Final Program

Saturday, July 29th, 2017

Room A

7:00 - 7:40 a.m.

General Session: BESS/CSF leakage
Room A
Moderators: Jae Sung Ahn (Korea), Keng-Chang Liu (Taiwan)

7:00-7:05 a.m.

Biportal Endoscopic Spinal Surgery; A new endoscopic technique for transforaminal discectomy and decompression

**Ho-Jin Lee**¹, Jae-sung Ahn⁴, Dae-jung Choi², Ki-young Lee¹
¹Department of Orthopedic Surgery, Chungnam National University School of Medicine, Daejeon, Korea, Korea
²Spine center, Barun Hospital, Jin-ju, Korea

7:05-7:10 a.m.

Preliminary Learning Cases of Unilateral Biportal Endoscopic Spine Surgery in Stenosis and Disc Protrusions

**Seung Deok Sun**¹, Seung deok Sun¹, Jae Young Park¹, Jin Ku Choi¹, Kyungjei Woo¹,
Jung Sug Kim²
¹Sun’s orthopedics, Korea
²Department of Nursing, Yeoju Institute of Technology

7:10-7:15 a.m.

Unilateral Biportal Endoscopic Decompression by 30 Aoendoscopy in Lumbar Spinal Stenosis

**Ju Eun Kim**¹, Dae-Jung Choi²
¹AN DONG hospital , Korea
²Barun Hospital

7:15-7:20 a.m.

Discussion
7:20-7:25 a.m.
Bi-portal Arthroscopic Spinal Surgery (BASS) with 30Ao Arthroscopy for Far Lateral Approach of L5-S1 -Technical note-
Ju Eun Kim¹, Dae-Jung Choi²
¹AN DONG hospital , Korea
²Barun Hospital

7:25-7:30 a.m.
Efficacy of Blood Injection Therapy for Stopping Cerebrospinal Fluid Leakage after Lumbar Spine Surgery
Masatoshi Teraguchi, Mamoru Kawakami, Nami Moriguchi, Yuyu Ishimoto
Spine Care Center, Wakayama Medical University Kihoku Hospital , Japan

7:30-7:35 a.m.
Are CSF leaks forgiving in Minimally Invasive Spine Surgeries?
Arvind Gopalrao Kulkarni
Mumbai Spine Scoliosis & Disc Replacement Centre, Bombay Hospital Mumbai, India

7:35-7:40 a.m.
Discussion

8:00 -9:00 a.m.
Morning seminar: Tsuyoshi Okudaira (Japan)
Room A
Moderators: Shinichi Konno (Japan)
9:00-9:50 a.m.

General Session: Trauma
Room A
Moderators: Ki Tack Kim (Korea), Ken Ishii (Japan)

9:00-9:05 a.m.
Percutaneous Screw Fixation for Unstable Sacral Fracture and Sacroiliac Joint Disruption
Chung-Hwan Chen¹²³⁴, Yen-Mou Lu¹³, Sung-Yen Lin¹²³⁴, Chih-Ming Kao³⁴, Shih-Hsiang Chou³⁴
¹Department of Orthopaedics, College of Medicine, Kaohsiung Medical University, Taiwan
²Orthopaedic Research Center, Kaohsiung Medical University
³Department of Orthopedics, Kaohsiung Medical University Hospital
⁴Department of Orthopedics, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung Medical University

9:05-9:10 a.m.
Another Diagnostic Tool in Thoracolumbar Posterior Ligament Complex Injury: Interspinous Distance Ratio
Ki Youn Kwon, Heui-Jeon Park, Ji Soo Shin, Jun Pyo Lee
Department of Orthopedics, Wonju College of Medicine, Yonsei University, Korea

9:10-9:15 a.m.
The Validity of the Thoracolumbar Injury Classification System in Thoracolumbar Spine Injuries
Sung-Kyu Kim¹, Hyoung-Yeon Seo¹, Hyun-Tae Kim¹, Jae-Yoon Chung², So-Hyun Moon³
¹Chonnam national university hospital, Korea
²Gwangju Hyundai hospital
³Chosun University

9:15-9:20 a.m.
Anterior atlas fracture following C1 laminectomy which was successfully treated by conservative treatment: a case report
Takahiro Harada, Yasushi Fujiwara, Bunichiro Izumi, Ryo Ota, Yutaka Kadonishi, Kazuto Nakao, Tomokazu Yoshida, Makoto Nishimori, Hideki Manabe
Hiroshima City Asa Hospital, Japan

9:20-9:30 a.m.
Discussion
9:30-9:35 a.m.
Experience in Treating Unstable Pelvic Fracture Using MIS-SPF at Our Hospital
Seiya Watanabe, Hideaki Iba, Kazuo Nakanishi, Toru Hasegawa
Kawasaki Medical Hospital, Japan

9:35-9:40 a.m.
Minimally Invasive Spine Stabilization for Thoracolumbar Burst Fracture
Keisuke Tomita, Koji Sato, Toshihiro Ando, Yoshitaka Suzuki, Junichi Ukai, Shigeharu Iwano
Nagoya Daini Red Cross Hospital, Japan

9:40-9:45 a.m.
Minimally Invasive Spinal Surgery with Using Video-Assisted Thoracic Surgery (VATS) for the Management of Thoracolumbar Burst Fractures
Kazuhiro Takeuchi, Tomohiko Hirose, Kensuke Shinohara, Shinnosuke Nakahara
Dept. of Orthopaedic Surgery, National Okayama Medical Center, Japan

9:45-9:55 a.m.
Discussion

10:00-11:00 a.m.
General Session: Navigation/Complication
Room A
Moderators: Shuxun Hou (China), Yen-Mou Lu (Taiwan)

10:00-10:05 a.m.
Spine Endoscopic Treatment under O-arm navigation for Lumbar Degenerative Scoliosis Patient: A Technical Note
Chien-Chun Chang, Hsien-Te Chen, Yen-Jen Chen, Horng-Chaung Hsu, Tsung-Yu Ho
China medical university hospital, Taiwan, Taiwan
10:05-10:10 a.m.
Meng-Huang Wu¹, Navneet Kumar Dubey⁴, Yen-Yao Li ⁵, Ching-Yu Lee ⁵, Chin-Chang Cheng ⁵, Chung-Sheng Shi ³, Tsung-Jen Huang ¹,²
¹Department of Orthopedic Surgery, Taipei Medical University Hospital, Taipei, Taiwan, Taiwan
²Department of Orthopaedics, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
³Graduate Institute of Clinical Medical Sciences, College of Medicine, Chang Gung University, Taiwan
⁴Graduate Institute of Biomedical Materials and Tissue Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan
⁵Department of Orthopedic Surgery, Chang Gung Memorial Hospital, Chiayi, Taiwan

10:10-10:15 a.m.
Pitfalls in Robotic Spine Surgery
Yen-Mou Lu¹, Chung-Hwan CHEN¹, Shih-Hsiang Chou¹, Chih-Ming Kao¹, Yin-Chun Tien¹, Chih-Lung Lin²
¹Department of Orthopedics, Kaohsiung Medical University Hospital, Taiwan
²Department of Neurosurgery, Kaohsiung Medical University Hospital

10:15-10:20 a.m.
Direct Repair of Lumbar Pars Interarticulars Defects by Utilizing Intraoperative O-arm Based Navigation and Microendoscopic Technique
Jian Wang, Yue Zhou, Changqing Li, Wenjie Zheng, Zhengfeng Zhang,
Department of Orthopaedic Surgery, Affiliated Xinqiao Hospital, The Third Military Medical University, China

10:20-10:30 a.m.
Discussion
10:30-10:35 a.m.
Application of Intraoperative CT-guided Navigation in Simultaneous Minimally Invasive Anterior and Posterior Surgery for Infectious Spondylitis

**Meng-Huang Wu¹**, Navneet Kumar Dubey⁴, Ching-Yu Lee¹,²,⁵, Yen-Yao Li⁵, Chin-Chang Cheng⁵, Chung-Sheng Shi³, Tsung-Jen Huang¹,²

¹Department of Orthopedic Surgery, Taipei Medical University Hospital, Taipei, Taiwan, Taiwan
²Department of Orthopedics, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
³Graduate Institute of Clinical Medical Sciences, College of Medicine, Chang Gung University, Taiwan
⁴Graduate Institute of Biomedical Materials and Tissue Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan
⁵Department of Orthopedic Surgery, Chang Gung Memorial Hospital, Chiayi, Taiwan

10:35-10:40 a.m.
Cranial Adjacent Segment Disease after Posterior Lumbar Interbody Fusion in Patients with Degenerative Lumbar Spondylolisthesis by Cortical Bone Trajectory Technique

**Kanji Mori**, Akira Nakamura, Kazuya Nishizawa, Takafumi Yayama, Shinji Imai

Department of Orthopaedic Surgery, Shiga University of Medical Science, Japan

10:40-10:45 a.m.
Examination of the Accuracy of Percutaneous Pedicle Screw Fixation and the Factor of Misplacement

**Tsunemasa Matsubara¹**, Kimiaki Sato, Kei Yamada, Hidetake Inoue, Kimiaki Yokosuka, Goto Masafumi, Shoji Iwahashi, Kensei Nagata, Naoto Shiba

Kurume university, orthopedics, Japan

10:45-10:50 a.m.
Clinical Outcomes of the VATS of Revision Surgery for Osteoporotic Vertebral Fractures in Elderly Patients

**Kazuo Nakanishi**, Toru Hasegawa

Kawasaki Medical School, Japan

10:50-11:00 a.m.
Discussion
11:00 - 11:40 a.m.

General Session: Deformity
Room A
Moderators: Ming-Chau Chang (Taiwan), Charoen Chotigavanich (Thailand)

11:00 - 11:05 a.m.
Comparative Study of S2-alar-iliac screw and Posterior iliac screw Pathways Between Male and Female Using Three-dimensional Computed Tomography
Haruki Funao¹, Norihiro Isogai², Shinichi Ishihara², Masayuki Ishikawa³, Makoto Nishiyama³, Masaya Nakamura³, Yuko Kitagawa⁴, Morio Matsumoto³, Hideaki Obara⁴, Ken Ishii¹,²
¹Department of Orthopaedic Surgery, School of Medicine, International University of Health and Welfare, Japan
²Spine and Spinal Cord Center, International University of Health and Welfare Mita Hospital
³Department of Orthopaedic Surgery, Keio University School of Medicine
⁴Department of Surgery, Keio University School of Medicine

11:05 - 11:10 a.m.
Dual Growing Rods Treatment for Progressive Pediatric Spinal Deformity
Seungjin Choi¹, Hak-Sun Kim¹, Kyung-Soo Suk¹, Hwan-Mo Lee², Jae-Ho Yang²
¹Department of Orthopaedic Surgery, Gangnam severance hospital, Korea
²Department of Orthopaedic Surgery, Severance hospital

11:10 - 11:15 a.m.
Combined Anterior-posterior Fusion Using Lateral Interbody Fusion for Adult Spinal Deformity. Assessments of Obtained Lordosis
Eijiro Okada¹, Naobumi Hosogane³,⁵, Kentaro Fukuada⁴,⁵, Mitsuhiro Nishida²,⁵, Osahiko Tsuji¹,⁵, Narihito Nagoshi¹,⁵, Nobuyuki Fujita¹,⁵, Mituru Yagi¹,⁵, Masaya Nakamura¹,⁵, Morio Matsumoto¹,⁵, Kota Watanabe¹,⁵
¹Dept. of Orthopaedic Surgery, Keio University, Japan
²Dept. of Orthopaedic Surgery, Saiseikai Central Hospital
³Dept. of Orthopaedic Surgery, National Defense Medical College
⁴Dept. of Orthopaedic Surgery, Saiseikai Yokohamashi Tobu Hospital
⁵Keio Spine Research Group (KSRG)

11:15 - 11:20 a.m.
Discussion
Clinical Outcome of Multiple OLIFs and Hybrid MIS Posterior Correction and Instrumentation for Adult Spinal Deformities

**Yoshihisa Kotani**, Yoshinao Koike, Yoshiaki Hosokawa, Hidemasa Terao, Hiroaki Kameda, Hideaki Hukaya

Spine and Spinal Cord Center, Steel Memorial Muroran Hospital, Japan

Clinical Comparison of Two Spinal Reconstruction Techniques for Osteoporotic Vertebral Collapse: OLIF with Percutaneous Modified CBT screw vs Open TLIF with Modified CBT screw

**Ryo Fujita**, Yoshihisa Kotani, Takuma Kaibara, Katsuhisa Fujita, Yuusuke Kameda, Hideaki Fukaya

1 Hokkaido University Hospital, Japan
2 Steel Memorial Muroran Hospital

Discussion

12:00 -13:00

Luncheon seminar: Wataru Narita (Japan)
Room A
Moderators: Motonobu Natsuyama (Japan)

13:10 -13:50

General Session: LLIF2
Room A
Moderators: Jae Chul Lee (Korea), Jwo-Luen Pao (Taiwan)

Clinical results of minimally invasive anterolateral interbody fusion and percutaneous posterior fixation in lateral position for lumbosacral degenerative disorders

**Yoshihisa Kotani**, R Hynes, Y Koike, Y Hosokawa, H Terao, Y Kameda, H Fukaya

1 Spine and Spinal Cord Center, Steel Memorial Muroran Hospital, Muroran, Japan
2 B.A.C.K Center, Melbourne, FL USA
13:15-13:20
Is Change of Lumbar Lordosis after Oblique Lateral Interbody Fusion Predictable?
Jae Won Lee 1, Jeang Kim Whoan 1, Kun Young Park 2, Shann Haw Chang 1, Kyung Hoon Park 1
1Eulji University hospital, Department of Orthopedic Surgery, Korea
2Daejeon Veterans hospital

13:20-13:25
Contributory Factors of Segmental Lordosis in Lumber Spine after LLIF
Yoshitaka Suzuki, Koji Sato, Toshihiro Ando, Junichi Ukai, Masahiro Yoshida, Shoji Sato,
Hiroshige Iwano, Hiroaki Iwase, Keisuke Tomita, Ryota Hutatsugi, Masatoshi Haruta
Nagoya Daini Red Cross Hospital, Japan

13:25-13:30
Discussion

13:30-13:35
Oblique Lateral Interbody Fusion, Preliminary Experience
Jwo-Luen Pao
Far Eastern Memorial Hospital, Taiwan

13:35-13:40
Comparison of Segmental Dimensional Change and Perioperative Complications between OLIF and ALIF at L5-S1 Segment
Chang-Hoon Jeon, Nam-Su Chung, Han-Dong Lee
Department of Orthopaedic Surgery, Ajou University School of Medicine, Korea

13:40-13:45
Anatomic Study of the Great Vessels for L5-S1 Oblique Lumbar Interbody Fusion
Reza Rahim, John Choi,
Spine Ortho Clinic Melbourne, Australia

13:45-13:50
Discussion

13:55-14:00
Closing Remarks: Hiroaki Nakamura (Japan)
Room A
9:00-9:05 a.m.
A Novel Anterior Percutaneous Endoscopic Lumbar Interbody Fusion; Key-field one portal Lumbar Interbody Fusion (KyoLIF)
Yoshinori Kyoh
Kyoh Orthopaedics & Neurosurgery Clinic, Japan

9:05-9:10 a.m.
A New Technique of C1 Lateral Mass Screw Insertion via A Suboccipital Triangle
Takamitsu Tokioka, Takahiro Hayashi
Kochi Health Sciences Center, Japan

9:10-9:15 a.m.
Percutaneous Rhizotomy (Bipolar radiofrequency denervation) for Lumbar Facet Joint and Sacroiliac Joint Pain: A Prospective Study with One Year Follow-up
Temee Sathienrat
Charoenkrung Pracharak Hospital, Medical service department, Bangkok metropolitan administration, Bangkok, Thailand

9:15-9:20 a.m.
Three Cases of L4-5 Bastrup's Disease due to L5-S1 Spondylolytic Spondylolisthesis
Sang Soo Eun
Spine Health Wooridul Hospital, Korea

9:20-9:30 a.m.
Discussion
General Session: Miscellaneous
Room B
Moderators: Hyong Yeon Seo (Korea), Yutaka Hiraizumi (Japan)

9:30-9:35 a.m.
Minimally Invasive Surgery of Dumbbell-type Neurinoma: A Novel Surgical Technique with Preservation of the Facet Joint

Hiroshi Kono¹, Hideki Matsuda¹, Takahumi Maeno¹, Hiroaki Nakamura²
¹Department of Orthopaedic surgery Ishikiriseiki Hospital, Japan
²Department of Orthopaedic Surgery Osaka City University

9:35-9:40 a.m.
Usefulness of New Boomerang Type Cage for Lumbar Lordosis Gain with Single Level MIS-TLIF

Junichi Ukai, Koji Sato, Toshihiro Ando, Yoshitaka Suzuki, Shigeharu Iwano, Keisuke Tomita
Japanese Red Cross Nagoya Daini Hospital, Japan

9:40-9:45 a.m.
Hybrid Fixation with Interspinous Fusion Device and Ipsilateral-Unilateral Pedicle Screw System for Transforaminal Lumbar Interbody Fusion - A Finite Element Study

Meng-Huang Wu ¹, Jia-Ru Yang ², Zheng-Cheng Zhong³, Chun-Ming Chen⁴, Chu-An Luo⁴,
Yuan-Ping Luh², Ming-Hong Chen⁵, Tsung-Jen Huang¹
¹Department of Orthopedics, Taipei Medical University Hospital, Taipei, Taiwan, Taiwan
²Institute of Mechatronic Engineering, National Taipei University of Technology, Taipei, Taiwan
³Department of Mechanical Engineering, National Chiao Tung University, Hsinchu, Taiwan
⁴Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan.
⁵Division of Neurosurgery, Department of Surgery, Cathay General Hospital, Taipei, Taiwan

9:45-9:50 a.m.
Supra-acetabular Line is Better than Supra-iliac Line for Coronal Balance Referencing - A study of Perioperative whole Spine X-rays in Spinal Deformity Patients

Hyung-suk Juh¹, Ki-Tack Kim¹, Yong-Chan Kim¹, Cheung-Kue Kim¹,
Hwee Weng Dennis Hey²
¹Kyung Hee University Hospital at Gang Dong, Korea
²University Orthopaedics, Hand and Reconstructive Microsurgery (UOHC) National University Health System, Singapore

9:50-10:00 a.m.
Discussion
10:00-10:50 a.m.

**General Session: PELD1**  
Room B  
**Moderators:** Yen-Yao Li (Taiwan), Naresh Kumar (Singapore)

10:00-10:05 a.m.
Risk Assessment of Abdominal and Retroperitoneal Organ Injuries Performing Transforaminal Percutaneous Endoscopic Lumbar Discectomy  
**Fumitake Tezuka,** Hiroaki Manabe, Masatoshi Morimoto, Fumio Hayashi, Kazuta Yamashita, Yoichiro Takata, Toshinori Sakai, Akihiro Nagamachi, Koichi Sairyo  
Tokushima University, Japan

10:05-10:10 a.m.
The Usefulness of Surgical Techniques and The Management of Local Anesthesia to Avoid Exiting Nerve Root Injury During Percutaneous Endoscopic Lumbar Discectomy  
**Seiji Yamaya**¹,³, Toshinori Sakai¹, Fumitake Tezuka¹, Yuhei Yamasaki¹, Kazuta Yamashita¹, Yoichiro Takata¹, Kosaku Higashino¹,², Takashi Chikawa², Akihiro Nagamachi¹, Koichi Sairyo¹  
¹Department of Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan  
²Department of Orthopaedic Surgery, Tokushima Municipal Hospital  
³Department of Orthopedics, Tohoku University School of Medicine

10:10-10:15 a.m.
Morphological Analysis of the Intervertebral Foramen for the Safer Performance of TF-PELD and TF-PEVF  
**Masahiro Kashima**¹, Takashi Chikawa¹, Masahiko Matsumura¹, Shinji Yoshioka¹, Takefumi Nakagawa¹, Masaru Nakamura¹, Shunji Nakano¹, Koichi Sairyo²  
¹Department of Orthopedic Surgery, Tokushima Municipal Hospital, Japan  
²Department of Orthopedics, Tokushima University

10:15-10:20 a.m.
Strategy and Clinical Results of Percutaneous Endoscopic Interlaminar Decompression (PEID) for Recurrent Lumbar Disc Herniation with Lateral Recess Stenosis  
**Keng-Chang Liu,** Chan-Chen Young, Min-Hong Hsieh,  
Department of Orthopedics, Buddhist Dalin Tzu Chi General Hospital, Taiwan, Taiwan

10:20-10:30 a.m.
**Discussion**
10:30-10:35 a.m.
Importance of An Appropriate Facilitator and Equipment in Starting a Percutaneous Endoscopic Lumbar Discectomy via the Interlaminar Method
Takeshi Hori, Kazuo Ohmori, Koichiro Ono,
Center for spinal surgery, Nippon koukan hospital, Japan

10:35-10:40 a.m.
Percutaneous Endoscopic Translaminar Approach (PETA) for Herniated Nucleus Pulposus Cranially Migrated in the Preforaminal Zone of the Hidden Zone of the Lumbar Spine
Shigeki Urayama¹, Akira Dezawa², Takahiro Funato³, Koichi Sairyo⁴
¹Mizuno Memorial Hospital, Japan
²Dezawa Akira PED Clinic
³Aso General Hospital
⁴Tokushima University

10:40-10:45 a.m.
Percutaneous Endoscopic Lumbar Nerve Decompression (PELND) of the Fifth Lumbar Spinal Nerve in the Extraforaminal Area of the Lumbosacral Junction
Shigeki Urayama¹, Akira Dezawa², Takahiro Funato³
¹Mizuno Memorial Hospital, Japan
²Dezawa Akira PED Clinic
³Aso General Hospital

10:45-10:50 a.m.
Discussion
11:00-11:40 a.m.

General Session: PELD2
Room B
Moderators: Noor Helmi Zairin (Indonesia), Hee-Kit Wong (Singapore)

11:00-11:05 a.m.
Early Result Comparison between Instrumented Fusion and Percutaneous Endoscopic Decompression for Spondylolisthetic Stenosis
Yi Hung Huang
Chia Yi Christian Hospital, Taiwan

11:05-11:10 a.m.
The impact of navigator-assisted device on radiation exposure in transforaminal percutaneous endoscopic lumbar discectomy
Shisheng He, Guoxin Fan,
Shanghai Tenth People’s Hospital, Tongji University School of Medicine, China

11:10-11:15 a.m.
Trajectory-guided technique of transforaminal percutaneous endoscopic lumbar discectomy for L5–S1 lumbar disc herniation with high crest: a prospective control study
Guoxin Fan, Shisheng He
Shanghai Tenth People’s Hospital, Tongji University School of Medicine, China

11:15-11:20 a.m.
Discussion

11:20-11:25 a.m.

Full-endoscopic Lumbar Discectomy for the Upper Migrated Lumbar Disc Herniation
Koichiro Ono, Kazuo Ohmori, Takeshi Hori
Center for Spinal Surgery, Nippon Koukan Hospital, Japan
11:25-11:30 a.m.
The Efficacy of Percutaneous Lumbar Disc Decompression for Treating Lumbar Disc Pathology

Harmantya Mahadhipta, Luthfi Gatam,
Spine Centre, Premier Bintaro Hospital, Indonesia, Indonesia

11:30-11:35 a.m.
Endoscopic Decompression Surgery via a Transforaminal Approach under Local Anesthesia for Lateral Recess Stenosis Due to Lumbar Degenerative Disease

Seiji Yamaya1,3, Toshinori Sakai1, Fumitake Tezuka1, Yuhei Yamasaki1, Kazuta Yamashita1, Yoichiro Takata1, Kosaku Higashino1, Takashi Chikawa2, Akihiro Nagamachi1, Koichi Sairyo1
1Department of Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan
2Department of Orthopaedic Surgery, Tokushima Municipal Hospital
3Department of Orthopaedic Surgery, Tohoku University School of Medicine

11:35-11:40 a.m.
Discussion

13:10 -13:40

General Session: infection
Room B
Moderators: Huilin Yang (China), Agung Irianto Komang (Indonesia)

13:10-13:15
Is Minimally Invasive Spine Surgery a Blessing to Minimise SSI (Surgical Site Infections)?

Arvind Gopalrao Kulkarni
Mumbai Spine Scoliosis & Disc Replacement Centre, Bombay Hospital Mumbai, India

13:15-13:20
The Posterior Fixation Surgery Using Instrumentation without Anterior Debridement as a Primary Surgery for the Treatment of Thoracolumbar Pyogenic Spondylodiscitis

Tetsuhiro Ishikawa1, Mitsutoshi Ota1, Masaaki Aramomi2,3
1Orthopedic Surgery, Sanmu Medical Center, Chiba, Japan
2Department of Orthopedic Surgery, Teikyo Chiba Medical Center
3Orthopedic Surgery, Oyumino Chuo Hospital, Chiba
Surgical Usage of a Cortical Bone Trajectory Pedicle Screw to Treat Lumbar Pyogenic Spondylodiscitis - Preliminary Report –
**Young-Yul Kim** ¹, Chanjoo Park², Kee-Won Rhyu²
¹Department of Orthopedic Surgery, Daejeon St. Mary’s Hospital, Korea
²St. Vincent’s Hospital, College of Medicine, The Catholic University of Korea

Clinical Effectiveness and Limitation of Percutaneous Endoscopic Surgery for Pyogenic Spondylodiscitis in the Thoracic and Lumbar Spine
**Daisuke Ukeba**, Manabu Ito, Hiroshi Nakayama, Kei Kuroki, Tomomi Ono
Department of Spine and Spinal Cord Disorders, National Hospital Organization Hokkaido Medical Center, Japan
Department of Orthopaedic Surgery, Chonnam National University Hospital, Korea

Discussion