



# 43<sup>rd</sup> Annual Meeting & Course

Reaching New Heights in 2008!

## Thursday, September 11, 2008 (continued)

11:35 - 11:39 am  
Paper #28 **Surgical Outcomes of Decompression, Decompression with Limited Fusion and Decompression with Full Curve Fusion for Degenerative Scoliosis with Radiculopathy**  
*Raymond Topp, MD; Ensor E. Transfeldt, MD; Amir A. Mehbod, MD; Robert B. Winter, MD*

11:39 - 11:45 am Discussion

11:45 - 11:50 am Harrington Lecture Introduction

11:51 am - 12:11 pm Harrington Lecture

## Friday, September 12, 2008

7:55 - 8:00 am Announcements

### Session III

**Moderators:** Serena S. Hu, MD  
Noriaki Kawakami, MD

### Spondylolisthesis

8:00 - 8:04 am  
Paper #29 **Effects of Early Correction in High-Grade Developmental Spondylolisthesis L5/S1 on Sagittal Profile and Clinical Outcome**  
*Michael Ruf, MD; Rubens Jensen, MD; Prof. Harry R. Merk; Torsten Eichhorn, MD; Prof. Jürgen Harms, MD*

8:04 - 8:08 am  
Paper #30 **Sagittal Spino-Pelvic Alignment in Developmental Spondylolisthesis and its Potential Relevance for Reduction**  
*Jean-Marc Mac-Thiong, MD, PhD; Zhi Wang, MD; Jacques A. de Guise, PhD; Hubert Labelle, MD*

8:08 - 8:12 am  
Paper #31 **Radiological Assessment of L4-L5 Segment and Sacral Position after Surgical Reduction of L5-S1 Severe Spondylolisthesis and Spondyloptosis Throughout a Single Posterior Approach**  
*Jesus Burgos, MD; Prof. Carlos Barrios; Ignasi Sampera, MD; Eduardo Hevia, MD; Pedro Domenech, MD; Pedro R. Gutierrez, MD, PhD; Gabriel Piza, MD; Oscar G. Riquelme-García, MD, PhD; Ignacio Alvarez, MD; José I. Maruenda, MD; Enrique Recarte, MD*

8:12 - 8:16 am  
Paper #32 **The Relationship between Pelvic Balance and a Dome-Shaped Sacrum in L5-S1 Developmental Spondylolisthesis**  
*Pierre Roussouly, MD; Hubert Labelle, MD; Eric Berthonnaud, PhD; Serena S. Hu, MD; Courtney W. Brown, MD*

8:16 - 8:28 am Discussion

### Cervical Reconstruction

8:29 - 8:33 am  
Paper #33 **Stand-Alone Anterior Reconstruction in Cervical Kyphosis: A Prospective Analysis**  
*Mihir R. Bapat, MS; Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Kshitij S. Chaudhary, MS, DNB; Umesh S. Metkar, MS; Satyajit V. Marawar, MD; Prof. Vinod J. Laheri*

8:33 - 8:37 am  
Paper #34 **Circumferential Correction of Cervical Kyphosis Results in Improved Outcomes**  
*Sanjay S. Dhall, MD; Regis W. Haid, MD; Praveen V. Mummaneni, MD*

8:37 - 8:43 am Discussion

### Tumors

8:44 - 8:48 am  
Paper #35 **Involvement of the Spine in Patients with Multiple Hereditary Exostosis (MHE)**  
*James W. Roach, MD; Joshua B. Klatt, MD; Nathan D. Faulkner, MS*

8:48 - 8:52 am  
Paper #36 **Posterior Stabilization Following Oncologic Resection of the Cervicothoracic Junction: A Review of 90 Consecutive Cases**  
*Peter S. Rose, MD; Ilya Laufer, MD; Jasmine Beria, MPH; Andrew R. Hanover, BA; Mark Bilsky, MD; Patrick Boland, MD*

8:52 - 8:56 am  
Paper #37 **Long Term Clinical Outcomes Following Attempted en bloc Resections for Malignant Primary Sacral Tumors**  
*Patrick C. Hsieh, MD; Daniel M. Sciubba, MD; Risheng Xu, BS; Matthew Mcgirt, MD; Clarke Nelson, BS; Jean-Paul Wolinsky, MD; Ziya L. Gokaslan, MD*

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## Friday, September 12, 2008 (continued)

8:56 - 9:00 am **Risk Factors for Vertebral Fracture Following Single Fraction Intensity Modulated Radiation Therapy for Spinal Metastases**  
*Peter S. Rose, MD; Ilya Laufer, MD; Andrew R. Hanover, BA; Eric Lis, MD; Yoshiya Yamada, MD; Mark Bilsky, MD; Patrick Boland, MD*

9:00 - 9:12 am Discussion

### Neuromuscular Scoliosis

9:13 - 9:17 am **5-Year Radiographic Results of Long Scoliosis Fusion in Juvenile Spinal Muscular Atrophy Patients: Crankshaft and Ultimate Correction**  
*Lukas P. Zebala, MD; Keith H. Bridwell, MD; Christine Baldus, RN, MHS; B. Stephens Richards, III, MD; John P. Dormans, MD; Lawrence G. Lenke, MD; Joshua D. Auerbach, MD*

9:17 - 9:21 am **Spinal Fusion for Spastic Neuromuscular Scoliosis (NMS): Is Anterior Releasing Necessary When Intraoperative Halo-Femoral Traction is Used**  
*Kathryn A. Keeler, MD; Scott J. Luhmann, MD; Lawrence G. Lenke, MD; Christopher R. Good, MD; Brenda A. Sides, MA; Mario Shootman, PhD; Keith H. Bridwell, MD*

9:21 - 9:25 am **30 Years of Experience with Infections in Pediatric Neuromuscular Spinal Deformity Surgery**  
*Patrick J. Cahill, MD; Drew E. Warnick, MD; Michael J. Lee, MD; Lawrence C. Vogel, MD; Kim W. Hammerberg, MD; Peter F. Sturm, MD*

9:25 - 9:34 am Discussion

9:35 - 9:39 am **Progression of Scoliosis in Non-Ambulatory Duchenne Muscular Dystrophy Patients**  
*Frederic Shapiro, MD; David Zurakowski, PhD; Basil T. Darras, MD*

9:39 - 9:43 am **Spinal Deformity Correction in Duchenne Muscular Dystrophy: Sublaminar Wiring Fixation Versus Pedicle Screw Instrumentation**  
*Ujjwal K. Debnath, FRCS, FRCS; Hossein Mehdian, FRCS, MD; Harshad Dabke, FRCS; A.S. Hoakazemi; Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Brian J. Freeman, MD; John K. Webb, MBBS, FRCS*

9:43 - 9:49 am Discussion

### Lumbar Deformity

9:50 - 9:54 am **Spondylolysis Repair with Rigid Fixation: A Prospective Clinical and Radiographic Outcome Study**  
*Matthew Hepler, MD; Matthew Walker; Eugene P. Lautenschlager, PhD*

9:54 - 9:58 am **Dynamic Stabilization and Laminectomy in Degenerative Lumbar Scoliosis of Elderly Patients**  
*Mario Di Silvestre, MD; Georgios Bakaloudis, MD; Francesco Lolli, MD; Patrizio Parisini, MD*

9:58 - 10:02 am **TLIF vs ALIF as an Adjunct to Posterior Instrumented Correction of Degenerative Lumbar Scoliosis: 3 Year Clinical and Radiographic Outcomes**  
*Dennis Crandall, MD; Jan Revella, RN*

10:02 - 10:11 am Discussion

10:11 - 10:31 am Break

### SESSION IV

**Moderators:** Bernard A. Rawlins, MD  
B. Stephens Richards, III, MD

### Innovative Methods

10:32 - 10:36 am **Use of Vertebroplasty to Prevent Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery: A Biomechanical Cadaveric Study**  
*Ivan E. LaMotta, MD; Gabor Voros, MD; Joseph R. O'Brien, MD; Stephen Belkoff, MD; Khaled Kebaish, MD*



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### Friday, September 12, 2008 (continued)

10:36 - 10:40 am  
Paper #48  
**Preoperative Inferior Vena Cava Filters for Major Spinal Reconstruction in Adults**  
*Timothy Kuklo, MD, JD; Michael Rosner, MD; Stephen L. Ondra, MD; Brian A. O'Shaughnessy, MD; Jamal McClendon, MD*

10:40 - 10:44 am  
Paper #49  
**CT and Biomechanical Evaluation of Screw Fixation Options at the Cervicothoracic Junction: Intralaminar vs. Intrapedicular Techniques**  
*Mario J. Cardoso, MD, DC; Ronald A. Lehman, MD; Michael Rosner, MD; Richard P. Moser, MD; Mr. Norman Gill; Melvin D. Helgeson, MD; Lawrence G. Lenke, MD*

10:44 - 10:53 am Discussion

#### Other

10:54 - 10:58 am  
Paper #50  
**Treatment of Spinal Deformities in Patients with Diastrophic Dysplasia (DD) - A Long-Term, Retrospective, Nationwide Study**  
*Tuomas Jalanko, MS; Ville Remes, MD, PhD; Jari Peltonen, MD; Asst. Prof. Mikko S. Poussa; Ilkka Helenius, MD*

10:58 - 11:02 am  
Paper #51  
**Scoliosis and the Effects of Growth Hormone Treatment in Children with Prader-Willi Syndrome**  
*Roderick F. de Lind van Wijngaarden, MSc; Luuk W. de Klerk, MD, PhD; Dederieke A. Festen, MD, PhD; Barto J. Otten, MD, PhD; Anita C. Hokken-Koelega, MD, PhD*

11:02 - 11:06 am  
Paper #52  
**Lumbar Plexus Nerve Root Position within the Psoas Muscle: An Anatomic Study**  
*Carl Paulino, MD; Nael Shanti, MD; Martin Quirno, MD; Jeffrey M. Spivak, MD*

11:06 - 11:15 am Discussion

#### Adult Spinal Deformity

11:16 - 11:20 am  
Paper #53  
**Does Treatment (Nonoperative and Operative) Help Patients with Adult Symptomatic Lumbar Scoliosis: A Prospective Multicenter Evidence-Based Medicine Study**  
*Lukas P. Zebala, MD; Keith H. Bridwell, MD; Steven D. Glassman, MD; William C. Horton, III, MD; Christopher I. Shaffrey, MD; Frank Schwab, MD; Joan F. Hilton, ScD; Michael Shainline, MS; Christine Baldus, RN, MHS; David Wootten, PhD*

11:20 - 11:24 am  
Paper #54  
**Functional Outcomes and Complications Following Primary Spinal Surgery for Scoliosis in Adults Age 40 Years and Older: A Prospective Study with a Minimum 2-Year Follow-Up**  
*Ryan M. Zimmerman, BS; Khaled Kebaish, MD; Ahmed S. Mohamed, MBBCh, MsC Ortho; Richard Skolasky, ScD; Malaya Robinson, RN, BSN, RNFA*

11:24 - 11:28 am  
Paper #55  
**Pedicle Subtraction versus Smith-Petersen Osteotomies for Correction of Fixed Sagittal Plane Deformities: Clinical and Radiographic Outcomes in 151 Patients**  
*Brian Hsu, MB, BS, FRACS; Amir A. Mehdod, MD; Prof. Serkan Erkan; Ensor E. Transfeldt, MD; Joseph H. Perra, MD; Francis Denis, MD; Timothy Garvey, MD; Manuel R. Pinto, MD; James D. Schwender, MD; Daryll C. Dykes, MD, PhD; John E. Lonstein, MD; Robert B. Winter, MD*

11:28 - 11:37 am Discussion

11:38 - 11:41 am 2009 IMAST Preview

11:42 - 11:45 am 2009 Annual Meeting Preview

11:46 - 11:49 am Worldwide Regional Meeting Preview

11:50 - 11:55 am Introduction of President

11:56 am - 12:16 pm Presidential Address

12:16 - 1:20 pm Lunch

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## Friday, September 12, 2008 (continued)

### SESSION V

**Moderators:** Ian A. Stokes, PhD  
Jack M. Flynn, MD

### Trauma/Adult Deformity

- 1:20 - 1:24 pm **Early Complications of Methylprednisolone Sodium Succinate (MPSS) in the Treatment of Acute Cervical Spinal Cord Injury**  
Paper #56  
*Yasuo Ito, MD, PhD; Y. Sugimoto, MD*
- 1:24 - 1:28 pm **Inflammatory Cytokine Expression and the Development of Injury-Severity Biomarkers after Human Spinal Cord Injury**  
Paper #57  
*Anthea M. Stammers, MSc; Lise Belanger, RN, BSN, MSN; Donna Chan, RN; Arlene Bernardo, RN; Hamed Umedaly, MD; Wolfram Tetzlaff, MD, PhD; Mitch Giffin, MD; Scott C. Paquette, MD; Michael C. Boyd, MD, MSc; John Street, MD; Charles Fisher, BSc, MHSc, MD, FRCSC; Marcel F. Dvorak, MD; Brian K. Kwon, MD, PhD*
- 1:28 - 1:32 pm **Magnesium in a Polyethylene Glycol Formulation Provides Neuroprotection after Acute Spinal Cord Injury**  
Paper #58  
*Brian K. Kwon, MD, PhD; Josee Roy, PhD; Jae H. Lee, BSc; Jie Liu, MD; Anthea M. Stammers, MSc; Jeffrey Marx, PhD*
- 1:32 - 1:41 pm Discussion
- 1:42 - 1:46 pm **Increasing Lumbar Lordosis of Adult Spinal Deformity Patients via Intraoperative Prone Positioning**  
Paper #59  
*Katsumi Harimaya, MD; Takuya Mishiro, PhD, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Ms. Linda Koester; Brenda A. Sides, MA*
- 1:46 - 1:50 pm **A New Way of Assessing Sagittal Balance: A Radiologic Study of 232 Asymptomatic Individuals**  
Paper #60  
*Sebastien Charosky, MD; Ian J. Harding, BA, FRCS (Orth); Raphael Vielle, MD, PhD; Eric Berthonnaud, PhD; Pierre Roussouly, MD; Daniel Chopin, MD*

- 1:50 - 1:54 pm **Long Term Clinico-Radiological Outcomes after Surgical Treatment of Scheuermann's Kyphosis (SK): A UK Experience of 35 Cases with an Average Follow-Up of 9 Years**  
Paper #61  
*Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Hossein Mehdian FRCS, MD; Harshad Dabke, FRCS; Ujjwal K. Debnath, FRCS; John K. Webb, MBBS, FRCS*
- 1:54 - 2:03 pm Discussion
- 2:04 - 2:08 pm **Increasing Pain and Disability, Rather Than Deformity, Determine Treatment Modality for Older Patients with Adult Scoliosis**  
Paper #62  
*Oheneba Boachie-Adjei, MD; R. Shay Bess, MD; Matthew E. Cunningham, MSc; Douglas C. Burton, MD; Christopher I. Shaffrey, MD; Alexis P. Shelokov, MD; Richard A. Hostin, MD; Frank Schwab, MD; Kirkham Wood, MD; Munish C. Gupta, MD; Behrooz A. Akbarnia, MD, International Spine Study Group*
- 2:08 - 2:12 pm **Clinical Instinct versus Standardized Questionnaire: The Spinal Surgeons Ability to Detect Psychological Distress**  
Paper #63  
*Michael D. Daubs, MD; Alpesh Patel, MD; Darrel S. Brodke, MD*
- 2:12 - 2:18 pm Discussion
- 2:19 - 2:23 pm **RT-PCR and Microarray Experimental Study for the Impact of Methylprednisolone and Sodium Channel Blocker on Axonal Growth after Acute Spinal Cord Injury in Rats**  
Paper #64  
*Jun-Young Yang, MD, PhD; Prof. June Kyu Lee; Ho sup Song, MD; Eui Pyo Hong, MD*
- 2:23 - 2:27 pm **Transplantation of Human Marrow Stromal Cells and Mono-Nuclear Bone Marrow Cells into the Injured Spinal Cord: A Comparative Study**  
Paper #65  
*Amer F. Samdani, MD; Courtney Paul, BS; Birgit Neuhuber, PhD; Randal R. Betz, MD; Itzhak Fischer, PhD*
- 2:27 - 2:33 pm Discussion



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## Friday, September 12, 2008 (continued)

### Basic Science

- 2:34 - 2:38 pm **VEPTR Improves Pulmonary Hypoplasia in a Postnatal Rabbit Model of Thoracic Insufficiency Syndrome**  
Paper #66  
*Hemal P. Mehta, MSc; Brian D. Snyder, MD, PhD; Stephen R. Baldassarri, BA; Melissa J. Hayward, MD; Michael J. Giuffrida, MD; Supriya P. Bansal, BS; Vahid Entezari, MD; Nipun D. Patel, MS; Andrew C. Jackson, PhD*
- 2:38 - 2:42 pm **Transient Short Term Local Bone Remodeling Effects of High-Doses of rhBMP-2 in a Novel Preclinical Interbody Spine Fusion Model**  
Paper #67  
*Hyun Bae, MD; Ben B. Pradhan, MD, MSE; Vikas V. Patel, MA, MD; Jeffrey M. Toth, PhD; Jeffrey M. Badura, MS; Howard B. Seim, DVM; A. Simon Turner, BVSc, MS, Dipl. ACVS*
- 2:42 - 2:46 pm **Porcine Scoliosis Model Based on Animal Growth Created with Minimal Invasive Off-Set Tethering**  
Paper #68  
*Thierry Odent, MD; Thibault Cachon, MV; Bertrand Peultier; José Gournay; Erwan Jolivet; Prof. Eric Viguiet*
- 2:46 - 2:55 pm Discussion
- 2:56 - 3:00 pm **The Effect of Calmodulin Antagonists on the Incidence and Magnitude of Scoliosis in Pinealectomized Chicken and Bipedal C57BL/6 Mice**  
Paper #69  
*Ibrahim Akel, MD; Gokhan H. Demirkiran, MD; Ahmet Alanay, MD; Ralph Marcucio, MD; Emre R. Acaroglu, MD*
- 3:00 - 3:04 pm **Effect of Teriparatide [rhPTH(1,34)] and Calcitonin on Intertransverse Process Fusion in a Rabbit Model**  
Paper #70  
*Ronald A. Lehman Jr., MD; Anton E. Dmitriev, MSc; Mario J. Cardoso, MD, DC; Christen Christensen; Melvin D. Helgeson, MD; Timothy Kuklo, MD, JD; K. Daniel Riew, MD*

- 3:04 - 3:08 pm **Sacral-Pelvic Fixation: A Biomechanical Comparison Between Constructs Ending with S2 Bicortical Bitriangulated (BCBT) Screws and Iliac Screws**  
Paper #71  
*William C. Horton, III, MD; JimHwan Kim, MD, PhD; Takahiko Hamasaki, MD; Brett A. Freedman, MD; William C. Hutton, DSc*

3:08 - 3:17 pm Discussion

3:17 - 3:37 pm Break

### Session VI

**Moderators:** Muharrem Yazici, MD  
Michael F. O'Brien, MD

### Adolescent Idiopathic Scoliosis

- 3:38 - 3:42 pm **Thoracic Pedicle Screw Instrumentation: The Learning Curve in Adolescent Idiopathic Scoliosis**  
Paper #72  
*Baron S. Lonner, MD; Joshua D. Auerbach, MD; Michael B. Estreicher, BA; Kristin E. Kean, BA*

- 3:42 - 3:46 pm **The Majority of Initial Coronal Imbalance Following Fusion Surgery for AIS Improves within Six Months**  
Paper #73  
*JahanGir Asghar, MD; Daniel M. Sciubba, MD; Amer F. Samdani, MD; Patrick J. Cahill, MD; David H. Clements, III, MD; M. Darryl Antonacci, MD, FACS; Randal R. Betz, MD; Harms Study Group*

- 3:46 - 3:50 pm **Significance of Intraoperative Thoracic Kyphosis Increase to Prevent the Proximal Junctional Kyphosis in Adolescent Idiopathic Scoliosis Following Posterior Segmental Spinal Instrumentation and Fusion: A Multicenter Analysis of 518 Cases**  
Paper #74  
*Yongjung J. Kim, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Oheneba Boachie-Adjei, MD; Naobumi Hosogane, MD; Youngbae B. Kim, MD*

3:50 - 3:59 pm Discussion

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- 4:00 - 4:04 pm **Elevated Plasma Factor P is Involved in AIS Onset and Curve Progression**  
Paper #75  
*Alain Moreau, PhD; Anita Franco, MSc; Bouziane Azeddine, MSc; Pierre H. Rompré, MSc; Isabelle Turgeon, BSc; Keith M. Bagnall, PhD; Benoît Poitras, MD; Hubert Labelle, MD; Charles-Hilaire Rivard, MD; Guy Grimard, MD; Jean Ouellet, MD; Stefan Parent, MD, PhD; Ginette Larouche; Ginette Lacroix*
- 4:04 - 4:08 pm **Pre-Operative CT Does Not Appear to Improve Accuracy of Pedicle Screw Placement and Exposes the Patient to Increased Quantities of Radiation**  
Paper #76  
*John K. Czerwejn, MD; Terry Amaral, MD; Adam L. Wollowick, MD; Alok D. Sharan; Beverly Thornhill, MD; Vishal Sarwahi, MD*
- 4:08 - 4:12 pm **New Parameters to Represent the Position of the Aorta Relative to the Spine for Pedicle Screw Placement**  
Paper #77  
*Katsushi Takeshita, MD; Toru Maruyama, MD; Hirotaka Chikuda, MD; Takashi Ono, MD; Naoki Shoda, MD; Kozo Nakamura, MD*
- 4:12 - 4:21 pm Discussion
- 4:22 - 4:26 pm **Intrathecal Morphine Administration for Preemptive Analgesia in Children Undergoing Posterior Spinal Instrumentation and Fusion for Idiopathic Scoliosis**  
Paper #78  
*Jochen P. Son-Hing, MD, FRCSC; Paul A. Tripi, MD; Jennifer M. Potzman, MD; Connie Poe-Kochert, RN, BSN, CNP; George H. Thompson, MD*
- 4:26 - 4:30 pm **Halo-Gravity Traction in Severe Pediatric Spinal Deformity**  
Paper #79  
*Kristina Walick, MD; Anna McClung, RN; Daniel J. Sucato, MD, MS; Charles E. Johnston, MD*
- 4:30 - 4:34 pm **Is Extended Preoperative Halo Traction Safe and Effective for Severe Pediatric Spinal Deformity? Critical Review of 62 Pediatric Patients**  
Paper #80  
*Timothy Kuklo, MD, JD; Kathryn A. Keeler, MD; Laura A. Meyer, MA; Scott J. Luhmann, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD*
- 4:34 - 4:43 pm Discussion
- 4:44 - 4:48 pm **A 13-14 Year Follow Up of Outcome for Fusions in Idiopathic Scoliosis**  
Paper #81  
*Colin Nnadi, FRCS(Orth); Prakash Jayakumar, MRCS; Satoshi Hori BSc, MB BS, MRCS; Adrian Casey; David Harrison, FRCS; Ben Taylor; Dimitri A. Raptis, MRCS*
- 4:48 - 4:52 pm **Fixation Points within the Main Thoracic Curve: Does More Instrumentation Produce Greater Curve Correction?**  
Paper #82  
*James O. Sanders, MD; Mohammad Diab, MD; B. Stephens Richards, III, MD; Lawrence G. Lenke, MD; Charles E. Johnston, MD; John B. Emans, MD; Daniel J. Sucato, MD, MS; Mark A. Erickson, MD; Keith H. Bridwell, MD; Richard E. McCarthy, MD; John F. Sarwark, MD; John P. Dormans, MD; Timothy Kuklo, MD, JD; Michael Shainline, MS; Spinal Deformity Study Group*
- 4:52 - 4:56 pm **'Don't End your Fusion at T12 in Idiopathic Scoliosis': Wisdom or Myth?**  
Paper #83  
*Jack M. Flynn, MD; Tracey P. Bastrom, MA; Peter O. Newton, MD; Lawrence G. Lenke, MD; Alvin H. Crawford, MD; Thomas G. Lowe, MD; Randal R. Betz, MD; David H. Clements, III, MD; Baron S. Lonner, MD; Michelle C. Marks, PT, MA; Harms Study Group*
- 4:56 - 5:05 pm Discussion