Chronic Pain in the Medicare Population from 2000 to 2018**
  - Laxmaiah Manchikanti, MD, Mahendra Sanapati, MD, Vidyasagar Pampati, MS, Mark V. Boswell, MD, PhD,
  - Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

**ANALYSIS/SURVEY**

- **Opioid Prescription in Switzerland: Appropriate Comedication use in Cancer and Noncancer Pain**
  - Maria M. Werti, MD, PhD, Ulrike Held, PhD, Andri Signorell, MSc, Johann Steurer, MD, Eva Blozik, MD,
  - and Jakob M. Burgstaller, MD, PhD

- **What are Future Pain Physicians Learning? A Survey of Opioid Prescribing Practices Among US Pain Fellowship Programs**
  - Ferdinand Iannaccone, DO, Peter Nielson, MD, Hazeed Adigun, MD, and Andrew Kaufman, MD

**REVIEWS**

- **Effectiveness of Percutaneous Adhesiolysis in Managing Chronic Central Lumbar Spinal Stenosis: A Systematic Review and Meta-Analysis**
  - Laxmaiah Manchikanti, MD, Nebojsa Nick Knezevic, MD, PhD, Mahendra R. Sanapati, MD, Mark V. Boswell, MD, PhD,
  - Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

- **Prescriber Education Interventions to Optimize Opioid Prescribing in Acute Care: A Systematic Review**
  - Ria E. Hopkins, BHSci, Thuy Bui, BPharm, Dianna Magliano, PhD, Carolyn Arnold, MBBS, and Michael Dooley, BPharm

- **Hyaluronidase in Neuroplasty: A Review**
  - Standiford Helm, II, MD, and Gabor B. Racz, MD

**RANDOMIZED TRIALS**

- **Transforminal Versus Lateral Parasagittal Versus Midline Interlaminar Lumbar Epidural Steroid Injection for Management of Unilateral Radicular Lumbar Pain: A Randomized Double-Blind Trial**
  - Jeetinder Kaur Makkas, MD, Kalla Krishna Prasad Gourav, MD, Kajal Jani, MD, Preet Mohinder Singh, MD,
  - Sandeep S. Dhatt, MS, Naresh Sachdeva, MD, and Sanjay Bhadada, MD

- **Pain Management Using Perioperative Administration of Parecoxib for Total Hip Arthroplasty: A Randomized, Double-Blind, Placebo-Controlled Trial**
  - Ke Xiao, MD, Lingjia Yu, MD, Weiying Xiao, MD, PhD, Huiming Peng, MD, Yanyan Bian, MD, Zhihong Wu, MD, PhD,
  - and Xisheng Weng, MD, PhD

- **Effect of Dry Needling Injection and Kinesiotaping on Pain and Quality of Life in Patients with Mechanical Neck Pain**
  - Cemile Sevgi Polat, MD, Sule Sahin Onat, MD, Seda Bicer, MD, Zehra Sahin, MD, and Ozlem Tasogluu, MD

- **C-Arm Guided Percutaneous Radiofrequency Thoracic Sympathectomy for Treatment of Primary Palmar Hyperhidrosis in Comparison with Local Botulinum Toxin Type A Injection, Randomized Trial**
  - Tarek A.H. Mostafa, MS, Abdel A. Hamed, MD, Basma M. Mohammed, MD, Nabil A. El Sheikh, MD, and Ahmed A.A. Shama, MD

**ORIGINAL STUDIES**

- **Effectiveness of “Transgrade” Epidural Technique for Dorsal Root Ganglion Stimulation. A Retrospective, Single-Center, Case Series for Chronic Focal Neuropathic Pain**
  - Adnan Al-Kaisy, MD, Jonathan Roysds, MD, Matteo Costanzi, MD, Gabor Racz, MD, Samuel Wesley, MA,
  - Stefano Palmisani, MD, David Pang, MB, and Thomas Yearwood, MD, PhD

- **Commentary: A New “Transgrade” Technique for Dorsal Root Ganglion Stimulation Shows Promise in Safety and Efficacy**
  - Timothy D. Kwiecien, MD, and Jianguo Cheng, MD, PhD

- **Hydraulic Distension with Pumping Technique for Treating Frozen Shoulder: A Case-Controlled, Retrospective, Comparative Study with 6-Month Follow-Up**
  - Yong Wook Kim, MD, PhD, Sanghoon Shin, MD, Won Hyuk Chang, MD, PhD, and Sang Chul Lee, MD, PhD

- **Endoscope-Assisted Minimally Invasive Interlaminar Lumbar Decompression for Spinal Stenosis**
  - Chan Hong Park, MD, PhD, and Sang Ho Lee, MD, PhD

- **Presence of Fibromyalgia Syndrome and Its Relationship with Clinical Parameters in Patients with Axial Spondyloarthritis**
  - Neriman Rençber, MD, Gonca Saglam, MD, Berrin Hünner, MD, and Ömer Kuru, Prof. MD
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Novel Inextensible Endoscopic Tube Versus Traditional Extensible</td>
<td></td>
</tr>
<tr>
<td>Retractor System in Single-Level Minimally Invasive Transforaminal</td>
<td></td>
</tr>
<tr>
<td>Lumbar Interbody Fusion: A Prospective Observation Study</td>
<td></td>
</tr>
<tr>
<td>Junlong Wu, MD, Chao Zhang, MD, PhD, Kang Lu, MD, Changqing Li, MD,</td>
<td></td>
</tr>
<tr>
<td>PhD, and Yue Zhou, MD, PhD</td>
<td></td>
</tr>
<tr>
<td>Percutaneous Endoscopic Lumbar Discectomy for Lumbar Disc Herniation</td>
<td></td>
</tr>
<tr>
<td>with Modic Changes via a Transforaminal Approach: A Retrospective</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td></td>
</tr>
<tr>
<td>Jietao Xu, MA, Yawei Li, MD, Bing Wang, MD, Guo-Hua Lv, MD, Pengfei</td>
<td></td>
</tr>
<tr>
<td>Wu, MD, Yuliang Dai, MD, Bin Jiang, MD, Zhchenzong Zheng, MA, and</td>
<td></td>
</tr>
<tr>
<td>Shipeng Xiao, MA</td>
<td></td>
</tr>
<tr>
<td>Radiofrequency Thermocoagulation Through Foramen Rotundum Versus</td>
<td></td>
</tr>
<tr>
<td>Foramen Oval for the Treatment of V2 Trigeminal Neuralgia</td>
<td></td>
</tr>
<tr>
<td>Tong-qing Xue, PhD, Qian-xi Zhang, MD, Hu Bian, BD, Peng-cheng Zhou,</td>
<td></td>
</tr>
<tr>
<td>BD, Cheng Liu, BD, Shang-fu Niu, MD, Zhe-bing Wang, MD, Wen-je Shi,</td>
<td></td>
</tr>
<tr>
<td>BD, and Cong-yang Yan, BD</td>
<td></td>
</tr>
<tr>
<td>Sacroiliac Joint Ligaments and Sacroiliac Pain: A Case–Control Study</td>
<td></td>
</tr>
<tr>
<td>on Morphologic Alterations</td>
<td></td>
</tr>
<tr>
<td>Niels Hammer, MD, Benjamin Ondruschka, MD, and Volker Fuchs, MD</td>
<td></td>
</tr>
<tr>
<td>Functional Pathway Between Cervical Spinal and Sympathetic Ganglia:</td>
<td></td>
</tr>
<tr>
<td>A Neurochemical Foundation Between Neck Pain and Vertigo</td>
<td></td>
</tr>
<tr>
<td>Xinwei Zhu, MD, Jianlong Han, MD, Rui Zhang, MS, Siqiang Qiu, MD,</td>
<td></td>
</tr>
<tr>
<td>Gang Chang, MD, and Jiniang Zuo, MD</td>
<td></td>
</tr>
<tr>
<td>A New Rat Model of Thalamic Pain Produced by Administration of Cobra</td>
<td></td>
</tr>
<tr>
<td>Venom to the Unilateral Ventral Posterolateral Nucleus</td>
<td></td>
</tr>
<tr>
<td>Jian-Xiong An, MD, PhD, Wan-Rui Shi, MD, Jian-Feng Zhang, MD, Xiao-</td>
<td></td>
</tr>
<tr>
<td>Yan Qian, BS, Qi-Wu Fang, MD, Yong Wang, MD, and John P. Williams,</td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td></td>
</tr>
<tr>
<td>Percutaneous Endoscopic Interlaminar Lumbar Discectomy with Local</td>
<td></td>
</tr>
<tr>
<td>Anesthesia for L5-S1 Disc Herniation: A Feasibility Study</td>
<td></td>
</tr>
<tr>
<td>Ying Guan, MD, Tianwen Huang, MM, Gang An, MD, Ran Wan, MM, Tianli</td>
<td></td>
</tr>
<tr>
<td>Wei, MD, Xu Shi, MM, Jingsong Liu, MM, Kaixuan Liu, MD, and</td>
<td></td>
</tr>
<tr>
<td>Yansong Wang, MD</td>
<td></td>
</tr>
<tr>
<td>Essentials of Interventional Techniques in Managing Chronic Pain</td>
<td></td>
</tr>
<tr>
<td>Mark V. Boswell, MD, PhD</td>
<td></td>
</tr>
<tr>
<td>Re: Liu KC, Yang SK, Ou BR, et al. Using Percutaneous Endoscopic</td>
<td></td>
</tr>
<tr>
<td>Outside-In Technique to Treat Selected Patients with Refractory</td>
<td></td>
</tr>
<tr>
<td>Discogenic Low Back Pain</td>
<td></td>
</tr>
<tr>
<td>Jun-Song Yang, MD, Kai-Xuan Liu, MD, Praveen Kadimcherla, MD, Hao</td>
<td></td>
</tr>
<tr>
<td>Chen, MD, Ji-Jun Liu, MD, Peng Liu, MD, Tuan-Jiang Liu, MD, and</td>
<td></td>
</tr>
<tr>
<td>Ding-Jun Hao, MD</td>
<td></td>
</tr>
<tr>
<td>RE: Office-Based Kyphoplasty: A Viable Option Using Local Anesthesia</td>
<td></td>
</tr>
<tr>
<td>and Oral Sedation</td>
<td></td>
</tr>
<tr>
<td>Samarjit Dey, MD, and Jitendra Kalbande, MD</td>
<td></td>
</tr>
<tr>
<td>Response to Office-Based Kyphoplasty: A Viable Option Using Local</td>
<td></td>
</tr>
<tr>
<td>Anesthesia and Oral Sedation</td>
<td></td>
</tr>
<tr>
<td>Gilbert Chandler, III, MD, and Phillip Worts, PhD, ATC</td>
<td></td>
</tr>
<tr>
<td>Re: Does Coadministration of Transforaminal Epidural Steroid</td>
<td></td>
</tr>
<tr>
<td>Injection with Sedation Improve Patient Satisfaction</td>
<td></td>
</tr>
<tr>
<td>Lu Chen, MS, Ruihao Zhou, MS, Ling Ye, MD, Hui Liu, MS, Pingliang</td>
<td></td>
</tr>
<tr>
<td>Yang, MD, Bangxiang Yang, MS, and Ling Ye, MD</td>
<td></td>
</tr>
<tr>
<td>In Response: Does Coadministration of Transforaminal Epidural</td>
<td></td>
</tr>
<tr>
<td>Steroid Injection with Sedation Improve Satisfaction</td>
<td></td>
</tr>
<tr>
<td>Savas Sencan, MD, Ipek Saadet Edipoglu, MD, Serhad Bilim, MD, and</td>
<td></td>
</tr>
<tr>
<td>Osman Hakan Gunduz, MD</td>
<td></td>
</tr>
<tr>
<td>In Response to the Letter to the Editor regarding “Pulsed radiofrequency in Pain Management”</td>
<td></td>
</tr>
<tr>
<td>Samarjit Dey, MD, and Kaustuv Dutta, MD</td>
<td></td>
</tr>
<tr>
<td>Ultrasound- versus Fluoroscopic-Guided Geniculer Nerve Radiofrequency: Which is the Future?</td>
<td></td>
</tr>
<tr>
<td>Gozde Dagistan, MD</td>
<td></td>
</tr>
</tbody>
</table>

2019 INDICES

- Index by Contents: 615
- Index by Author: 628
- Index by Key Words: 634