

*SMISS Annual Forum '21
The Cosmopolitan, Las Vegas, NV
October 28-30, 2021*

Thursday, October 28, 2021

2:00-7:00 pm On-site Registration

Gracia Ballroom Foyer

Session 1: Part 1 - MIS Lateral Deformity Correction (SOLAS-Sponsored Session)

Castellana 1

Moderators: R. Eastlack, MD & A. Kanter, MD

5:00	Welcome	R. Eastlack, MD
5:05	NuVasive Award	
5:10	Posterior is the best answer	K. Foley, MD
5:17	Lateral just makes sense	L. Pimenta, MD
5:24	Discussion	
5:31	Navigation, Robotics, and Lateral Safer and better for the patient	R. Lehman, Jr., MD
5:36	Time consuming and not necessary	F. Phillips, MD
5:41	Discussion	
5:48	Single Position Surgery Lateral works, why risk it?	A. Kanter, MD
5:53	PTP: Try it you'll like it	W. Taylor, MD
5:58	Discussion	
6:05	Lordosis and LLIF ACR is safe, effective, and provides reliable lordosis	R. Eastlack, MD
6:10	Alternative MIS procedures achieve lordosis	V. Deviren, MD
6:15	Discussion	

Session 1: Part 2 - Single Position Surgery

Castellana 1

Moderators: R. Eastlack, MD & A. Kanter, MD

6:25	Thoracic lateral SPS: What you need to know. What's next?	J. Uribe, MD
6:32	Deformity and SPS: What you need to know. What's next?	G. Mundis, Jr., MD
6:39	Neuromonitoring and SPS: Is SSEP the new standard?	T. Smith, MD
6:46	Discussion	
6:53	Non-CME Tech Update: Title Speaker Supported by: NuVasive	
6:59	Non-CME Tech Update: Title Speaker Supported by: Viseon	
7:05	Discussion	
7:10	Adjourn	

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6:45 am	On-site Registration	Gracia Ballroom Foyer
7:30-8:20	Non-CME Workshops with Breakfast <i>Participants are invited to attend the workshop of their choice.</i>	
	Workshop Title 1 Workshop Faculty Supported by: SI-Bone	Brera 2
	Workshop Title 2 Workshop Faculty Supported by: Globus	Brera 6
	Workshop Title 3 Workshop Faculty Supported by: Medtronic	Brera 5
	Session 2: Minimally Invasive Management of the Complex Spine Patient <i>Mods: JP Mobasser, MD & L. Tumialán, MD</i>	Gracia Ballroom
8:30	Welcome	JP Mobasser, MD
8:35	Introduction to the Problem Case presentation: L5-S1 spondylolisthesis - clinical history & radiographic studies	L. Tumialán, MD
8:39	Audience poll: Which approach is best?	
8:42	The unique biomechanics of spondylolisthesis at the lumbosacral junction	P. Derman, MD
8:52	Rapid Fire - Why I Do: - Posterior MIS TLIF	P. Park, MD
8:57	- ALIF or OLIF only	N. Anand, MD
9:02	- Anterior-posterior	S. Hu, MD
9:07	- MIS PLIF with cortical screws	H. Bae, MD
9:12	Discussion	
9:27	Audience poll: Which approach is best? Did opinions change?	
9:30	Complication management and avoidance - anterior and posterior. Intraoperative: the unthinkable	J. Harrop, MD
9:40	The science of cellular graft material. Does the data support the cost?	F. Phillips, MD
9:52	Discussion	
10:00	How To... Technique Videos for Complex Cases Techniques for minimally invasive Gill laminectomy	L. Khoo, MD
10:08	Virtual reality and spinal surgery...the future of resident training	J. Godzik, MD
10:16	Discussion	

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10:30 Refreshment Break & Exhibit Viewing Exhibit Hall

11:00 am-12:30 pm Concurrent Sessions 3A, 3B, & 3C

Concurrent Session 3A: Free Papers Gracia Ballroom

Mods: R. Härtl, MD & K. Foley, MD

- 11:00 Paper #1: Single-level MIS TLIF vs. ALIF at L5/S1: A comparison of patient-reported outcomes and recovery ratios
Kevin Jacob, Madhav Patel, Frank Chavez, Alexander Parsons, Max Ribot, Michael Prabhu, Hanna Pawlowski, Nisheka Vanjani, Kern Singh
- 11:04 Paper #2: Titanium and PEEK cages have similar outcomes in single-level MIS-TLIF: A matched cohort analysis with long-term follow-up
Daniel Coban, Stuart Changoor, Stephen Sacla, Kumar Sinha, Ki Hwang, Michael Faloon, Arash Emami
- 11:08 Paper #3: Differences in predictors of readmission and extended length of stay between open, minimally invasive, and robotic single-level lumbar fusion surgery
Calista Dominy, Justin Tang, Nicholas Pitaro, Christopher White, Jeremy Steinberger, Jun Kim, Samuel Cho
- 11:12 Paper #4: Minimally invasive spine surgery program implementation in university-affiliated acute care peripheral rural community hospital: Early clinical experience with initial consecutive cases after launch
Vivek Sharma, Anthony Oyekan
- 11:16 Discussion
- 11:24 Paper #5: Return to work, activities of daily living and disability improvement: 12-month outcomes of an FDA IDE trial of decompression and tension band stabilization for degenerative spondylolisthesis
Hyun Bae, Linda Kanim, Rick Sasso, Serena Hu, S. Tim Yoon, Alan T. Villavicencio, William Lavalle, Kee Kim, Calvin Kuo, Michael Stauff, Harvinder Sandhu, Mick Perez-Cruet, Sigurd Berven, William Welch
- 11:28 Paper #6: Lumbar facet arthroplasty for lumbar spondylolisthesis – 2-year outcomes
Steven DeLuca, William Welch, Eric Potts, John Chi
- 11:32 Paper #7: Can disc distraction using a percutaneous approach reduce spondylolisthesis?
Micah Smith
- 11:36 Paper #8: Effectiveness and cost-effectiveness of full-endoscopic transforaminal discectomy vs. open discectomy for sciatica
Pravesh Gadhradj, Biswadji Harhangi
- 11:40 Discussion

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- 11:48 Paper #9: The influence of preoperative narcotic consumption on patient-reported outcomes of lumbar decompression
Madhav Patel, Kevin Jacob, Conor Lynch, Elliot Cha, Michael Prabhu, Hanna Pawlowski, Nisheka Vanjani, Kern Singh
- 11:52 Paper #10: Long-term prospective outcomes of a novel spacer in single-level instrumented lumbar interbody fusions
Pierce Nunley, John Chi, Martin Krag, Mohamad Bydon, Stephane Lavoie, Yi Lu, Marcus Stone
- 11:56 Paper #11: Evaluation of the ability of a novel curved drill to create an arcuate tunnel without breaching the spinal canal
Robert Eastlack, Taylor Semingson, Hani Malone
- 12:00 Paper #12: Patients' preferences for the treatment of lumbar disc herniation: a discrete choice experiment
Pravesh Gadhradi, Nicholas Smeele, Esther Bekker-Grob, Biswadji Harhangi
- 12:04 Discussion
- 12:12 Paper #13: Examination of factors causing anterior detached bone fragments after extreme lateral interbody fusion
Atsushi Ikeura, Yoshihisa Kotani, Takashi Toyoda, Takanori Saito
- 12:16 Paper #14: Objective evaluation of dynamic balance among lumbar disc herniation patients before and after discectomy: Comparison of cone of economy balance measures to the clinical Y-balance test
Damon Mar, Abigail Reichow, Kyle Robinson, Alexander Satin, Blake Staub, Peter Derman
- 12:20 Paper #15: Analysis of peri-operative events reported from a 200-subject multicenter, prospective lateral interbody fusion study
Pierce Nunley, Brandon Strenge, John Malloy, Jason Huffman, Sandeep Kunwar, Marcus Stone
- 12:24 Discussion

Concurrent Session 3B: Free Papers

Castellana 1

Mods: J. Harrop, MD & L. Pimenta, MD

- 11:00 Paper #16: Does the global alignment and proportion (GAP) score predict mechanical complications in circumferential minimally invasive surgery for adult spinal deformity?
David Gendelberg, Andrew Chung, Anita Anand, Arya Rao, Shriya Sharma, Christopher Kong, Babak Khandehroo, Sheila Kahwaty, Neel Anand

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- 11:04 Paper #17: Does minimally invasive adult deformity surgery result in improved perioperative recovery and function?
Peter Passias, Kevin Moattari, Nicholas Kummer, Oscar Krol, Bailey Imbo, Rachel Joujon-Roche, Tyler Willison, Peter Tretiakov
- 11:08 Paper #18: Feasibility and outcomes of mini open correction and fusion for adolescent idiopathic scoliosis (AIS): 2-5 years follow-up
Matthew Geck, Devender Singh, Ashley Duncan, Eric Truumees, John Stokes
- 11:12 Paper #19: Comparison of adolescent idiopathic scoliosis (AIS) correction - open vs. minimally invasive cohorts: A 2-year radiographic and surgical outcome study
Matthew Geck, Devender Singh, Eric Truumees, John Stokes, Ashley Duncan
- 11:16 Discussion
- 11:24 Paper #20: The relative contribution of anterior techniques vs. posterior techniques in restoring spinal balance in circumferential minimally invasive surgical correction of adult spinal deformity without osteotomies
Andrew Chung, David Gendelberg, Christopher Kong, Anita Anand, Arya Rao, Shriya Sharma, Babak Khandehroo, Sheila Kahwaty, Neel Anand
- 11:28 Paper #21: Indirect decompression demonstrates similar clinical outcomes to direct decompression in single level circumferential fusion for isthmic spondylolisthesis
Kimberly Ashayeri, Brett Braly, J. Alex Thomas, Ivan Cheng, Mark Medley, Brian Kwon, Themistocles Protopsaltis, Aaron Buckland
- 11:32 Paper #22: Minimally invasive modification of Goel-Harms atlantoaxial fusion utilizing percutaneous screws and intraarticular cage is feasible and results in decreased blood loss
Aaron Gelline, Cole Sloboda, Andrew Abomussa, Deb Bhowmick
- 11:36 Paper #23: Single-position, single-incision approach for lateral interbody fusion with supplemental posterior fixation - technique and comparative outcomes to two-incision and two-position approaches
Larry Khoo, Payman Emmanuel, Miya Khoo, Sora Cho
- 11:40 Discussion
- 11:48 Paper #24: Clinical and radiographic outcomes for high-risk subjects undergoing single-level or multi-level lumbar fusion using a cellular bone allograft
Todd Lansford

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- 11:52 Paper #25: Comparison of the incidence of adjacent segment pathology (ASP) between anterior lumbar interbody fusion (ALIF) and transforaminal lumbar interbody fusion (TLIF) for lumbosacral junction
Po-Kuan Wu, Cheng-Min Shih, Kun-Hui Chen, Chien-Chou Pan, Yen-Kuang Lin, Tsung-Jen Huang, Meng-Huang Wu, Cheng-Hung Lee
- 11:56 Paper #26: The trends in robot-related complications, operative efficiency, radiation exposure, and clinical outcomes after robot-assisted spine surgery: A multicenter study of 722 patients and 5,005 screws from 2015 to 2019
Nathan Lee, Venkat Boddapati, Justin Mathew, Paul Park, Eric Leung, Avery Buchholz, John Pollina, Ehsan Jazini, Colin Haines, Thomas Schuler, Christopher Good, Joseph Lombardi, Ronald Lehman
- 12:00 Paper #27: Attrax putty vs. autograft in XLIF: A prospective randomized single-center evaluation of radiographic and clinical outcomes
Cristiano Menezes
- 12:04 Discussion
- 12:12 Paper #28: A longitudinal assessment of segmental motion of the cervical spine following total disc arthroplasty: A comparative analysis of devices
Matthew Colman, Athan Zavras, Vincent Federico, Michael Nolte, Kern Singh, Frank Phillips
- 12:16 Paper #29: Range of motion on flexion and extension at long-term follow-up after cervical total disc arthroplasty: A systematic review and meta-analysis
Athan Zavras, Navya Dandu, Michael Nolte, Arash Sayari, T Barrett Sullivan, Matthew Colman
- 12:20 Paper #30: Incidence of voice vs. swallowing complications following stand-alone ACDF
Akhil Chandra, Avani Vaishnav, Jung Kee Mok, Hikari Urakawa, Marcel Dupont, Derek Colaizzo, Pratyush Shahi, Evan Sheha, Todd Albert, Catherine Hlmo Gang, Sheeraz Qureshi
- 12:24 Discussion

Concurrent Session 3C: Young Surgeons Forum

Castellana 2

Mod: J. Steinberger, MD; Panel: H. Bae, MD; A. Kanter, MD; A. Kumar, MD

- 11:00 Paper #31: Minimally invasive posterior cervical foraminotomy vs. open posterior cervical foraminotomy, anterior cervical discectomy and fusion and cervical total disc arthroplasty: Systematic review and meta-analysis
Andrew Platt, Richard Fessler, Vincent Traynelis, John O'Toole
- 11:04 Paper #32: Minimally invasive lateral single-position surgery for multilevel degenerative lumbar spine disease: feasibility and perioperative results in a single Latin American spine center
Sara Henao Romero, Miguel Enrique Berbeo, Roberto Carlos Diaz Orduz, Daniel Villamizar

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- 11:08 Paper #33: MIS decompression with non-instrumented facet fusion vs. MIS TLIF for stenosis associated with grade 1 degenerative spondylolisthesis
Daniel Kim, Christopher Alcala, Jes Schwender
- 11:12 Paper #34: Outcomes and complications of minimally invasive transforaminal lumbar interbody fusion in the elderly: A systematic review and meta-analysis
Jonathan Huang, Erik Rabin, Kevin Swong
- 11:16 Discussion
- 11:24 Paper #35: Radiographic subsidence following minimally invasive transforaminal lumbar interbody fusion: Comparative analysis of a static vs. expandable interbody cage
Joshua Woodward, Lacin Koro, Suel Meza, Dominick Richards, Christopher Keegan, R. David Fessler, Richard Fessler
- 11:28 Paper #36: Radiographic and patient-reported outcomes in a large cohort of patients undergoing anterior cervical discectomy and fusion using hydroxyapatite-coated PEEK interbody spacers: One-year results
Michael Kelly, S. Babak Kalantar
- 11:32 Paper #37: Lordotic and hyper-lordotic ALIF implants at the lumbosacral junction: How much lordosis is possible?
S. Harrison Farber, Jakub Godzik, Corey Walker, Jes Zhou, Kaveh Khajavi, Jay Turner, Juan Uribe
- 11:36 Paper #38: Severity and location of lumbar spine stenosis affects the outcome of total knee arthroplasty
Will Sheppard, Kevin McKay, Alexander Upfill-Brown, Akash Shah, Gideon Blustein, Adam Sassoon, Don Park
- 11:40 Discussion
- 11:48 Paper #39: The role of injury-to-surgery time in influencing union rate after odontoid screw placement for Anderson-D'Alonzo type II fractures: An international study
Luca Ricciardi, Massimo Miscusi, Antonino Raco
- 11:52 Paper #40: A novel classification system for thoracic disc herniations: External validation and application to surgical approach
S. Harrison Farber, Corey Walker, Jakub Godzik, Bernardo de Andrade, Jay Turner, Juan Uribe
- 11:56 Paper #41: National trends in lumbar disc replacement relative to fusion for lumbar degenerative disc disease and spondylosis, 2010-2018
Alexander Upfill-Brown, Jeremy Policht, Doorga Ghosh, Beau Sperry, Akash Shah, Will Sheppard, Elizabeth Lord, A Shamie, Don Park

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12:00	Paper #42: Percutaneous delivery of recombinant human bone morphogenetic protein-2 augments fusion in a nicotine-impaired rabbit fusion model <i><u>Sohrab Virk</u>, Avani Vaishnav, Sheeraz Qureshi</i>	
12:04	Discussion	
12:12	Paper #43: Peak force of the posterior ligamentous complex is lower in patients with adult spinal deformity requiring revision surgery <i>Bahar Shahidi, Brad Anderson, <u>Hani Malone</u>, Tina Iannacone, Courtney Moltzen, Robert Eastlack, Gregory Mundis</i>	
12:16	Paper #44: What advantages does a navigated robot have over a non-navigated robot for robot-assisted spine surgery? A multicenter, propensity-matched analysis of 2,800 screws and 372 patients <i><u>Nathan Lee</u>, Justin Mathew, Venkat Boddapati, Paul Park, Eric Leung, Avery Buchholz, Ash Khan, Jeffrey Mullin, John Pollina, Ehsan Jazini, Colin Haines, Thomas Schuler, Christopher Good, Joseph Lombardi</i>	
12:20	Paper #45: Comparative analysis of academic productivity among neurological and orthopedic spine surgeons <i><u>Nitin Agarwal</u>, Jes Baraldi, Vsi Reddy, Anthony Zelina, Anvith Reddy, Michael White</i>	
12:24	Discussion	
12:30-1:20	Lunch	Exhibit Hall
12:30-1:20	Young Surgeons Lunch: Growing your practice as a young surgeon in crowded, saturated marketplaces: how do I carve a niche? Panel: S. Iyer, MD; A. Kanter, MD; JP Mobasser, MD; F. Nin, MD Supported by: Medtronic	Castellana 2
1:20-3:00	Concurrent Sessions 4A & 4B	
	Concurrent Session 4A: Imaging, Navigation, & Robotics and Their Value in Your OR <i>Mods: S. Qureshi, MD & K. Radcliff, MD</i>	Gracia Ballroom
	State of the Art with New Technology	
1:20	Navigation	P. Park, MD
1:29	Robotics	I. Lieberman, MD
1:38	Discussion	
1:46	Augmented reality / extended reality / mixed reality	R. Härtl, MD
1:55	MRI spectroscopy	M. Gornet, MD
2:04	Discussion	

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2:11	The value proposition for new technology. Financial decision-making for adopting new technology. Hospital vs. ASC	A. Bruggeman, MD
2:21	Discussion	
	Debate: SPECT (single photon emission computed tomography) for MIS spine surgery	
2:28	- SPECT plays a critical role in accurate decision-making	H. Malone, MD
2:33	- SPECT is bunk. I'm smart enough with traditional imaging	S. Ryu, MD
2:38	Discussion	
2:43	Non-CME Tech Update: Title Speaker Supported by: Kuros Biosciences	
2:49	Non-CME Tech Update: Title Speaker Supported by: Spinal Simplicity	
2:55	Discussion	
3:00	Refreshment Break & Exhibit Viewing	Exhibit Hall
	Concurrent Session 4B: Postoperative Pain Control in Minimally Invasive Surgery <i>Mods: R. Fessler, MD & F. Phillips, MD</i>	Castellana 1
1:20	The opioid epidemic: Where have we been? Where are we now? Where are we going?	A. Bruggeman, MD
1:29	How opioids affect short term and long-term outcomes: The data	A. Veeravagu, MD
1:39	Discussion	
1:48	Opioid-free spinal surgery: Is it possible?	JP Mobasser, MD
2:02	What difference has ERAS made on spinal surgery?	D. Hoh, MD
2:12	Discussion	
2:17	Panel Discussion: Opioids in spine surgery – international perspectives Panel: Y. Kotani, MD, PhD; C. Menezes, MD; K. Poelstra, MD, PhD; J. Soriano, MD	
2:35	Case Presentation: Patient with chronic narcotic use on 120 MME daily who needs a multiple level fusion. Audience poll	K. Than, MD
2:38	- Operate and get the patient out of pain	V. Chang, MD
2:43	- Optimize the patient's long-term outcome by weaning him off	C. Miller, MD
2:48	Audience poll: Have opinions changed?	
2:51	Non-CME Tech Update: Title Speaker Supported by: TrackX	

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2:57	Discussion	
3:00	Refreshment Break & Exhibit Viewing	Exhibit Hall
Session 5: Deformity		Gracia Ballroom
<i>Mods: S. Hu, MD & G. Mundis, Jr., MD</i>		
3:30	What is the rationale and what is feasible with MIS deformity correction today?	K. Radcliff, MD
3:40	Discussion	
	Debate: Same day vs. staged MIS correction – how to decide	
3:45	- Same day is optimal for the patient and system	R. Fessler, MD
3:50	- Staged correction is ideal for surgeon performance	D. Okonkwo, MD
3:55	Discussion	
	Debate: Single vs. limited position vs. standard	
4:00	- Prone lateral	W. Taylor, MD
4:05	- Single position is faster AND cool	J. Uribe, MD
4:10	- Single position for the anterior column recon, but my arms are killing me with lateral screws	N. Anand, MD
4:15	- Using three positions is still the most effective approach	J. Turner, MD
4:20	Discussion	
	Debate: Reconstruction of the anterior column—which approach is the best when 5/1 is included?	
4:27	- ALIF with LLIF rules the roost (with technique video)	R. Eastlack, MD
4:32	- ALIF/oblique lateral has the advantage (with OLIF technique video)	R. Hynes, MD
4:37	- MIS osteotomies (PCO/PSO) (with technique video)	J. Uribe, MD
4:42	- Prone lateral with TLIF at L5-S1	R. Amaral, MD
4:47	Discussion	
4:52	Non-CME Tech Update: Title Speaker Supported by: DePuy Synthes	
4:58	Non-CME Tech Update: Title Speaker Supported by: DePuy Synthes	
5:04	Non-CME Tech Update: Title Speaker Supported by: Company	
5:10	Discussion	

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5:14	Keynote Lecture Introduction	L. Tumialán, MD
5:15	Keynote Lecture: What one patient's experience can teach us about ethical opioid prescribing	T. Rieder, PhD
5:40	Discussion	
5:45-6:45	Course Reception	Exhibit Hall

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7:00 am	On-site Registration	Gracia Ballroom Foyer
7:30-8:20	Non-CME Workshops with Breakfast <i>Participants are invited to attend the workshop of their choice.</i>	
	Workshop Title 1 Workshop Faculty Supported by: Atec Spine	Brera 2
	Workshop Title 2 Workshop Faculty Supported by: NuVasive	Brera 5
	Workshop Title 3 Workshop Faculty Supported by: Zimmer	Brera 6
	Session 6: Part 1 - Endoscopic Surgery <i>Moderators: L. Khoo, MD & B. Kwon, MD</i>	Gracia Ballroom
8:25	Welcome	
8:30	Intro: 37 F, marathon runner with new L calf pain. Stopped running but has NYC/Boston/London marathon to train for. MRI – LEFT L4-5 HNP [paracentral] B. Kwon, MD	
8:35	“Help! I put my scope into the foramen & nothing looks familiar!” Basics of foraminal anatomy and how not to get lost underwater	C. Kim, MD
8:43	Advanced disc pathology: Transforaminal decompression and discectomy for far-lateral pathology and paracentral and cranially migrated disc - data and technique	JS Kim, MD, PhD
8:51	Interlaminar decompression and discectomy: technique and data using uniportal and biportal techniques	S. Yi, MD
8:59	Discussion	
9:09	Debate: Should surgeons undertake the learning curve of endoscopic spine surgery? - Yes, it’s the future and like arthroscopic knee surgery, we’re all going to be doing it someday.	C. Hofstetter, MD
9:14	- No, it’s a waste of time, it takes too long, and isn’t as good.	S. Ryu, MD
9:19	Discussion	
9:25	Complications Oh @#%\$, what is that? Nerve? Clear fluid? What clear fluid? How to identify complications	J. Shen, MD, PhD

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9:31	Yup...it's the nerve. Fixing complications that occur during endoscopic spine surgery	J. Yue, MD
9:37	Discussion	
9:42	Video: Transforaminal endoscopic discectomy, far lateral	C. Hofstetter, MD
9:50	Video: Uniportal hemilaminectomy / discectomy	S. Yi, MD
9:58	Discussion and take-home points	

Session 6: Part 2 - MIS Case Debate

Gracia Ballroom

Mods: L. Khoo, MD & B. Kwon, MD

10:05	L4-L5 grade 2 spondylolisthesis with stenosis Posterior-only TLIF	K. Poelstra, MD, PhD
10:10	MIS endoscopic decompression and fusion	C. Yeung, MD
10:15	Lateral lumbar interbody fusion	L. Pimenta, MD
10:20	Prone lateral	T. Smith, MD
10:25	Discussion	

10:35 Refreshment Break with Exhibits

Exhibit Hall

11:00 am-12:10 pm Concurrent Sessions 7A, 7B, & 7C

Concurrent Session 7A: Free Papers

Gracia Ballroom

Mods: K. Than, MD, & I. Lieberman, MD

11:00	Paper #46: Lateral decubitus single-position anterior-posterior (AP) fusion shows equivalent results to minimally invasive transforaminal lumbar interbody fusion at one-year follow-up <i>Kimberly Ashayeri, Brett Braly, J. Alex Thomas, Carlos Leon, Ivan Cheng, Brian Kwon, Mark Medley, Themistocles Protopsaltis, Aaron Buckland</i>	
11:04	Paper #47: Comparison of early "prone lateral" experience vs "PTP" proceduralization: Learnings, efficiencies, and peri-op outcomes <i>Kelli Howell, Tyler Smith, Antoine Tohmeh, Bryan Lee, Gene Massey, Isaac Moss, David Schwartz, Samuel Joseph, John Pollina</i>	
11:08	Paper #48: Saphenous SSEP monitoring of femoral nerve health during lateral lumbar interbody fusion (LLIF) <i>Kelli Howell, Antoine Tohmeh, Cheri Somers</i>	
11:12	Paper #49: Indirect decompression in lateral lumbar interbody fusion. Indications and potential limitations. Assessment in effectiveness of fulfillment of a check list on preoperative considerations <i>Hazem Nicola, Bertha Loaiza</i>	
11:16	Discussion	

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- 11:24 Paper #50: Transition from dual-position to single-position procedure in lateral interbody fusion (LLIF) and percutaneous pedicular screws (PPS) navigation-assisted minimally invasive technique in treatment of lumbar degenerative disease (LDD). Operative and clinical
Hazem Nicola, Bertha Loaiza, Duval Molina, Esteban Holguin
- 11:28 Paper #51: Blade-based retraction allows safe oblique pre-psoas approaches despite inadequate oblique corridors and high-riding psoas
Chirag Berry, Punit Aghera, Dinesh Thawrani, Fadi Makhoul, Krishna Reddy
- 11:32 Paper #52: Comparison of PTP and LLIF techniques for segmental lordosis correction
Rodrigo Aral, Gabriel De Pokorny, Rafael Moriguchi, Fernando Marcelino, Marcelo Yozo, Igor Barreira, Daniel Arnoni, Luiz Pimenta
- 11:36 Paper #53: Intraoperative learning curve on navigated prone lateral lumbar interbody fusion: pearls and pitfalls
Alfredo Guiroy, Harry Shufflebarger, Jahangir Asghar, David Yam, Ashish Patel
- 11:40 Discussion
- 11:48 Paper #54: Combined OLIF and transmuscular staged correction of osteomyelitis and discitis
Richard Hynes
- 11:52 Paper #55: The Lateral in the prone (LIP) position – case series of novel indications, nuances, and outcome
Matthew Helton, Marcus Stephens, Kelsey Hundley, Noojan Kazemi
- 11:56 Paper #56: Single-position transpsoas corpectomy and instrumentation in the thoracolumbar spine for different clinical scenarios
Alfredo Guiroy, Cristiano Menezes, J. Alex Thomas, Jahangir Asghar
- 12:00 Paper #57: Comparison of patient preference, understanding, and sentiment for minimally invasive vs. open spine surgery
Christopher White, Akshar Patel, Liam Butler, Uchechukwu Akiri, Brandon Yeshoua, Jeremy Steinberger, Suel Cho, Jun Kim
- 12:04 Discussion

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Concurrent Session 7B: Free Papers

Castellana 1

Mods: C. Menezes, MD & W. Taylor, MD

- 11:00 Paper #58: Anterior longitudinal ligament release from a posterior approach: an alternative to three-column osteotomy
Nathan Han, Nathan Pratt, Farooq Usmani, Erik Hayman, Salazar Jones, Parker Johnsen, Alexandra Thomson, Ivan Ye, Timothy Chryssikos, Ashish Sharma, Joshua Olexa, Daniel Cavanaugh, Eugene Koh, Kendall Buraimoh
- 11:04 Paper #59: Implementation of an enhanced recovery after surgery (ERAS) program for patients undergoing same-day outpatient elective minimally invasive transforaminal lumbar interbody fusion (MIS TLIF)
Samuel Joseph, Uhuru Smith, Ashley Urso
- 11:08 Paper #60: Decision-making factors leading to fusion vs. decompression for one-level degenerative spondylolisthesis
Kyle Morse, Michael Steinhaus, Patawut Bovonratwet, Gregory Kazarian, Catherine Himo Gang, Avani Vaishnav, Virginia Lafage, Renaud Lafage, Sravisht Iyer, Sheeraz Qureshi
- 11:12 Paper #61: Using an electrical conductivity loop control system for automated breach prevention during robotic power drilling of bone
Larry Khoo, John Willis, Elie Saghbini, Randall Betz, Ciaran Bolger, Hee Kit Wong, Thibault Chandanson, Stephane Bette, Jimmy DaSilva, Richard Assaker, Maurice Bourlion, Helton Delfino, Andre Kaelin, Guillaume Morel
- 11:16 Discussion
- 11:24 Paper #62: Robotic navigation-assisted K-wireless pedicle screw times, accuracy, and reasons for conversion in adult degenerative spine surgery
Fedan Avrumova, Kyle Morse, Madison Heath, Roger Widmann, Darren Lebl
- 11:28 Paper #63: The impact of computer-assisted navigation on charges and readmission in lumbar spinal fusion
Ula Isleem, Calista Dominy, Justin Tang, Varun Arvind, Brian Cho, Christopher White, Sara Pasik, Suel Cho, Jun Kim
- 11:32 Paper #64: P-15 peptide is inferior to demineralized bone matrix for spine fusion in a rat model
Deeptee Jain, Don Blaskiewicz, Gregory Mundis, Jiawei He, Rema Oliver, Vedran Lovric, Will Walsh, Frank Vizesi
- 11:36 Paper #65: Reoperation following lumbar discectomy for cauda equina syndrome: Retrospective review
Landon Bulloch, Brandon Huggins, Ryan Berger, Dom Coric, Bruce Darden, II, MD, Alfred Rhyne

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- 11:40 Discussion
- 11:48 Paper #66: Patient satisfaction reviews for 967 spine neurosurgeons
Nitin Agarwal, Arjun Gupta, Radhika Gupta, Michael White, Vsi Reddy, Yue-Fang Chang, Prateek Agarwal, Nima Alan
- 11:52 Paper #67: What is a better value for your time, ACDF or CDA?
Austen Katz, Junho Song, David Essig, Jeff Silber, Sohrab Virk
- 11:56 Paper #68: Three-year conversion rate of lumbar microsurgical decompression to lumbar fusion
Michael Krzyskowski, Nitin Khanna, Shalini Tallraju, Krish Khanna
- 12:00 Paper #69: Clinical effect of chemonucleolysis with chondrolyase for lumbar disc herniation
Takashi Toyoda, Yoshihisa Kotani, Atsushi Ikeura, Takanori Saito
- 12:04 Discussion

Concurrent Session 7C: Young Surgeons Free Papers & Panel

Castellana 2

Mods: K. Foley, MD & I. Moss, MD

- 11:00 Paper #70: A matched cohort study of cage subsidence of porous titanium vs. polyetheretherketone (PEEK) for lateral lumbar interbody fusion
Hansen Deng, Lena Vodovotz, Nima Alan, Nitin Agarwal, Alp Ozpinar, Adam Kanter, Kojo Hilton, David Okonkwo
- 11:04 Paper #71: Metal-on-metal vs. metal-on-plastic artificial discs in two-level anterior cervical disc replacement: A meta-analysis with follow-up of 5 years or more
Daniel Coban, Michael Pompliano, Stuart Changoor, Stephen Sacla, Kumar Sinha, Ki Hwang, Michael Faloon, Arash Emami
- 11:08 Paper #72: Is there a difference in screw accuracy, robot time per screw, robot abandonment, and radiation exposure between the Mazor X and the Renaissance? A propensity-matched analysis of 1179 robot-assisted screws
Nathan Lee, Justin Mathew, Venkat Boddapati, Paul Park, Eric Leung, Joseph Lombardi, Ronald Lehman
- 11:12 Paper #73: A novel fusion classification system for the advent of bioactive interbody implants
Robert Eastlack, Hani Malone, Martin Collier, Hazem Elsebaie, Gregory Mundis, Bahar Shahidi, Behrooz Akbarnia
- 11:16 Discussion

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- 11:24 Paper #74: CT Hounsfield units as a predictor of reoperation and graft subsidence following standalone and multi-level lateral lumbar interbody fusion
Nima Alan, Daipayan Guha, Harry Mushlin, Nallmai Muthiah, Lena Vodovotz, Nitin Agarwal, Kojo Hilton, David Okonkwo, Adam Kanter
- 11:28 Paper #75: Telemedicine in spine patients: Utilization and satisfaction remain high even after COVID-19 lockdown
Patawut Bovonratwet, Jung Kee Mok, Karim Shafi, Jes Dowdell, Evan Sheha, Sheeraz Qureshi, Sravisht Iyer
- 11:32 Paper #76: The safety and efficacy of stand-alone lateral lumbar interbody fusion for adjacent segment disease in a cohort of 44 patients
Elliot Pressman, Ryan Screven, Gaut Rao, Thomas Freeman, Puya Alikhani
- 11:36 Paper #77: Implementation of AR for the key steps in MIS TLIF
Fabian Sommer, Sertac Kirnaz, Lynn McGrath, Jacob Goldberg, Branden Medary, Roger Härtl
- 11:40 Discussion
- 11:48 Paper #78: Restoring segmental spinal alignment in mini-open lateral spinal deformity surgery – determinators of radiographic outcome
Alexander Spiessberger, Nicholas Dietz, Basil Gruter, Justin Virojanapa, Peter Hollis
- 11:52 Paper #79: Comparative RCT study between endoscopic and open decompression for lumbar spinal stenosis: Preliminary outcomes in 38 patients with 6-months follow-up
Junghoon Kim, Youngjin Kim, Woojung Lim, Kyeongsik Ryu, Jinsung Kim
- 11:56 Paper #80: Supra-iliac or trans-iliac endoscopic access to L5-S1: Prevalence of anatomic variants and a novel radiographic method for predicting the preferred approach
Nebiyu Osman, Sagar Gulati, Ceron Kia, Scott Mallozzi, Mark Cote, Said Osman, Isaac Moss
- 12:00 pm Paper #81: Microscopic tubular and full-endoscopic lumbar discectomy for massive disc herniation causing cauda equina syndrome: A retrospective case series
Jared Wilcox, Aysha Alsahlawi, Oliver Lasry, Jeff Golan
- 12:04 Discussion
- 12:10 **Lunch with Exhibits – Last Chance for Giveaway!**

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Session 8: Part 1 - Ambulatory Surgical Centers

Mods: J. Uribe, MD & P. Whang, MD

12:45	37 F marathon runner with new L calf pain. Stopped running but has to train for NYC marathon. MRI – L4-5 spondylolytic spondylolisthesis. Your hospital just shut down all in-patient surgery due to COVID restrictions but you have privileges at your ASC	B. Kwon, MD
12:50	When do you know you're ready to take cases to ASC? Is it all about procedural time?	L. Khoo, MD
12:58	Regional anesthesia for lumbar surgery?	A. Sharan, MD
1:06	Who are the critical team members to successful ASC surgery?	K. Poelstra, MD, PhD
1:14	Discussion	
1:22	Do the economics of ASCs make sense? For whom?	K. Foley, MD
1:30	Role of ASCs during the COVID-19 pandemic. Did it help the needs of our patients? "As we learned in 1941, national emergencies can create strange bedfellows"	C. Yeung, MD
1:38	Discussion	

Session 8: Part 2 – Ambulatory Surgical Centers

Mods: L. Tumialán, MD & C. Yeung, MD

1:46	Debate: This patient needs to be done in a real hospital or ASC is adequate L3-4 LLIF for PJF above previous L4-S1 fusion	J. Godzik, MD
1:50	Agree	B. Kwon, MD
1:55	Disagree	I. Lieberman, MD
2:00	Discussion	
2:05	Debate: This patient is the ideal candidate for an ASC and will be better off because of it 2-level ACDF for myelopathy	K. Than, MD
2:08	Agree	S. Qureshi, MD
2:13	Disagree	P. Whang, MD
2:18	Discussion	
2:23	Complications: That revision microdiscectomy was supposed to be a piece of cake, why is there CSF everywhere? And why does my anesthesiologist look so nervous? What to do when your 1-hour operation is now 3 hours long	I. Moss, MD
2:31	Complications: ASA 3 in the ASC? Sure...	C. Kim, MD
2:39	Discussion	
2:44	Video: Same-day awake fusion	A. Sharan, MD
2:54	Questions	
3:00	Adjourn	