

# PROGRAM

## Room 1

### 1st day - Friday, November 4th

#### General Presentation 1-1 Adult Spinal Deformity

9:00 ~ 9:56

Moderator : Gen Inoue (Kitasato University)

**01-1-1 Comparative study of self-image domain of SRS-22 between adult idiopathic scoliosis and de novo scoliosis** ▶ page189

○Hiroshi Taniwaki, Akira Matsumura, Yuki Kinoshita, Junichi Shirakawa, Masatoshi Hoshino, Takashi Namikawa  
Department of Pediatric Orthopedic Surgery, Osaka City General Hospital, Scoliosis center

**01-1-2 Residual low back pain following adult spinal deformity surgery** ▶ page190

○Maruo Keishi, Fumihiko Arizumi, Kazuya Kishima, Norichika Yoshie, Tomoyuki Kusukawa, Toshiya Tachibana  
Department of Orthopaedic Surgery, Hyogo Medical University

**01-1-3 The effect of age-adjusted sagittal alignment on the result of decompression surgery for the lumbar spinal stenosis** ▶ page191

○Momotaro Kawai, Mitsuru Yagi, Satoshi Suzuki, Masahiro Ozaki, Yohei Takahashi, Osahiko Tsuji, Narihito Nagoshi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
Department of Orthopaedic Surgery, Keio University School of Medicine

**01-1-4 Impacts of Postoperative Symptom Improvement and Disability of Activities of Daily Living on Treatment Satisfaction in Adult Spinal Deformity Surgery** ▶ page192

○Hideyuki Arima<sup>1,2</sup>, Daisuke Togawa<sup>3</sup>, Tomohiko Hasegawa<sup>1</sup>, Yu Yamato<sup>1</sup>, Go Yoshida<sup>1</sup>, Tomohiro Banno<sup>1</sup>, Shin Oe<sup>1</sup>, Koichiro Ide<sup>1</sup>, Tomohiro Yamada<sup>1</sup>, Keiichi Nakai<sup>1</sup>, Kenta Kurosu<sup>1</sup>, Yukihiro Matsuyama<sup>1</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Hamamatsu University School of Medicine,  
<sup>2</sup>Next Generation Creative Education Center for Medicine, Engineering, and Informatics, Hamamatsu University School of Medicine,  
<sup>3</sup>Department of Orthopedic Surgery, Kinki University Nara Hospital

**01-1-5 Does postoperative segmental lordosis affect spinal sagittal balance and the patient-reported outcomes in single level lumbar posterior in situ fusion?** ▶ page193

○Hiramatsu Sho<sup>1,2</sup>, Hiromi Ataka<sup>1</sup>, Tetsuro Nakazawa<sup>1</sup>, Akiyoshi Kuroda<sup>2</sup>, Sho Inoue<sup>2</sup>, Masashi Takaso<sup>2</sup>, Takaaki Tanno<sup>1</sup>  
<sup>1</sup>Matsudo Seikei Hospital, <sup>2</sup>Department of Orthopaedics, Kitasato University

**01-1-6 How Effective is Therapeutic Exercise for Back Pain in the Patients with Adult Spinal Deformity?** ▶ page194

- Tatsuya Endo, Osamu Shirado  
Departments of Orthopaedic & Spinal Surgery/ Rehabilitation, AMEC (Aizu Medical Center) at Fukushima Medical University

**01-1-7 Prevention of progression of posterior pelvic tilt with back strengthening exercise and its effect on QOL** ▶ page195

- Michio Hongo, Yuji Kasukawa, Daisuke Kudo, Ryota Kimura, Naohisa Miyakoshi  
Department of Orthopedic Surgery, Akita University Graduate School of Medicine

**General Presentation 1-2 Adult Spinal Deformity 10:00 ~ 10:48**

Moderator : Yu Yamato (Hamamatsu University School of Medicine)

**01-2-1 FEA for mechanism of occasional ALL rupture with posterior correction procedure for ASD Using LLIF -analysis regarding cage location-** ▶ page196

- Hiroki Takeda<sup>1</sup>, Yuichiro Abe<sup>1,3</sup>, Takaya Imai<sup>2</sup>, Kurenai Hachiya<sup>2</sup>, Sota Nagai<sup>2</sup>, Soya Kawabata<sup>2</sup>, Nobuyuki Fujita<sup>2</sup>, Shinjiro Kaneko<sup>1</sup>

<sup>1</sup>Department of Spine and Spinal Cord Surgery, Fujita Health University

<sup>2</sup>Department of Orthopedic Surgery of Fujita Health University, <sup>3</sup>Eniwa Hospital

**01-2-2 Prevention of rod fracture using multi-rod construct over 5 years** ▶ page197

- Yu Yamato<sup>1</sup>, Tomohiko Hasegawa<sup>2</sup>, Go Yoshida<sup>2</sup>, Tomohiro Banno<sup>2</sup>, Shin Oe<sup>1</sup>, Hideyuki Arima<sup>2</sup>, Kouichirou Ide<sup>2</sup>, Tomohiro Yamada<sup>2</sup>, Kenta Kurosu<sup>2</sup>, Keiichi Nakai<sup>2</sup>, Yukihiro Matsuyama<sup>2</sup>

<sup>1</sup>Division of Geriatric Musculoskeletal Health, Hamamatsu University School of Medicine,

<sup>2</sup>Department of Orthopaedic Surgery, Hamamatsu University School of Medicine

**01-2-3 Unplanned Return to the Operating Room Following Primary Definitive Fusion for Adult Spinal Deformity** ▶ page198

- Hiroaki Nakashima<sup>1</sup>, Masaaki Machino<sup>1</sup>, Sadayuki Ito<sup>1</sup>, Naoki Segi<sup>1</sup>, Tokumi Kanemura<sup>2</sup>, Kenyu Ito<sup>2</sup>, Tetsuya Ohara<sup>3</sup>, Ryoji Tauchi<sup>3</sup>, Ryuichi Shinjyo<sup>4</sup>, Shiro Imagama<sup>1</sup>

<sup>1</sup>Department of Orthopaedics, Nagoya University School of Medicine,

<sup>2</sup>Department of Orthopaedics, Konan Kosei Hospital,

<sup>3</sup>Department of Orthopaedics, Meijyo Hospital,

<sup>4</sup>Department of Orthopaedics, Anjyo Kosei Hospital

**01-2-4 The discriminatory ability of the formulas for lumbar lordosis targets to predict mechanical complication after adult spinal deformity surgery** ▶ page199

○Satoshi Inami<sup>1</sup>, Tomoya Kanto<sup>1</sup>, Hiroshi Moridaira<sup>1</sup>, Daisaku Takeuchi<sup>2</sup>, Haruki Ueda<sup>1</sup>, Hiromichi Aoki<sup>3</sup>, Takuya Iimura<sup>2</sup>, Hidekazu Arai<sup>1</sup>, Satoshi Takada<sup>1</sup>, Tsuyoshi Sorimachi<sup>3</sup>, Hiroshi Taneichi<sup>1</sup>

<sup>1</sup>Department of orthopedic surgery, Dokkyo medical university,

<sup>2</sup>Department of orthopedic surgery, Nasu red cross hospital,

<sup>3</sup>Department of orthopedic surgery, Gotennyama hospital

**01-2-5 Relationship between Hounsfield Units of Upper Instrumented Vertebrae, PJF, and GAP Score in Female Patients with Adult Spinal Deformity** ▶ page200

○Akihiko Hiyama, Daisuke Sakai, Hiroyuki Katoh, Masahiko Watanabe  
Department of Orthopaedic Surgery, Tokai University School of Medicine

**01-2-6 Risk factor for allogenic transfusion in adult spinal deformity surgery** ▶ page201

○Yasushi Iijima<sup>1</sup>, Toshiaki Kotani<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Tsutomu Akazawa<sup>2</sup>, Shohei Minami<sup>1</sup>, Seiji Ohtori<sup>3</sup>

<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, St. Marianna University School of Medicine,

<sup>3</sup>Department of Orthopedic Surgery, Chiba University of Graduate School of Medicine

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**Yamada & Inoue Memorial Lecture**

**11:00 ~ 12:00**

Moderator : Masashi Takaso (Kitasato University)

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**ML1 The treatment of dysplastic spondylolisthesis by reduction and AIS by short fusion --Learn from textbook, and have a critical eye--**

▶ page137

○Nohara Yutaka

Professor Emeritus, Dokkyo Medical University; Honorary Director, Nagareyama Central

**ML2 Scoliosis in children - History of treatment improvement and tasks for the future** ▶ page138

○Nobumasa Suzuki

Medical Scanning Tokyo

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**Luncheon Seminar 1**

12:10 ~ 13:10

Moderator : Seiji Ohtori (Chiba University)

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**LS1-1 The evolution of spinal instrumentation for scoliosis ▶ page167**

○Shohei Minami  
Seirei Sakura Citizen Hospital

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**LS1-2 Intraoperative spinal cord function monitoring : Is it possible to reliably monitor complex spinal cord functions with presently available methodologies? ▶ page168**

○Tetsuya Tamaki  
Vice president, Board of Directors, Aitokuen; Medical Director Emeritus,  
Wakayama Rosai Hospital; Professor Emeritus, Wakayama Medical University

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**Luncheon Seminar 4**

13:30 ~ 14:30

Moderator : Takashi Kaito (Osaka University)

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**LS4-1 Current Status of Scoliosis Surgery Using Patient-Compatible Custom Guide ▶ page173**

○Kanji Sasaki  
Department of Orthopaedic Surgery, Seirei Hamamatsu Hospital

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**LS4-2 Usefulness of Locking Scoliosis Correction Manipulator and MySpine Patient-Matched Pedicle Screw Placement Guides ▶ page174**

○Hideki Murakami  
Department of Orthopaedic Surgery, Iwate Medical University School of Medicine

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**Expert Seminar 1**

15:20 ~ 16:20

Moderator : Koki Uno (National Hospital Organization Kobe Medical Center)

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**EX1-1 Current status and future perspective of treatment for adolescent idiopathic scoliosis ▶ page139**

○Morio Matsumoto  
Department of Orthopaedic Surgery, Keio University School of Medicine

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**EX1-2 Pathogenesis and treatment for dropped head syndrome ▶ page140**

○Masashi Yamazaki  
Department of Orthopaedic Surgery, Faculty of Medicine, University of Tsukuba

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## **Symposium 1 Checkup System of Scoliosis -Current Status and Future Perspective**

**16:45 ~ 17:55**

Moderator : Manabu Ito (National Hospital Organization Hokkaido Medical Center)

Morio Matsumoto (Keio University)

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**SY1-1 Current status and perspective for School Scoliosis Screening in Japan** ▶ page143

○Kota Watanabe

Department of Orthopedic Surgery, Keio University School of Medicine

**SY1-2 The issues of the scoliosis screening in the school medical examination for locomotive organ** ▶ page144

○Sadao Arai

**SY1-3 School scoliosis screening - world trends and actual situation in Miyazaki Japan -** ▶ page145

○Hiroshi Kuroki

Department of Orthopaedic Surgery, National Hospital Organization Miyazaki Higashi Hospital

**SY1-4 Status and issues of scoliosis screening in Akita** ▶ page146

○Akiko Misawa<sup>1</sup>, Rena Wakabayashi<sup>1</sup>, Michio Hongo<sup>2</sup>, Daisuke Kudo<sup>2</sup>, Ryota Kimura<sup>2</sup>, Naohisa Miyakoshi<sup>2</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Akita Prefectural Center on Development and Disability,

<sup>2</sup>Department of Orthopaedic Surgery, Akita University Graduate School of Medicine

**SY1-5 The Current Status and Issues of Scoliosis Examinations and Recommendations for the Future** ▶ page147

○Toshiaki Kotani<sup>1</sup>, Shun Okuwaki<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>, Shuhei Ohyama<sup>1</sup>, Shuhei Iwata<sup>1</sup>, Tsutomu Akazawa<sup>2</sup>, Shohei Minami<sup>1</sup>

<sup>1</sup>Dept. of Orthopedic Surg., Seirei Sakura Citizen Hosp.,

<sup>2</sup>Dept. of Orthopedic Surg., St. Marianna Univ., School of Medicine

**SY1-6** ▶ page148

○Hanako Jimi

## Room 2

### 1st day - Friday, November 4th

#### General Presentation 1-3 Pathophysiology/Evaluation 9:00 ~ 10:04

Moderator : Masayuki Miyagi (Kitasato University)

##### 01-3-1 The relation between radiographic spinopelvic alignment and physical performance test in a community-based female cohort

▶ page202

○Hisashi Chiba<sup>1</sup>, Tetsuya Kobayashi<sup>2</sup>, Mitsuru Imai<sup>2</sup>

<sup>1</sup>Department of Rehabilitation, Furano Geriatric Health Services Facility,

<sup>2</sup>Department of Orthopaedic Surgery, Asahikawa Medical University

##### 01-3-2 Risk Factors for Progressive Spinal Sagittal Imbalance after Total Hip Arthroplasty: A 3-Year Follow Up Study

▶ page203

○Satoshi Nagatani, Satoshi Kato, Satoru Demura, Tamon Kabata, Yoshitomo Kajino, Noriaki Yokogawa, Daisuke Inoue, Yuki Kurokawa, Ryohei Annen, Motoya Kobayashi, Yohei Yamada, Masafumi Kawai, Hiroyuki Tsuchiya

Department of Orthopaedic Surgery, Kanazawa University

##### 01-3-3 Effect of nutritional status on spinal sagittal alignment and back pain in osteoporosis patients

▶ page204

○Akiyoshi Kuroda, Masayuki Miyagi, Yuji Yokozeki, Kosuke Murata, Tomohisa Koyama, Sho Inoue, Daisuke Ishii, Motoki Makabe, Gen Inoue, Masashi Takaso

Department of Orthopaedic surgery Kitasato University School of Medicine

##### 01-3-4 Risk factors for spinal sagittal malalignment in patients with osteoporosis

▶ page205

○Sho Inoue, Masayuki Miyagi, Akiyoshi Kuroda, Yuji Yokozeki, Kosuke Murata, Tomohisa Koyama, Yusuke Mimura, Daisuke Isii, Motoki Makabe, Gen Inoue, Masashi Takaso

Department of Orthopaedic Surgery Kitasato University School of Medicine

**01-3-5 Lumbar curve in adolescent idiopathic scoliosis Lenke Type 1 is determined by the amount of lateral deviation and vertebral axial rotation** ▶ page206

○Yuichi Shimizu<sup>1</sup>, Ryota Takatori<sup>1</sup>, Daisuke Hukuhara<sup>2</sup>, Tomohisa Harada<sup>2</sup>, Nobuaki Takeura<sup>1</sup>, Hitoshi Tonomura<sup>1</sup>, Masateru Nagae<sup>1</sup>, Nozomu Inoue<sup>3</sup>, Kenji Takahashi<sup>1</sup>

<sup>1</sup>Department of Orthopaedics, Graduate School of Medical Science, Kyoto Prefectural University of Medicine,

<sup>2</sup>Department of Orthopaedics, Rakuwakai Marutamachi Hospital,

<sup>3</sup>Department of Orthopaedics, Rush University Medical Center

**01-3-6 Risk factors and effects on flexibility of coronal vertebral wedging in thoracic adolescent idiopathic scoliosis Lenke type-1 and 2** ▶ page207

○Shun Okuwaki<sup>1</sup>, Toshiaki Kotani<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>, Shuhei Oyama<sup>1</sup>, Shuhei Iwata<sup>1</sup>, Tsutomu Akazawa<sup>2</sup>, Shohei Minami<sup>1</sup>, Seiji Ohtori<sup>3</sup>, Masashi Yamazaki<sup>4</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, St. Marianna University School of Medicine,

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<sup>4</sup>Department of Orthopedic Surgery, Faculty of Medicine, University of Tsukuba

**01-3-7 Spinal flexibility assessments in patients with neuromuscular scoliosis** ▶ page208

○Eiki Shirasawa<sup>1</sup>, Masayuki Miyagi<sup>1</sup>, Akiyoshi Kuroda<sup>1</sup>, Gen Inoue<sup>1</sup>, Takayuki Imura<sup>1</sup>, Toshiyuki Nakazawa<sup>1</sup>, Shinsuke Ikeda<sup>1</sup>, Yuusuke Mimura<sup>1</sup>, Yoshihide Tanaka<sup>1</sup>, Wataru Saito<sup>2</sup>, Masashi Takaso<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery Kitasato University School of Medicine,

<sup>2</sup>Department of Orthopaedic Surgery Kitasato University medicalcenter

**01-3-8 Development of AI Algorithm for Automatic Cobb Angle Measurement in Adult Scoliosis** ▶ page209

○Shuzo Kato, Takeo Nagura, Yoshihiro Maeda, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
Department of Orthopaedic Surgery, Keio University

Moderator : Takahiro Iida (Teine Keijinkai Hospital)  
Toshiki Saito (Ichinomiya Nishi Hospital)

**SS1-1 Postoperative changes in activities of daily living over time evaluated using the Lumbar Stiffness Disability Index of AIS patients** ▶ page244

○Taro Okumura<sup>1</sup>, Takehide Katogi<sup>1</sup>, Yasushi Iijima<sup>2</sup>, Tsuyoshi Sakuma<sup>2</sup>,  
Toshiaki Kotani<sup>2</sup>, Shohei Minami<sup>2</sup>

<sup>1</sup>Department of Physical Therapy, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital

**SS1-2 Does Adolescent Idiopathic Scoliosis Surgery Affect Forward Bending Movements? ~ Analysis of the deviation of the sit and reach test value** ▶ page245

○Shun Nokariya<sup>1,2</sup>, Toshiaki Kotani<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>,  
Masayuki Miyagi<sup>2</sup>, Gen Inoue<sup>2</sup>, Shohei Minami<sup>1</sup>, Seiji Ohtori<sup>3</sup>, Masashi Takaso<sup>2</sup>

<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, Kitasato University School of Medicine,

<sup>3</sup>Department of Orthopedic Surgery, Chiba University, Graduate School of  
Medicine

**SS1-3 The Importance of Spinal Mobility Sparing and Health-Related Quality of Life in Adolescent Idiopathic Scoliosis** ▶ page246

○Takehide Katogi<sup>1</sup>, Taro Okumura<sup>1</sup>, Toshiaki Kotani<sup>2</sup>, Yasushi Iijima<sup>2</sup>,  
Tsuyoshi Sakuma<sup>2</sup>, Syohei Minami<sup>2</sup>

<sup>1</sup>Seirei Sakura Citizen Hospital Department of Physical Therapy,

<sup>2</sup>Seirei Sakura Citizen Hospital Department of Orthopedic Surgery

**SS1-4 Health-related quality of life evaluation using EQ5D for surgical treated idiopathic scoliosis patients** ▶ page247

○Hideki Shigematsu, Sachiko Kawasaki, Yuma Suga, Masaki Ikejiri,  
Yasuhito Tanaka

Department of Orthopaedic surgery, Nara Medical University

**SS1-5 Relationship between Coronal Alignment and Gait in Patients with Adult Spinal Deformity** ▶ page248

○Norihiro Takegami, Koji Akeda, Koki Kawaguchi, Takahiro Hasegawa,  
Junichi Yamada, Tatsuhiko Fujiwara, Akihiro Sudo

Department of Orthopaedic Surgery, Mie University Graduate School of Medicine



**SS1-6 Clinical outcome using SRS-22 in patients with idiopathic scoliosis with a main thoracic curve who underwent surgery in adulthood**

▶ page249

- Yoshifumi Takahashi, Motoki Iwasaki, Yukitaka Nagamoto, Tomiya Matsumoto, Masayuki Furuya  
Department of Orthopaedic Surgery, Osaka Rosai Hospital

**SS1-7 Relationship between preoperative bending and traction flexibility assessments and postoperative results in Lenke type1 and type2 adolescent idiopathic scoliosis**

▶ page250

- Hisakazu Shitozawa, Haruo Misawa, Tomoko Tetsunaga, Koji Uotani, Yoshiaki Oda, Masataka Ueda, Toshifumi Ozaki  
Department of orthopaedics, Okayama university

**SS1-8 Preoperative flexibility evaluation in adolescent idiopathic scoliosis -Comparison between active side bending group and passive side bending group-**

▶ page251

- Takanao Shimabukuro, Kotaro Nishida  
Orthop. Surg., Univ. of the Ryukyus

**SS1-9 Curve progression and related factors in patient of adolescent idiopathic scoliosis with Risser 4**

▶ page252

- Rena Wakabayashi<sup>1</sup>, Akiko Misawa<sup>1</sup>, Ryota Kimura<sup>2</sup>, Daisuke Kudo<sup>2</sup>, Michio Hongo<sup>2</sup>, Yoichi Shimada<sup>3</sup>, Naohisa Miyakoshi<sup>2</sup>  
<sup>1</sup>Akita Prefectural Center on Development and Disability,  
<sup>2</sup>Department of Orthopedic surgery, Akita University,  
<sup>3</sup>Akita Prefectural Medical care and Childcare Organization

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**Luncheon Seminar 2**

**12:10 ~ 13:10**

Moderator : Katsushi Takeshita (Jichi Medical University)

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**LS2-1 mechanism and prevention of occasional ALL rupture with posterior correction procedure for ASD -importance of appropriate choice for osteotomy-**

▶ page169

- Shinjiro Kaneko  
Department of Spine and Spinal Cord, Fujita Health University

**LS2-2 Surgical decision making, surgical planning and anticipated outcomes for adult spinal deformity**

▶ page170

- Shay Bess  
Director, Orthopaedics surgery, Denver International Spine Center

Moderator : Jun Takahashi (Shinshu University)

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**LS5-1 Tips and pitfalls of the correction surgeries for adult spinal deformities** ▶ page175

○Takahiro Iida

Department of Orthopaedic Surgery Spine Center, Teine Keijinkai Hospital

**LS5-2 Surgery of spinal cord tumor -key and pitfall-** ▶ page176

○Hiroshi Ozawa

Department of Orthopaedic Surgery, Tohoku Medical and Pharmaceutical University

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**General Presentation 1-4 AIS surgery 1****15:20 ~ 16:16**Moderator : Kazuhide Inage (Chiba University)

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**O1-4-1 Neck and shoulder pain or stiffness in thoracic adolescent idiopathic scoliosis 10 years after posterior spinal fusion** ▶ page210○Masayuki Ohashi<sup>1</sup>, Kei Watanabe<sup>1</sup>, Toru Hirano<sup>2</sup>, Kazuhiro Hasegawa<sup>3</sup>, Hideki Tashi<sup>1</sup>, Tatsuo Makino<sup>1</sup>, Keitaro Minato<sup>1</sup>, Hiroyuki Kawashima<sup>1</sup><sup>1</sup>Department of Orthopedic Surgery, Niigata University,<sup>2</sup>Department of Orthopedic Surgery, Uonuma Kikan Hospital,<sup>3</sup>Niigata Spine Surgery Center**O1-4-2 Risk factor analysis of postoperative shoulder imbalance in Lenke 2 AIS** ▶ page211○Yuki Kinoshita<sup>1,2,3</sup>, Akira Matsumura<sup>1</sup>, Takashi Namikawa<sup>1</sup>, Masatoshi Hoshino<sup>1</sup>, Hiroshi Taniwaki<sup>1</sup>, Jyun Park<sup>2</sup>, Junichi Shirakawa<sup>1</sup>, Hiroaki Nakamura<sup>3</sup><sup>1</sup>Department of Orthopedic Surgery, Osaka City General Hospital,<sup>2</sup>Baba Memorial Hospital, <sup>3</sup>Osaka Metropolitan University**O1-4-3 Examination of cervical spine alignment before and after surgery in hypokyphosis AIS -compared between Coplanar method and Rod Rotation method-** ▶ page212

○Naoya Kondo, Katsutaka Yamada, Tatsuhiro Sekiya, Takashi Sakai, Keisuke Toda, Tomoyuki Saito

Department of Orthopedic Surgery, Yokohama Brain and Spine Center

**01-4-4 Analysis of Preoperative and Operative Factors Influencing Postoperative Shoulder Imbalance in Lenke Type 2 Adolescent Idiopathic Scoliosis** ▶ page213

- Keita Nakashima, Koki Uno, Teppei Suzuki, Masaaki Ito, Kohei Kawakita, Masahiko Huruya  
Department of Orthopaedic Surgery, Kobe Medical Center

**01-4-5 Risk factors associated with scoliosis correction and postoperative shoulder imbalance in Lenke type 1 idiopathic scoliosis patients using the Coplanar method.** ▶ page214

- Arihisa Shimura<sup>1</sup>, Hidetoshi Nojiri<sup>1</sup>, Hiroshi Moridaira<sup>2</sup>, Hidekazu Arai<sup>2</sup>, Satoshi Takada<sup>2</sup>, Katsutaka Yamada<sup>3</sup>, Naoya Kondo<sup>3</sup>, Tadao Morino<sup>4</sup>, Eichiro Nakamura<sup>5</sup>, Masaki Tomori<sup>6</sup>, Kazuyuki Otani<sup>7</sup>, Koji Akeda<sup>8</sup>, Takuya Nagai<sup>9</sup>, Hiromitsu Toyoda<sup>10</sup>, Kenyu Ito<sup>11</sup>, Jyunya Katayanagi<sup>12</sup>, Hiroshi Taneichi<sup>2</sup>
- <sup>1</sup>Department of Orthopedics, Juntendo University,  
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<sup>3</sup>Department of Orthopedics, Yokohama Municipal Stroke,Nerve and Spine Center,  
<sup>4</sup>Department of Orthopedics, Ehime University,  
<sup>5</sup>Department of Orthopedics, University of Occupational and Environmental Health,  
<sup>6</sup>Department of Orthopedics, Saiseikai Kawaguchi General Hospital,  
<sup>7</sup>Department of Orthopedics, Kudanzaka hospital,  
<sup>8</sup>Department of Orthopedics, Mie University,  
<sup>9</sup>Department of Orthopedics, Miyazaki University,  
<sup>10</sup>Department of Orthopedics, Osaka Metropolitan University Hospital,  
<sup>11</sup>Department of Orthopedic Surgery, Konan Kosei Hospital,  
<sup>12</sup>Department of Orthopedic Surgery, Dokkyo Medical University Saitama medical Center

**01-4-6 A Novel Method of Selecting the Upper Instrumented Vertebra for Adolescent Idiopathic Scoliosis Lenke Type 2 Curves: The Modified S-line** ▶ page215

- Tetsuhiko Mimura<sup>1</sup>, Shota Ikegami<sup>1</sup>, Tomohiro Banno<sup>2</sup>, Shoji Seki<sup>3</sup>, Tetsuro Ohba<sup>4</sup>, Hiroki Oba<sup>1</sup>, Masashi Uehara<sup>1</sup>, Terue Hatakenaka<sup>1</sup>, Takayuki Kamanaka<sup>1</sup>, Yoshinari Miyaoka<sup>1</sup>, Takuma Fukuzawa<sup>1</sup>, Michihiko Koseki<sup>5</sup>, Hirotaka Haro<sup>4</sup>, Yoshiharu Kawaguchi<sup>3</sup>, Yukihiro Matsuyama<sup>2</sup>, Jun Takahashi<sup>1</sup>
- <sup>1</sup>Department of Orthopaedic Surgery, Shinshu University School of Medicine,  
<sup>2</sup>Department of Orthopaedic Surgery, Hamamatsu University School of Medicine,  
<sup>3</sup>Department of Orthopaedic Surgery, Faculty of Medicine, University of Toyama,  
<sup>4</sup>Department of Orthopaedic Surgery, University of Yamanashi School of Medicine,  
<sup>5</sup>Faculty of Textile Science and Technology, Shinshu University

**01-4-7 Short-term outcomes of vertebral coplanar alignment technique in Lenke type 1 and 2 adolescent idiopathic scoliosis - A multicenter study** ▶ page216

- Yusuke Murakami<sup>1</sup>, Tadao Morino<sup>1</sup>, Hiroshi Moridaira<sup>2</sup>, Hidekazu Arai<sup>2</sup>, Satoshi Takada<sup>2</sup>, Katsutaka Yamada<sup>3</sup>, Naoya Kondo<sup>3</sup>, Hidetoshi Nojiri<sup>4</sup>, Arihisa Shimura<sup>4</sup>, Eiichiro Nakamura<sup>5</sup>, Masaki Tomori<sup>6</sup>, Kazuyuki Ohtani<sup>7</sup>, Koji Akeda<sup>8</sup>, Takuya Nagai<sup>9</sup>, Hiromitsu Toyoda<sup>10</sup>, Kenyu Ito<sup>11</sup>, Junya Katayanagi<sup>12</sup>, Hiroshi Taneichi<sup>2</sup>
- <sup>1</sup>Department of orthopaedic surgery, Ehime University,  
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**Short Symposium 2 Surgical Tips**

**16:30 ~ 17:45**

Moderator : Norio Kawahara (Kanazawa Medical University)  
 Kotaro Nishida (University of the Ryukyus)

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**SS2-1 Effect of Intraoperative whole spine X-P in Adult Scoliosis Surgery**

▶ page253

- Keiichi Nakai, Yu Yamato, Tomohiko Hasegawa, Go Yoshida, Tomohiro Banno, Hideyuki Arima, Shin Oe, Tomohiro Yamada, Koichiro Ide, Kenta Kurosui, Yukihiro Matsuyama  
 Department of orthopedics, Hamamatsu University School of Medicine

**SS2-2 Use of an outrigger device for concave rod rotation to correct apical hypokyphosis in adolescent idiopathic scoliosis** ▶ page254

- Shoji Seki<sup>1</sup>, Hiroto Makino<sup>1</sup>, Katsuhiko Kamei<sup>1</sup>, Hayato Futakawa<sup>1</sup>, Taketoshi Yasuda<sup>1</sup>, Kenta Watanabe<sup>1</sup>, Yasuhito Yahara<sup>2</sup>, Yoshiharu Kawaguchi<sup>1</sup>
- <sup>1</sup>Department of Orthopaedic surgery, University of Toyama,  
<sup>2</sup>Department of Immunology and Cell Biology

- SS2-3 Comparison of pressure during attachment rod between two methods of the attachments in adolescent idiopathic scoliosis underwent posterior spine surgery** ▶ page255
- Kanichiro Wada, Gentaro Kumagai, Toru Asari, Yoshiro Nitobe, Yasuyuki Ishibashi  
Department of Orthopaedic Surgery, Hirosaki University Graduate School of Medicine
- SS2-4 The spine robotic system is useful for less-experienced surgeons in spinal deformity surgery** ▶ page256
- Jun Ueno, Tsutomu Akazawa, Yoshiaki Torii, Tasuku Umehara, Masahiro Iinuma, Atuhiro Yshida, Ken Tomochika, Hisateru Niki  
Department of Orthopaedic Surgery, St. Marianna University School of Medicine
- SS2-5 Evaluation of intraoperative coronal alignment using Computer-Assisted Rod Bending System in adult spinal deformity surgery** ▶ page257
- Takumi Takeuchi<sup>1</sup>, Kazumasa Konishi<sup>1</sup>, Hideto Sano<sup>1</sup>, Masato Takahashi<sup>1</sup>, Hitoshi Kono<sup>2</sup>, Naobumi Hosogane<sup>1</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Kyorin University School of Medicine,  
<sup>2</sup>Department of Orthopedic Surgery, Keiyu orthopedic hospital
- SS2-6 Outcome of interventions for intraoperative motor evoked potentials waveform change in scoliosis surgery** ▶ page258
- Tomohisa Hashimoto<sup>1</sup>, Koki Uno<sup>2</sup>, Teppei Suzuki<sup>2</sup>, Masaaki Ito<sup>2</sup>  
<sup>1</sup>Department of Clinical Engineering, National Hospital Organization Kobe Medical Center,  
<sup>2</sup>Department of orthopedic surgery, National Hospital Organization Kobe Medical Center
- SS2-7 Reduction in CT scan number with the reference frame middle attachment method in intraoperative CT navigation for adolescent idiopathic scoliosis** ▶ page259
- Hiroki Oba, Shota Ikegami, Masashi Uehara, Takayuki Kamanaka, Terue Hatakenaka, Yoshinari Miyaoka, Daisuke Kurogouchi, Takuma Fukuzawa, Jun Takahashi  
Department of Orthopaedic Surgery, Shinshu University
- SS2-8 Adoption of dual sacral alar iliac screw technique for patients with elderly thoracolumbar spine deformity** ▶ page260
- Akihito Wada, Kazumasa Nakamura, Keiji Hasegawa, Katsunori Fukutake, Hiroshi Takahashi  
Department of Orthopedic Surgery, Toho University School of Medicine

- SS2-9      ROBOTIC SURGERY FOR SCOLIOSIS IN SPINE HYBRID OR**      ▶ page261  
○Sohei Ebara  
Spine Center & Scoliosis Center, Shonan Fujisawa Tokushukai Hospital
- SS2-10     “CORRECTION BOX” FOR SCOLIOSIS SURGERY — Pre-operative  
correction method for scoliosis surgery in operation theatre —**  
▶ page262  
○Sohei Ebara  
Spine Center & Scoliosis Center, Shonan Fujisawa Tokushukai Hospital
- SS2-11     THE RING’ New correction method for scoliosis surgery**      ▶ page263  
○Sohei Ebara  
Spine Center & Scoliosis Center, Shonan Fujisawa Tokushukai Hospital
- SS2-12     Preliminary clinical results of Coplanar-Hybrid techniques in  
patients with idiopathic scoliosis: Synergy between convex  
coplanar correction and concave sublaminar bands**      ▶ page264  
○Tsunehiko Konomi, Yoshihide Yanai, Toshiki Ohkubo, Mitsuru Furukawa,  
Yoshiyuki Yato  
Dept. of Orthopaedic Surgery, National Hospital Organization Murayama Medical  
Center
- SS2-13     Corrective posterior lumbosacral interbody fusion in a patient with  
thoracolumbar/lumbar scoliosis with lumbosacral oblique take off:  
A preliminary Report**      ▶ page265  
○Tomoyuki Osato, Noriaki Kawakami, Toshiki Saito, Naoto Miyashita,  
Kouhei Otani  
Department of Orthopedics and Spine surgery, Ichinomiya Nishi Hospital
- SS2-14     Optimal placement of accessory rods in long spinopelvic fusion to  
prevent rod fracture: a biomechanical study using synthetic bone  
models**      ▶ page266  
○Shunji Tsutsui, Takuhei Kozaki, Hiroshi Yamada  
Department of Orthopaedic Surgery, Wakayama Medical University
- SS2-15     Evaluation of a novel method for rapid pathogen identification in  
spinal infections**      ▶ page267  
○Shinsuke Ikeda<sup>1</sup>, Gen Inoue<sup>1</sup>, Toshiyuki Nakazawa<sup>1</sup>, Takayuki Imura<sup>1</sup>,  
Masayuki Miyagi<sup>1</sup>, Wataru Saito<sup>2</sup>, Eiki Shirasawa<sup>1</sup>, Yusuke Mimura<sup>1</sup>,  
Yoshihide Tanaka<sup>1</sup>, Sho Inoue<sup>1</sup>, Akiyoshi Kuroda<sup>1</sup>, Sho Hiramatsu<sup>3</sup>,  
Ayumu Kawakubo<sup>4</sup>, Yuji Yokozeki<sup>5</sup>, Masashi Takaso<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery Kitasato University School of Medicine,  
<sup>2</sup>Department of Orthopaedic Surgery Kitasato University Medical Center,  
<sup>3</sup>Matsudo Orthopaedic Hospital Spine Center,  
<sup>4</sup>Department of Orthopaedic Surgery Zama General Hospital,  
<sup>5</sup>Ministry of Health, Labour and Welfare Health Policy Bureau

## Room 3

### 1st day - Friday, November 4th

#### Infantile Spinal Deformity

9:00 ~ 10:45

Moderator : Toru Yamaguchi (Fukuoka Children's Hospital)

Tepei Suzuki (National Hospital Organization Kobe Medical Center)

#### EOS-1

▶ page347

- Kohei Otani, Noriaki Kawakami, Toshiki Saito, Tomoyuki Osato,  
Naoto Miyashita  
Ichinomiya Nishi Hospital

#### EOS-2

▶ page347

- Mitsuki Kusaba, Tepei Suzuki, Koki Uno, kohei Kawakita, Masaaki Ito,  
Keita Nakashima, Masahiko Furuya  
Department of Orthopaedic Surgery, National Hospital Organization Kobe Medical  
Center

#### EOS-3

▶ page348

- Yoshiaki Oda, Haruo Misawa, Tomoko Tetsunaga, Kouji Uotani,  
Hisalazu Shitozawa, Masataka Ueda, Toshifumi Ozaki  
Department of Orthopaedic Surgery, Okayama University Hospital

#### EOS-4

▶ page348

- Kei Watanabe, Masayuki Ohashi, Hideki Tashi, Tatsuo Makino, Keitaro Minato,  
Hiroyuki Kawashima  
Department of Orthopedic Surgery, Niigata University

#### EOS-5

▶ page349

- Yuta Fukase, Kota Watanabe, Satoshi Suzuki, Yohei Takahashi, Satoshi Nori,  
Osahiko Tuji, Narihito Nagoshi, Mitsuru Yagi, Morio Matumoto,  
Masaya Nakamura  
Department of Orthopedics of Keio university

#### EOS-6

▶ page349

- Daiki Urayama, Ayato Nohara, Masaaki Iizuka, Shunichi Kishida,  
Hidemasa Umekouji, Takashi Ono  
Department of Spinal Surgery, JCHO Tokyo Shinjuku Medical Center

#### EOS-7

▶ page350

- Hiroshi Taniwaki, Akira Matsumura, yuki Kinoshita, Junichi Shirakawa,  
Masatoshi Hoshino, Takashi Namikawa  
Department of Pediatric Orthopedic Surgery, Osaka City General Hospital,  
Scoliosis center

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**Luncheon Seminar 3****12:10 ~ 13:10**

Moderator : Haruhisa Yanagida (Fukuoka Children's Hospital)

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**LS3-1 Anterior reconstruction in corrective surgery for adult spinal deformity** ▶ page171

○Kentaro Fukuda

Dept. of Orthopaedic surgery, Saiseikai Yokohamashi Tobu Hospital

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**LS3-2 Correction of adolescent idiopathic scoliosis using the convex rod rotation maneuver** ▶ page172

○Hidetomi Terai

Dept. of Orthopaedic Surgery, Osaka Metropolitan University, Graduate School of Medicine.

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**Luncheon Seminar 6****13:30 ~ 14:30**

Moderator : Kazuhiro Hasegawa (Niigata Spine Surgery Center)

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**LS6 Current concepts in treatment for adolescent idiopathic scoliosis : From conservative treatment to corrective surgery** ▶ page177

○Kei Watanabe

Division of Orthopedic Surgery, Niigata University Graduate School of Medical and Dental Sciences

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**Short Symposium 3 Case Report / Case Series****16:30 ~ 17:40**Moderator : Hideki Shigematsu (Nara Medical University)  
Wataru Saito (Kitasato University)

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**SS3-1 Distal junctional kyphosis requiring additional surgery 30 years after scoliosis correction: A case report** ▶ page268

○Naoto Miyashita, Noriaki Kawakami, Toshiki Saito, Tomoyuki Osato, Kohei Otani

Department of Orthopedic Surgery, Ichinomiya Nishi Hospital

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**SS3-2 Short Term Outcome of Two Stage Anteroposterior Surgery for Spinal Deformity Due to Rheumatoid Arthritis.** ▶ page269○Takuya Yamamoto<sup>1</sup>, Hikaru Sakamoto<sup>1</sup>, Ichiro Kawamura<sup>2</sup>, Yuhei Yahiro<sup>3</sup>, Eiji Taketomi<sup>1</sup>, Nobuhiko Sunahara<sup>1</sup>, Noboru Taniguchi<sup>2</sup><sup>1</sup>Department of Orthopedic Surgery, Japanese Red Cross Kagoshima Hospital,<sup>2</sup>Department of Orthopaedic Surgery, Kagoshima University,<sup>3</sup>Department of Orthopedic Surgery, Kagoshima City Hospital



- SS3-3 Closing wedge osteotomy from posterior for cervicothoracic congenital scoliosis** ▶ page270
- Takachika Shimizu<sup>1</sup>, Hirotaka Chikuda<sup>2</sup>, Masatake Ino<sup>1</sup>, Naofumi Toda<sup>1</sup>, Masatoshi Ono<sup>1</sup>, Toshiki Tsukui<sup>1</sup>, Keisuke Fueki<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Gunma Spine Center (Harunaso Hospital),  
<sup>2</sup>Department of Orthopaedic Surgery, Gunma University, Graduate School of Medicine
- SS3-4 Two cases with scoliosis of postoperative decrease in blood cobalt ion levels by nail extraction due to the rod fracture** ▶ page271
- Kentarō Ishii, Tatsuya Satou, Hiromitsu Takano, Motoshi Gomi, Takahumi Majima, Ryouzuke Takahashi, Hidetoshi Nojiri, Muneaki Ishijima  
Juntendo University School of Medicine Department of Orthopedic Surgery
- SS3-5 Diastematomyelia in congenital scoliosis : a report of a case** ▶ page272
- Rypsuke Yokota<sup>1</sup>, Takatoshi Okuda<sup>1</sup>, Hidetoshi Nojiri<sup>2</sup>, Hiroyasu Ohara<sup>3</sup>, Tsuyoshi Hara<sup>3</sup>, Hiromitsu Takano<sup>2</sup>, Yuichiro Maruyama<sup>1</sup>, Muneaki Ishijima<sup>2</sup>  
<sup>1</sup>Department of Orthopedics Juntendo university Urayasu hospital,  
<sup>2</sup>Department of Orthopedics Juntendo university,  
<sup>3</sup>Department of Neurosurgery Juntendo university
- SS3-6 Exercise improved coronal imbalance of Adult spinal deformity ;a case report** ▶ page273
- Takahiro Hasegawa, Koji Akeda, Koki Kawaguchi, Junichi Yamada, Norihiko Takegami, Tatsuhiko Fujiwara, Akihiro Sudo  
Departments of Orthopaedic Surgery, Mie University Graduate School of Medicine
- SS3-7 Growing rod for early onset severe scoliosis with osteogenesis imperfecta: two sibling case report** ▶ page274
- Michio Hongo<sup>1</sup>, Yuji Kasukawa<sup>1</sup>, Daisuke Kudo<sup>1</sup>, Akiko Misawa<sup>2</sup>, Yuichi Ono<sup>3</sup>, Naohisa Miyakoshi<sup>1</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Akita University Graduate School of Medicine,  
<sup>2</sup>Department of Orthopedic Surgery, Akita Prefectural Center on Development and Disability,  
<sup>3</sup>Department of Orthopedic Surgery, Akita Red Cross Hospital
- SS3-8 Surgical experience of a symptomatic scoliosis patient who was diagnosed with Pierre Robin syndrome at birth.** ▶ page275
- Yudai Hanyu, Osamu Shirado, Masumi Iwabuchi, Yota Sakuma  
Department of Orthopedics and Spine Surgery, Fukushima Medical University Aizu medical Center.

- SS3-9 Two cases of double posterior wedge osteotomy for severe congenital kyphosis** ▶ page276  
 ○Haruo Misawa, Yoshiaki Oda, Koji Uotani, Hisakazu Shitozawa, Toshifumi Ozaki  
 Department of Orthopaedic Surgery, Okayama University Hospital
- SS3-10 A case report of the patient with Juvenile Idiopathic Scoliosis underwent a Dual Growing Rod procedure.** ▶ page277  
 ○Takuya Mishiro  
 Takamtasu Red Cross Hospital, Department of Orthopaedic Surgery
- SS3-11 Postoperative long-term follow-up of spinal instrumentation: reports of three cases** ▶ page278  
 ○Baofeng Yang, Kiyoshi Kumano, Kaiji Ota  
 Shinagawa Shisyokai Hospital
- SS3-12 Two cases of surgery for scoliosis associated with Noonan's syndrome** ▶ page279  
 ○Takuya Nagai<sup>1</sup>, Hiroshi Kuroki<sup>2</sup>, Kiyoshi Higa<sup>1</sup>, Tomohumi Kuroki<sup>1</sup>,  
 Etsuo Chosa<sup>1</sup>  
<sup>1</sup>Dept of Orthop.Sug., Univ of Miyazaki,  
<sup>2</sup>Dept of Orthop.Sug., NHO Miyazaki Higashi Hospital
- SS3-13 A Case of surgery for spinal deformity associated with McCune-Albright syndrome** ▶ page280  
 ○Taiji Iwasawa, Ryoji Tauchi, Tetsuya Ohara, Kosuke Takimura, Yuta Hosokawa,  
 Yosuke Takeichi  
 Department of Orthopedics & Spine surgery, Meijo Hospital
- SS3-14 Our experience in treating drop head syndrome** ▶ page281  
 ○Masatake Ino, Takachika Shimizu, Keisuke Fueki, Naofumi Toda,  
 Masatoshi Ono, Toshiki Tsukui  
 Department of Orthopaedic Surgery, Gunma Spine Center (Harunaso Hospital)

## Room 1

### 2nd day - Saturday, November 5th

#### Morning Seminar 1

8:00 ~ 9:00

Moderator : Shiro Imagama (Nagoya University)

**MS1-1 Surgical techniques to prevent complications in adult spinal deformity surgery** ▶ page182

○Katsutaka Yamada

Department of Orthopaedic Surgery, Yokohama Brain and Spine Center

**MS1-2 Tips for Preventing Complications of Scoliosis Surgery ~ When and how should surgery be performed?** ▶ page183

○Toshiaki Kotani

Dept. of Orthopedic Surgery, Seirei Sakura Citizen Hospital

#### Short Symposium 4 Conservative treatment/BasicScience 9:10 ~ 10:00

Moderator : Ryuichi Takemasa (Chigasaki Chuo Hospital)

Shoji Seki (University of Toyama)

**SS4-1 Analysis of visitors to the website for patients of the Japanese Scoliosis Society** ▶ page282

○Shuhei Iwata<sup>1,2</sup>, Toshiaki Kotani<sup>1</sup>, Toru Hirano<sup>3</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>, Shun Okuwaki<sup>1</sup>, Shuhei Ohyama<sup>1</sup>, Tsutomu Akazawa<sup>4</sup>, Kazuhide Inage<sup>2</sup>, Seiji Ohtori<sup>2</sup>

<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, Chiba University,

<sup>3</sup>Department of Orthopedic Surgery, Uonuma Kikan Hospital, Niigata University,

<sup>4</sup>Department of Orthopedic Surgery, St. Marianna University

**SS4-2 Not all patients who choose fulltime brace by themselves do not satisfactory continue brace therapy; comparing to nighttime brace** ▶ page283

○Kenji Kato, Nobuyuki Suzuki, Hideki Murakami

Department of Orthopaedic Surgery, Nagoya City University

- SS4-3 Attempt of new brace treatment for low back pain in patients with adolescent idiopathic scoliosis after skeletal maturity** ▶ page284
- Ryota Takatori<sup>1</sup>, Masateru Nagae<sup>1</sup>, Yuichi Shimizu<sup>1</sup>, Nobuaki Takeura<sup>1</sup>, Taisuke Watanabe<sup>2</sup>, Tomonori Itsuji<sup>3</sup>, Hitoshi Tonomura<sup>1</sup>, Kenji Takahashi<sup>1</sup>  
<sup>1</sup>Department of Orthopaedics, Graduate School of Medical Science, Kyoto Prefectural University of Medicine,  
<sup>2</sup>Department of Orthopedic Surgery, Akashi City Hospital,  
<sup>3</sup>Department of Orthopedic Surgery, Japanese Red Cross Kyoto Daini Hospital
- SS4-4 Survey of actual brace wearing time using a temperature logger for the treatment of adolescent idiopathic scoliosis** ▶ page285
- Hiromi Kimura<sup>1</sup>, Minako Osaki<sup>1</sup>, Tomoyuki Asada<sup>2</sup>, Toshiaki Kotani<sup>3</sup>, Tsuyoshi Sakuma<sup>3</sup>, Yasushi Iijima<sup>3</sup>, Shun Okuwaki<sup>3</sup>, Keita Nakayama<sup>2</sup>, Tsutomu Akazawa<sup>4</sup>, Shohei Minami<sup>3</sup>  
<sup>1</sup>Seirei Sakura Citizen Hospital, <sup>2</sup>University of Tsukuba Hospital,  
<sup>3</sup>Seirei Sakura Citizen Hospital, <sup>4</sup>St.Marianna University School of Medicine
- SS4-5 Effectiveness of physical therapy interventions for older patients with degenerative thoracolumbar kyphosis and chronic low back pain** ▶ page286
- Eriko Mochizuki<sup>1</sup>, Natsumi Shida<sup>1</sup>, Izumi Nobe<sup>1</sup>, Yuuta Shouzusima<sup>1</sup>, Hiromi Ataka<sup>2</sup>, Tetsuro Nakazawa<sup>2</sup>, Shou Hiramatsu<sup>2</sup>, Takaaki Tanno<sup>2</sup>  
<sup>1</sup>Matsudo Orthopaedic Hospital Rehabilitation Center,  
<sup>2</sup>Matsudo Orthopaedic Hospital Spine Center
- SS4-6 A study of the correction rate of CAD/CAM Chêneau and AC braces for adolescent idiopathic scoliosis** ▶ page287
- Taiji Iwasawa, Tetsuya Ohara, Ryoji Tauchi, Kosuke Takimura, Yuta Hosokawa, Yosuke Takeichi  
Department of Orthopaedics and Spine Surgery, Meijo Hospital
- SS4-7 An analysis of pediatric radiation exposure in patients with early onset scoliosis: a longitudinal single-center study** ▶ page288
- Ryo Sugawara<sup>1</sup>, Naoya Taki<sup>2</sup>, Saki Onuma<sup>2</sup>, Hideaki Watanabe<sup>2</sup>, Ichiro Kikkawa<sup>3</sup>, Katsushi Takeshita<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Jichi Medical University,  
<sup>2</sup>Department of Pediatric Orthopedics, Jichi Children's Medical Center Tochigi,  
<sup>3</sup>Department of Orthopedic Surgery, Nasu Central Hospital
- SS4-8 Chronological observation of congenital spinal deformity in mouse** ▶ page289
- Haruki Ueda, Takuya Iimura, Hiroshi Moridaira, Satoshi Inami, Hiroshi Taneichi  
Dokkyo Medical University

**SS4-9 Surgical outcome prediction using a four-dimensional planning simulation system with finite element analysis incorporating pre-bent rods in adolescent idiopathic scoliosis** ▶ page290

○Hiroyuki Tachi<sup>1,3</sup>, Koji Kato<sup>2</sup>, Yuichiro Abe<sup>3</sup>, Terufumi Kokabu<sup>1,3</sup>,  
Katsuhisa Yamada<sup>1</sup>, Norimasa Iwasaki<sup>1</sup>, Hideki Sudo<sup>1,4</sup>

<sup>1</sup>Department of Orthopedic, Hokkaido Univ.,

<sup>2</sup>Department of Systems Information Science, Future University Hakodate,

<sup>3</sup>Department of Orthopedic Surgery, Eniwa Hospital,

<sup>4</sup>Department of Advanced Medicine for Spine and Spinal Cord Disorders, Faculty of Medicine and Graduate School of Medicine, Hokkaido University

**SS4-10 Role of school-based screening in diagnosis of scoliosis in Shiga prefecture** ▶ page291

○Masako Tsukanaka<sup>1</sup>, Shimei Tanida<sup>1,2</sup>

<sup>1</sup>Department of orthopaedics, Shiga Medical Center for Children,

<sup>2</sup>Center for Spine Surgery, Shiga General Hospital

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**General Presentation 2-5 Evaluation/Concervative treatment 10:05 ~ 10:53**

Moderator : Masashi Miyazaki (Oita University)

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**02-5-1 Assessment of Lower Limb Muscle Tightness in Patients with Adolescent Idiopathic Scoliosis** ▶ page217

○Yuki Kusuhara<sup>1</sup>, Takuto Kurakawa<sup>2</sup>

<sup>1</sup>Department of Rehabilitation, Kurakawa Clinic,

<sup>2</sup>Department of Orthopedic Surgery, Kurakawa Clinic

**02-5-2 Development of a screening tool for scoliosis using a 3D body measurement suit (ZOZOSUIT (R))** ▶ page218

○Yusuke Ito, Nozomu Ohtomo, So Kato, Toru Doi, Yoshitaka Matsubayashi,  
Yuki Taniguchi, Yasushi Oshima, Ko Matsudaira, Sakae Tanaka

Department of Orthopaedic Surgery Faculty of Medicine, The University of Tokyo

**02-5-3 Improvement of an algorithm for using deep learning with three dimensional depth sensor imaging in scoliosis detection** ▶ page219

○Terufumi Kokabu<sup>1,6</sup>, Noriaki Kawakami<sup>2</sup>, Koki Uno<sup>3</sup>, Toshiaki Kotani<sup>4</sup>,  
Tepei Suzuki<sup>3</sup>, Hiroyuki Tachi<sup>5</sup>, Yuichiro Abe<sup>5</sup>, Norimasa Iwasaki<sup>1</sup>,  
Hideki Sudo<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Hokkaido University Hospital,

<sup>2</sup>Department of Orthopedic Surgery, Ichinomiyanishi Hospital,

<sup>3</sup>Department of Orthopaedic Surgery, National Hospital Organization, Kobe Medical Center,

<sup>4</sup>Department of Orthopaedic Surgery, Seirei Sakura Citizen Hospital,

<sup>5</sup>Department of Orthopaedic Surgery, Eniwa Hospital,

<sup>6</sup>Department of Orthopaedic Surgery, National Hospital Organization, Hokkaido Medical Center

**O2-5-4 Middle term results of a novel brace for treatment of the patients with adolescent idiopathic scoliosis** ▶ page220

○Kai Hirata<sup>1</sup>, Osamu Shirado<sup>2</sup>, Nobumasa Suzuki<sup>3</sup>, Takahiro Iida<sup>4</sup>, Masatoshi Inoue<sup>5</sup>, Jyunya Katayanagi<sup>6</sup>, Kazuyuki Matsumoto<sup>6</sup>, Kazuhide Inage<sup>7</sup>, Takuya Nikaido<sup>8</sup>, Masanori Abe<sup>9</sup>, Takuya Kigawa<sup>1</sup>, Tatsuya Endo<sup>2</sup>

<sup>1</sup>Nippon Sigmax Co., Ltd,

<sup>2</sup>Aizu Medical Center Orthopaedics & Spinal Surgery, Fukushima Medical University,

<sup>3</sup>Scoliosis Center, Medical Scanning Tokyo,

<sup>4</sup>Department of Orthopaedic Surgery Spine Center, Teine Keijinkai Hospital,

<sup>5</sup>Department of Orthopaedic Surgery, Chiba Saiseikai Narashino Hospital,

<sup>6</sup>Department of Orthopaedic Surgery, Dokkyo Medical University Saitama Medical center,

<sup>7</sup>Department of Orthopaedic Surgery, Chiba University,

<sup>8</sup>Department of Orthopaedic Surgery, Fukushima Medical University,

<sup>9</sup>Tohoku Prosthetic and Orthotic Co., Ltd

**O2-5-5 A comparative study on follow-up alone versus combined exercise therapy for adolescent idiopathic scoliosis** ▶ page221

○Ken Yamazaki<sup>1</sup>, Takayuki Kikuchi<sup>2</sup>, Satoshi Yoshida<sup>3</sup>

<sup>1</sup>Iwate Spine & Scoliosis center, <sup>2</sup>Kitakami Saiseikai Hospital,

<sup>3</sup>Yoshida Orthopedic Hospital

**O2-5-6 Negative Impact of Cast application on the chest cage in Progressive Early-onset Scoliosis** ▶ page222

○Noriaki Kawakami<sup>1</sup>, Toshiki Saito<sup>1</sup>, Tomoyuki Osato<sup>1</sup>, Naoko Miyashita<sup>1</sup>, Hiroko Matsumoto<sup>2</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Ichinomiyanishi Hospital,

<sup>2</sup>Department of Pediatric Orthopaedic, Harvard University

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**Symposium 3 Cutting Edge of Neuromuscular/Syndromic Scoliosis 11:00 ~ 12:00**

Moderator : Ichiro Kikkawa (Jichi Children's Medical Center Tochigi)

Teppei Suzuki (National Hospital Organization Kobe Medical Center)

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**S3-1 Current status and future perspective of flaccid neuromuscular scoliosis surgery** ▶ page154

○Masayuki Miyagi, Wataru Saito, Yusuke Mimura, Gen Inoue, Toshiyuki Nakazawa, Takayuki Imura, Eiki Shirasawa, Shinsuke Ikeda, Masashi Takaso

Department of Orthopaedic surgery, Kitasato University School of Medicine

**S3-2 Surgical treatment for Neuro-Muscular Scoliosis -preliminary report-** ▶ page155

○Taichi Tsuji, Kyotaro Ota, Hiroto Tachi  
Department of Orthopaedic & Spine Surgery ,Toyota Kosei Hospital

**S3-3 Surgical treatment of spinal deformity in patients with neuromuscular disease** ▶ page156

○Masatoshi Inoue<sup>1</sup>, Hidehisa Torikai<sup>1</sup>, Yoshinori Nakata<sup>3</sup>, Kazuhide Inage<sup>2</sup>,  
Seiji Ohtori<sup>2</sup>  
<sup>1</sup>Dept of Spine Surgery, Chiba Saisei-kai Narashino Hospital,  
<sup>2</sup>Dept of Orthopedic Surgery, Chiba University, <sup>3</sup>Nakata Orthopedic Clinic

**S3-4 Surgery for spinal deformity in "tweeners" with Marfan syndrome** ▶ page157

○Yuki Taniguchi<sup>1,8</sup>, Ryoji Tauchi<sup>2,8</sup>, Teppei Suzuki<sup>3,8</sup>, Kei Watanabe<sup>4,8</sup>,  
Takachika Shimizu<sup>5,8</sup>, Haruhisa Yanagida<sup>6,8</sup>, Yoshitaka Matsubayashi<sup>1,8</sup>,  
Noriaki Kawakami<sup>7,8</sup>  
<sup>1</sup>Department of Orthopedics, the University of Tokyo Hospital,  
<sup>2</sup>Department of Orthopedics, Meijo Hospital,  
<sup>3</sup>Department of Orthopedic Surgery, Kobe Medical Center,  
<sup>4</sup>Department of Orthopedic Surgery, Niigata University,  
<sup>5</sup>Department of Orthopaedic Surgery, Gunma Spine Center, Harunaso Hospital,  
<sup>6</sup>Department of Orthopaedic and Spine surgery, Fukuoka Children's Hospital,  
<sup>7</sup>Department of Orthopedic Surgery, Ichinomiya Nishi Hospital,  
<sup>8</sup>Japan Spinal Deformity Institute (JSDI)

**S3-5 Posterior two-staged surgery for rigid syndromic scoliosis in adolescence** ▶ page158

○Takachika Shimizu, Masatake Ino, Naofumi Toda, Masatoshi Ono,  
Toshiki Tsukui, Keisuke Fueki  
Department of Orthopaedic Surgery, Gunma Spine Center(Harunaso Hospital)

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**Luncheon Seminar 7**

**12:10 ~ 13:10**

Moderator : Hiroshi Taneichi (Dokkyo Medical University)

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**LS7 Various Usages of Pedicle Screws with Double Heads in Spinal Instrumentation Surgery** ▶ page178

○Toru Funayama  
Department of Orthopaedic Surgery, Faculty of Medicine, University of Tsukuba

Moderator : Motoki Iwasaki (Osaka Rosai Hospital)

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**EX2-1 Anterior surgery for TL/L curve of adolescent idiopathic scoliosis**

▶ page141

○Hiroshi Taneichi

Department of Orthopaedic Surgery, Dokkyo Medical University school of medicine

**EX2-2 Looking back on 10 years of adult spinal deformity surgical treatment**

▶ page142

○Yukihiro Matsuyama

Department of Orthopedic Surgery, Hamamatsu University School of Medicine

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**General Presentation 2-6 AIS surgery 2****14:25 ~ 15:21**

Moderator : Koji Kanzaki (Showa University Fujigaoka Hospital)

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**O2-6-1 Which sites should not be skipped in adolescent idiopathic scoliosis Lenke type 1A curves to prevent corrective loss?**

▶ page223

○Kaho Yanagisawa, Hiroki Oba, Shota Ikegami, Masashi Uehara,

Terue Hatakenaka, Takayuki Kamanaka, Yoshinari Miyaoka,

Daisuke Kurogouchi, Takuma Fukuzawa, Jun Takahashi

Department of Orthopaedic Surgery, Shinshu University School of Medicine

**O2-6-2 CT-based evaluation of vertebral rotation by Coplanar procedure for adolescent idiopathic scoliosis**

▶ page224

○Koji Akeda<sup>1</sup>, Tatsuhiko Fujiwara<sup>1</sup>, Hidetoshi Nojiri<sup>2</sup>, Katsutaka Yamada<sup>3</sup>,  
Tadao Morino<sup>4</sup>, Eiichiro Nakamura<sup>5</sup>, Hiroshi Moridaira<sup>6</sup>, Kazuyuki Ohtani<sup>7</sup>,  
Kenyu Itou<sup>8</sup>, Hiroshi Taneichi<sup>6</sup><sup>1</sup>Department of Orthopaedic Surgery, Mie University Graduate School of Medicine,<sup>2</sup>Department of Orthopaedic Surgery, Juntendo University School of Medicine,<sup>3</sup>Department of Orthopaedic Surgery, Yokohama Brain and Spine Center,<sup>4</sup>Department of Bone and Joint Surgery, Ehime University Graduate School of Medicine,<sup>5</sup>Department of Orthopaedic Surgery, University of Occupational and Environmental Health,<sup>6</sup>Department of Orthopaedic Surgery, Dokkyo University School of Medicine,<sup>7</sup>Department of Orthopaedic Surgery, Kudanzaka Hospital,<sup>8</sup>Department of Orthopaedic Surgery, Konan Kosei Hospital



**O2-6-3 Utility of Coplanar procedure for adolescent idiopathic scoliosis to restore physiologic thoracic kyphosis: multicenter study ▶ page225**

○Katsutaka Yamada<sup>1</sup>, Naoya Kondo<sup>1</sup>, Hiroshi Moridaira<sup>2</sup>, Hidekazu Arai<sup>2</sup>, Satoshi Takada<sup>2</sup>, Hidetoshi Nojiri<sup>3</sup>, Arihisa Shimura<sup>3</sup>, Tadao Morino<sup>4</sup>, Eiichiro Nakamura<sup>5</sup>, Masaki Tomori<sup>6</sup>, Kazuyuki Otani<sup>7</sup>, Koji Akeda<sup>8</sup>, Takuya Nagai<sup>9</sup>, Hiromitsu Toyoda<sup>10</sup>, Kenyu Ito<sup>11</sup>, Junnya Katayanagi<sup>12</sup>, Hiroshi Taneichi<sup>2</sup>

<sup>1</sup>Department of Orthopaedics Surgery, Yokohama Brain and Sine Center,

<sup>2</sup>Department of Orthopaedics Surgery, Dokkyo Medical University,

<sup>3</sup>Department of Orthopaedics Surgery, Juntendo University,

<sup>4</sup>Department of Orthopaedics Surgery, Ehime University,

<sup>5</sup>Department of Orthopaedics Surgery, University of Occupational and Environmental Health,

<sup>6</sup>Department of Orthopaedics Surgery, Saiseikai Kawaguchi General Hospital,

<sup>7</sup>Department of Orthopaedics Surgery, Kudanzaka Hospital,

<sup>8</sup>Department of Orthopaedics Surgery, Mie University,

<sup>9</sup>Department of Orthopaedics Surgery, Miyazaki University,

<sup>10</sup>Department of Orthopaedics Surgery, Osaka Metropolitan University,

<sup>11</sup>Department of Orthopedic Surgery, Konan Kosei Hospital,

<sup>12</sup>Department of Orthopedic Surgery, Dokkyo Medical University Saitama Medical Center

**O2-6-4 Efficacy of limited level Ponte osteotomies at apex of thoracic kyphosis for sagittal alignment restoration in AIS Lenke Type 1 and 2 ▶ page226**

○Shimei Tanida, Kazutaka Masamoto, Masako Tsukanaka  
Department of orthopaedic surgery of General Hospital / Shiga Medical Hospital for Children

**O2-6-5 What is the optimal selection criteria for LIV in selective thoracic fusion for Lenke 1/2 curve B or C? ▶ page227**

○Hiroishi Moridaira<sup>1</sup>, Hidekazu Arai<sup>1</sup>, Satoshi Takada<sup>1</sup>, Katsutaka Yamada<sup>2</sup>, Naoya Kondo<sup>2</sup>, Hidetoshi Nojiri<sup>3</sup>, Arihisa Shimura<sup>3</sup>, Tadao Morino<sup>4</sup>, Eiichirou Nakamura<sup>5</sup>, Masaki Tomori<sup>6</sup>, Kazuyuki Ootani<sup>7</sup>, Kouji Akeda<sup>8</sup>, Takuya Nagai<sup>9</sup>, Hiromitsu Toyoda<sup>10</sup>, Kenyu Ito<sup>11</sup>, Jyunya Katayanagi<sup>12</sup>, Hiroshi Taneichi<sup>1</sup>

<sup>1</sup>Department of Orthopedic Surgery, Dokkyo Medical University,

<sup>2</sup>Department of Orthopedic Surgery, Yokohama Brain and Spine Center,

<sup>3</sup>Department of Orthopedic Surgery, Juntendo University,

<sup>4</sup>Department of Orthopedic Surgery, Ehime University,

<sup>5</sup>Department of Orthopedic Surgery, University of Occupational and Environmental Health,

<sup>6</sup>Department of Orthopedic Surgery, Saiseikai Kawaguchi General Hospital,

<sup>7</sup>Department of Orthopedic Surgery, Kudanzaka Hospital,

<sup>8</sup>Department of Orthopedic Surgery, Mie University,

<sup>9</sup>Department of Orthopedic Surgery, University of Miyazaki,

<sup>10</sup>Department of Orthopedic Surgery, Osaka Metropolitan University,

<sup>11</sup>Department of Orthopedic Surgery, Konan Kosei Hospital,

<sup>12</sup>Department of Orthopedic Surgery, Dokkyo Medical University Saitama medical Center

**O2-6-6 Assessment of postoperative distal adding-on with intraoperative radiograph in adolescent idiopathic scoliosis Lenke type 1**

▶ page228

○ Takeshi Fujii<sup>1,2</sup>, Soya Kawabata<sup>1,3</sup>, Satoshi Suzuki<sup>1</sup>, Mitsuru Yagi<sup>1</sup>,  
Yohei Takahashi<sup>1</sup>, Osahiko Tsuji<sup>1</sup>, Satoshi Nori<sup>1</sup>, Narihito Nagoshi<sup>1</sup>,  
Morio Matsumoto<sup>1</sup>, Masaya Nakamura<sup>1</sup>, Kota Watanabe<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Keio University School of Medicine,

<sup>2</sup>Department of Orthopaedic Surgery, Tokyo Saiseikai Central Hospital,

<sup>3</sup>Department of Orthopaedic Surgery, Fujita Health University

**O2-6-7 Longitudinal evaluation of uninstrumented lumbar intervertebral disc 10 years after posterior spinal fusion for adolescent idiopathic scoliosis using MRI**

▶ page229

○ Satoshi Suzuki, Mitsuru Yagi, Masahiro Ozaki, Yohei Takahashi, Osahiko Tsuji,  
Narihito Nagoshi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
Department of Orthopaedic Surgery Keio University School of Medicine

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**Symposium 4 Expertise and Concept of Corrective Surgery 15:30 ~ 16:35**

Moderator : Masato Tanaka (Okayama Rosai Hospital)

Takanori Saito (Kansai Medical University)

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**S4-1 Efficacy of perioperative halo traction in the treatment of severe scoliosis**

▶ page159

○ Yosuke Takeichi, Tetsuya Ohara, Ryoji Tauchi, Kosuke Takimura,  
Yuta Hosokawa, Taiji Iwasawa  
Department of Orthopaedic Surgery and Spine Center, Meijo Hospital

**S4-2 Posterior correction surgery for adolescent idiopathic scoliosis type 2 using sublaminar tape on the concave side of the proximal thoracic curve**

▶ page160

○ Kota Watanabe, Mitsuru Yagi, Satoshi Suzuki, Masahiro Ozaki, Yohei Takahashi,  
Osahiko Tsuji, Narihito Nagoshi, Morio Matsumoto, Masaya Nakamura  
Department of Orthopedic Surgery, Keio University School of Medicine

**S4-3 Junctional failure and global alignment and proportion score after short segment fusion for adult spinal deformity -LLIF vs. 3CO-**

▶ page161

○ Hiroshi Moridaira, Satoshi Inami, Haruki Ueda, Hidekazu Arai, Tomoya Kantou,  
Satoshi Takada, Hiroshi Taneichi  
Department of Orthopedic Surgery, Dokkyo Medical University School of  
Medicine

**S4-4      Posterior column reconstruction can reduce rod breakage after 3  
column osteotomy for adult spinal deformity      ▶ page162**

○Yusuke Nakao, Shigeo Sano, Hiroyuki Nakarai  
Department of Orthopedic surgery, Spine Center, Sanraku Hospital

**S4-5      Strategy of Surgical Treatment for Dropped Head Syndrome      ▶ page163**

○Kuniyoshi Abumi<sup>1</sup>, Hitoshi Haba<sup>1</sup>, Manabu Itoh<sup>2</sup>, Masahiko Takahata<sup>3</sup>,  
Hideki Sudo<sup>3</sup>  
<sup>1</sup>Sapporo Orthopaedic Hospital,  
<sup>2</sup>Department of Orthopaedic Surgery, Hokkaido Medical Center,  
<sup>3</sup>Department of Orthopaedic Surgery, Hokkaido University Hospital

## Room 2

### 2nd day - Saturday, November 5th

#### Morning Seminar 2

8:00 ~ 9:00

Moderator : Ikuho Yonezawa (Sangubashi Spine Surgery Hospital)

#### MS2      **The surgical technique of pedicle subtraction osteotomy** ▶ page184

○Yusuke Nakao

Department of Orthopaedic and Spine Surgery, Sanraku Hospital

#### Symposium 2    **AIS Surgery -What can we do for shoulder imbalance?**    9:10 ~ 10:15

Moderator : Satoshi Inami (Dokkyo Medical University)

Daisuke Sakai (Tokai University)

#### S2-1      **Prediction of spontaneous correction of proximal thoracic curve and shoulder balance after posterior spinal fusion for Lenke-type 1 adolescent idiopathic scoliosis** ▶ page149

○Masayuki Ohashi<sup>1</sup>, Kei Watanabe<sup>1</sup>, Toru Hirano<sup>2</sup>, Kazuhiro Hasegawa<sup>3</sup>, Hideki Tashi<sup>1</sup>, Tatsuo Makino<sup>1</sup>, Keitaro Minato<sup>1</sup>, Hiroyuki Kawashima<sup>1</sup>

<sup>1</sup>Department of Orthopedic Surgery, Niigata University,

<sup>2</sup>Department of Orthopedic Surgery, Uonuma Kikan Hospital,

<sup>3</sup>Niigata Spine Surgery Center

#### S2-2      **The risk factors for postoperative shoulder imbalance in patients with AIS Lenke type 1** ▶ page150

○Tomohiro Banno, Yu Yamato, Tomohiko Hasegawa, Go Yoshida, Hideyuki Arima, Shin Oe, Koichiro Ide, Tomohiro Yamada, Kenta Kurosu, Keiichi Nakai, Yukihiro Matsuyama

Department of Orthopaedic Surgery, Hamamatsu University School of Medicine

#### S2-3      **Shoulder balance and neck tilt in patients with Lenke type 1 AIS after posterior spinal fusion at postoperative 10 years** ▶ page151

○Ayato Nohara<sup>1</sup>, Noriaki Kawakami<sup>2</sup>, Tetsuya Ohara<sup>3</sup>, Ryoji Tauchi<sup>3</sup>

<sup>1</sup>Department of Spine Surgery, JCHO Tokyo Shinjuku Medical Center,

<sup>2</sup>Department of Spine and Scoliosis Center, Ichinomiya Nishi Hospital,

<sup>3</sup>Department of Orthopedics and Spine Surgery, Meijo Hospital

**S2-4 Correlation between postoperative shoulder imbalance and distal adding-on and distal junctional kyphosis** ▶ page152

- Norihiro Isogai<sup>1,2,3</sup>, Mitsuru Yagi<sup>1,3</sup>, Satoshi Suzuki<sup>1,3</sup>, Nao Otomo<sup>1,2,3</sup>, Yoshihiro Maeda<sup>1,3</sup>, Yohei Takahashi<sup>1,3</sup>, Satoshi Nori<sup>1,3</sup>, Osahiko Tsuji<sup>1,3</sup>, Narihito Nagoshi<sup>1,3</sup>, Morio Matsumoto<sup>1,3</sup>, Masaya Nakamura<sup>1,3</sup>, Kota Watanabe<sup>1,3</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Keio University School of Medicine,  
<sup>2</sup>Department of Orthopaedic Surgery, School of Medicine, International University of Health and Welfare (IUHW) Mita Hospital,  
<sup>3</sup>Keio Spine Research Group

**S2-5 Can intraoperative T1-tilt changes predict postoperative shoulder balance in Lenke 2 AIS patients?** ▶ page153

- Akira Matsumura<sup>1</sup>, Takashi Namikawa<sup>1</sup>, Masatoshi Hoshino<sup>1</sup>, Hiroshi Taniwaki<sup>1</sup>, Yuki Kinoshita<sup>1</sup>, Jun Park<sup>1</sup>, Junichi Shirakawa<sup>1</sup>, Hiroaki Nakamura<sup>2</sup>  
<sup>1</sup>Scoliosis Center, Department of Orthopaedic Surgery, Osaka City General Hospital,  
<sup>2</sup>Department of Orthopaedic Surgery, Osaka Metropolitan University Graduate School of Medicine

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**Short Symposium 5 AIS surgery**

**11:00 ~ 11:55**

Moderator : Hiroshi Yamada (Wakayama Medical University)

Takuya Yamamoto (Japanese Red Cross Kagoshima Hospital)

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**SS5-1 Changes after the correction and fusion surgery for adult patients with idiopathic scoliosis Lenke 1** ▶ page292

- Yasuhiro Kamata<sup>1</sup>, Satoshi Suzuki<sup>2</sup>, Mitsuru Yagi<sup>2</sup>, Yohei Takahashi<sup>2</sup>, Satoshi Nori<sup>2</sup>, Osahiko Tsuji<sup>2</sup>, Narihito Nagoshi<sup>2</sup>, Morio Matsumoto<sup>2</sup>, Masaya Nakamura<sup>2</sup>, Kota Watanabe<sup>2</sup>  
<sup>1</sup>JCHO Saitama Medical Center,  
<sup>2</sup>Department of Orthopedic Surgery, Keio University School of Medicine

**SS5-2 Mid-term clinical outcome of short fusion strategy for Lenke type 1A adolescent idiopathic scoliosis** ▶ page293

- Soya Kawabata<sup>1</sup>, Takeshi Fujii<sup>2</sup>, Satoshi Suzuki<sup>3</sup>, Yohei Takahashi<sup>3</sup>, Masahiro Ozaki<sup>3</sup>, Osahiko Tsuji<sup>3</sup>, Narihito Nagoshi<sup>3</sup>, Nobuyuki Fujita<sup>1</sup>, Mitsuru Yagi<sup>3</sup>, Morio Matsumoto<sup>3</sup>, Masaya Nakamura<sup>3</sup>, Kota Watanabe<sup>3</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Fujita Health University,  
<sup>2</sup>Department of Orthopaedic Surgery, Tokyo Saiseikai Central Hospital,  
<sup>3</sup>Department of Orthopaedic Surgery, Keio University School of Medicine

**SS5-3 Investigative study of the sagittal alignment following selective thoracic fusion (STF) in Lenke 1 and 2 AIS** ▶ page294

- Jun Park<sup>1</sup>, Akira Matsumura<sup>1</sup>, Takashi Namikawa<sup>1</sup>, Masatoshi Hoshino<sup>1</sup>, Hiroshi Taniwaki<sup>1</sup>, Yuki Kinoshita<sup>1</sup>, Junichi Shirakawa<sup>1</sup>, Hiroaki Nakamura<sup>2</sup>  
<sup>1</sup>Department of Orthop. Surg., Osaka City General Hospital,  
<sup>2</sup>Dept. of Orthop. Surg., Osaka Metropolitan Univ.

**SS5-4 Postoperative dynamic change of coronal balance correlates to shoulder balance behavior after selective thoracic fusion for Lenke 1C curves** ▶ page295

- Masayuki Ishikawa, Kota Kojima, Takahiro Endo, Shunji Asamoto, Yasuyuki Fukui  
Makita General Hospital

**SS5-5 Postoperative distal junctional kyphosis and related factors in adolescent idiopathic scoliosis Lenke type 1B and 1C** ▶ page296

- Takeshi Fujii<sup>1,2</sup>, Satoshi Suzuki<sup>1</sup>, Mitsuru Yagi<sup>1</sup>, Yohei Takahashi<sup>1</sup>, Osahiko Tsuji<sup>1</sup>, Satoshi Nori<sup>1</sup>, Narihito Nagoshi<sup>1</sup>, Morio Matsumoto<sup>1</sup>, Masaya Nakamura<sup>1</sup>, Kota Watanabe<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Keio University School of Medicine,  
<sup>2</sup>Department of Orthopaedic Surgery, Tokyo Saiseikai Central Hospital

**SS5-6 Cervical Sagittal Alignment is Influenced by Changes in Thoracic and Lumbar Sagittal Alignments after Correction Surgery in Lenke type 6 AIS** ▶ page297

- Toshiki Okubo<sup>1,2,3</sup>, Satoshi Suzuki<sup>2,3</sup>, Masahiro Ozaki<sup>2,3</sup>, Youhei Takahashi<sup>2,3</sup>, Osahiko Tsuji<sup>2,3</sup>, Narihito Nagoshi<sup>2,3</sup>, Mitsuru Yagi<sup>2,3</sup>, Morio Matsumoto<sup>2,3</sup>, Masaya Nakamura<sup>2,3</sup>, Kota Watanabe<sup>2,3</sup>  
<sup>1</sup>Department of orthopaedics surgery, National hospital organization, Murayama medical center,  
<sup>2</sup>Department of orthopaedics surgery, Keio university school of medicine,  
<sup>3</sup>KSRG (Keio spine research group)

**SS5-7 Anterior spinal fusion for Lenke type 5C adolescent idiopathic scoliosis; Can the S-line predict postoperative proximal decompensation?** ▶ page298

- Yota Sakuma<sup>1</sup>, Ryoji Tominaga<sup>2</sup>, Yudai Hanyu<sup>1</sup>, Masumi Iwabuchi<sup>1</sup>, Osamu Shirado<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic and Spinal Surgery, Aizu Medical Center, Fukushima Medical University,  
<sup>2</sup>Department of Clinical Epidemiology, Graduate School of Medicine, Fukushima Medical University

- SS5-8 Factors causing failure of robotic-assisted pedicle screw placement in adolescent idiopathic scoliosis** ▶ page299
- Tsutomu Akazawa<sup>1,2</sup>, Yoshiaki Torii<sup>1,2</sup>, Jun Ueno<sup>1,2</sup>, Tasuku Umehara<sup>1,2</sup>, Masahiro Inuma<sup>1,2</sup>, Atsuhiro Yoshida<sup>1,2</sup>, Ken Tomochika<sup>1,2</sup>, Seiji Ohtori<sup>3</sup>, Hisateru Niki<sup>1</sup>
- <sup>1</sup>Department of Orthopaedic Surgery, St. Marianna University School of Medicine,  
<sup>2</sup>Spine Center, St. Marianna University Hospital,  
<sup>3</sup>Department of Orthopaedic Surgery, Graduate School of Medicine, Chiba University
- SS5-9 Analysis of accuracy of pedicle screw placement in dysplastic pedicles in adolescent idiopathic scoliosis using pedicle expansion technique** ▶ page300
- Masashi Miyazaki, Tetsutaro Abe, Noriaki Sako, Hiroshi Tsumura  
 Department of Orthopaedic Surgery, Oita University
- SS5-10 Can vertebral coplanar technique reduce concave screw density?** ▶ page301
- Masaki Tomori<sup>1</sup>, Yasushi Moridaira<sup>2</sup>, Hidekazu Arai<sup>2</sup>, Satoshi Takada<sup>2</sup>, Katsutaka Yamada<sup>3</sup>, Naoya Kondo<sup>3</sup>, Hidetoshi Nojiri<sup>4</sup>, Arihisa Shimura<sup>4</sup>, Tadao Morino<sup>5</sup>, Eiichiro Nakamura<sup>6</sup>, Kazuyuki Otani<sup>7</sup>, Koji Akeda<sup>8</sup>, Takuya Nagai<sup>9</sup>, Hiromitsu Toyoda<sup>10</sup>, Kenyu Ito<sup>10</sup>, Jyunya Katayanagi<sup>10</sup>
- <sup>1</sup>Saiseikai kawaguchi General Hospital,  
<sup>2</sup>Department of Orthopaedics, Dokkyo Medical University,  
<sup>3</sup>Department of Orthopaedics, Yokohama Brain and Spine center,  
<sup>4</sup>Department of Orthopaedics, Jyuntendo University,  
<sup>5</sup>Department of Orthopaedics, Ehime University,  
<sup>6</sup>Department of Orthopaedics, University of Occupational and Environmental Health,  
<sup>7</sup>Department of Orthopaedics, Kudanzaka Hospital,  
<sup>8</sup>Department of Orthopaedics, Mie University,  
<sup>9</sup>Department of Orthopaedics, Miyazaki University,  
<sup>10</sup>Department of Orthopaedics, Osaka Metropolitan University,  
<sup>11</sup>Department of Orthopedic Surgery, Konan Kosei Hospital,  
<sup>12</sup>Department of Orthopedic Surgery, Dokkyo Medical University Saitama medical Center
- SS5-11 Curve characteristics and surgical outcomes in scoliosis patients with mental disorder only and idiopathic scoliosis patients without mental disorder** ▶ page302
- Hiroki Oba, Shota Ikegami, Masashi Uehara, Takayuki Kamanaka, Terue Hatakenaka, Yosinari Miyaoka, Daisuke Kurogouchi, Takuma Fukuzawa, Jun Takahashi  
 Department of Orthopaedic Surgery, Shinshu University

Moderator : Tokumi Kanemura (Konan Kosei Hospital)

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**LS8      Robotic-assisted spine surgery for spinal deformity      ▶ page179**

○Tsutomu Akazawa

Department of Orthopaedic Surgery, St. Marianna University School of Medicine;  
Spine Center, St. Marianna University Hospital

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**General Presentation 2-7    Pediatric Spinal Deformity      13:20 ~ 14:16**

Moderator : Hideki Sudo (Hokkaido University)

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**02-7-1      Growth guidance surgery with fusion at upper foundation and segmental guidance screwing at lower foundation for early-onset scoliosis      ▶ page230**

○Masaaki Ito, Teppei Suzuki, Kohei Kawakita, Koki Uno

Department of Orthopaedic Surgery, National Hospital Organization Kobe Medical Center

**02-7-2      Risk Factors for Perioperative Cardiovascular Function Deterioration in Patients with Concurrent Scoliosis and Congenital Heart Disease      ▶ page231**○Yoshitaka Suzuki<sup>1,5</sup>, Toru Yamaguchi<sup>2,5</sup>, Tetsuya Ohara<sup>3,5</sup>, Haruhisa Yanagida<sup>2,5</sup>, Ryoji Tauchi<sup>3,5</sup>, Noriaki Kawakami<sup>4,5</sup><sup>1</sup>Department of Orthopedic Surgery, Nagoya Central Hospital,<sup>2</sup>Department of Orthopedic Surgery, Fukuoka Children's Hospital,<sup>3</sup>Department of Orthopedic and Spine Surgery, Meijo Hospital,<sup>4</sup>Department of Orthopedic Surgery, Ichinomiyanishi Hospital,<sup>5</sup>Japan Spinal Deformity Institute



### **02-7-3 Incidence and causes of instrument-related complications following primary definitive fusion for pediatric spine deformity**

▶ page232

- Satoru Demura<sup>1</sup>, Tetsuya Ohara<sup>2</sup>, Ryoji Tauchi<sup>2</sup>, Kosuke Takimura<sup>2</sup>, Kota Watanabe<sup>3</sup>, Satoshi Suzuki<sup>3</sup>, Haruhisa Yanagida<sup>4</sup>, Toru Yamaguchi<sup>4</sup>, Koki Uno<sup>5</sup>, Teppei Suzuki<sup>5</sup>, Toshiaki Kotani<sup>6</sup>, Keita Nakayama<sup>6</sup>, Kei Watanabe<sup>7</sup>, Yuki Taniguchi<sup>8</sup>, Noriaki Yokogawa<sup>9</sup>, Norihiro Oku<sup>9</sup>, Hiroyuki Tsuchiya<sup>9</sup>, Takuya Yamamoto<sup>10</sup>, Ichiro Kawamura<sup>11</sup>, Ryo Sugawara<sup>12</sup>, Ichiro Kikkawa<sup>12</sup>, Katsushi Takeshita<sup>12</sup>, Hideki Murakami<sup>13</sup>, Tatsuya Sato<sup>14</sup>, Kenta Fujiwara<sup>15</sup>, Tsutomu Akazawa<sup>16</sup>, Noriaki Kawakami<sup>17</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Kanazawa Univ.,

<sup>2</sup>Department of Orthopedics and Spine Surgery, Meijo Hospital,

<sup>3</sup>Department of Orthopaedic Surgery, Keio University,

<sup>4</sup>Department of Orthopaedic and Spine Surgery, Fukuoka Children's Hospital,

<sup>5</sup>Department of Orthopaedic Surgery, Kobe Medical Center,

<sup>6</sup>Department of Orthopaedic Surgery, Seirei Sakura Citizen Hospital,

<sup>7</sup>Department of Orthopaedic Surgery, Niigata University,

<sup>8</sup>Department of Orthopaedic Surgery, The University of Tokyo,

<sup>9</sup>Department of Orthopaedic Surgery, Kanazawa University,

<sup>10</sup>Department of Orthopaedic Surgery, Kagoshima Red cross Hospital,

<sup>11</sup>Department of Orthopaedic Surgery, Kagoshima University,

<sup>12</sup>Department of Orthopaedic Surgery, Jichi Medical University,

<sup>13</sup>Department of Orthopaedic Surgery, Iwate Medical University,

<sup>14</sup>Department of Orthopaedics, Juntendo University School of Medicine,

<sup>15</sup>Department of Orthopaedics, Osaka Medical and Pharmaceutical University,

<sup>16</sup>Department of Orthopaedic Surgery, St. Marianna University School of Medicine,

<sup>17</sup>Department of Orthopaedic Surgery, Ichinomiya Nishi Hospital.,

Japan Spinal Deformity Institute (JSDI)

### **02-7-4 Bend-back of the rod in adolescent idiopathic scoliosis surgery**

▶ page233

- Noriaki Yokogawa, Satoru Demura, Satoshi Kato, Motoya Kobayashi, Yohei Yamada, Satoshi Nagatani, Masafumi Kawai, Hiroyuki Tsuchiya  
Department of Orthopedic Surgery, Graduate School of Medical Sciences,  
Kanazawa University

### **02-7-5 Intraoperative blood loss in adolescent idiopathic scoliosis corrective surgery Is associated with thoracic factor**

▶ page234

- Yuta Hosokawa, Tetsuya Ohara, Ryoji Tauchi, Kosuke Takimura, Taiji Iwasawa, Yosuke Takeichi  
Department of Orthopaedics and Spine Surgery, Meijo Hospital

## **O2-7-6 Fusion only to L5 with severe scoliosis with cerebral palsy**

▶ page235

- Daiki Urayama<sup>1</sup>, Ayato Nohara<sup>1</sup>, Masaaki Iizuka<sup>1</sup>, Shunichi Kishida<sup>1</sup>, Hidemasa Umekouji<sup>1</sup>, Yuki Taniguchi<sup>2</sup>, Takashi Ono<sup>1</sup>  
<sup>1</sup>Department of Spinal Surgery, JCHO Tokyo Shinjuku Medical Center,  
<sup>2</sup>Department of Orthopedics, the University of Tokyo Hospital

## **O2-7-7 Health-related quality of life of adolescent idiopathic scoliosis patients 40 years or more after surgery**

▶ page236

- Tutomu Akazawa<sup>1,2</sup>, Toshiaki Kotani<sup>2</sup>, Tsuyoshi Sakuma<sup>2</sup>, Yasushi Iijima<sup>2</sup>, Yoshiaki Torii<sup>1</sup>, Jun Ueno<sup>1</sup>, Tasuku Umehara<sup>1</sup>, Masahiro Iinuma<sup>1</sup>, Atsuhiko Yoshida<sup>1</sup>, Ken Tomochika<sup>1</sup>, Hisateru Niki<sup>1</sup>, Kazuhide Inage<sup>3</sup>, Seiji Ohtori<sup>3</sup>, Shohei Minami<sup>2</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, St. Marianna University School of Medicine,  
<sup>2</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,  
<sup>3</sup>Department of Orthopaedic Surgery, Graduate School of Medicine, Chiba University

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### **Short Symposium 6 AIS/NMS Surgery**

**14:25 ~ 15:25**

Moderator : Masaaki Chazono (National Hospital Organization Utsunomiya National Hospital)  
Satoru Demura (Kanazawa University)

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## **SS6-1 Is occasional ALL rupture with posterior correction procedure for ASD specific phenomenon when combined with LLIF? -comparison to PLIF-**

▶ page303

- Takaya Imai<sup>1</sup>, Hiroki Takeda<sup>2</sup>, Yuichiro Abe<sup>2,3</sup>, Kurenai Hachiya<sup>1</sup>, Sota Nagai<sup>1</sup>, Soya Kawabata<sup>1</sup>, Nobuyuki Fujita<sup>1</sup>, Shinjiro Kaneko<sup>2</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, School of Medicine, Fujita Health University,  
<sup>2</sup>Department of Orthopaedic Surgery, School of Medicine, Fujita Health University,  
<sup>3</sup>Department of Orthopaedic Surgery, Eniwa Hospital

## **SS6-2 Risk factors and incidence of rod breakage at the lumbosacral junction in adult spinal deformity**

▶ page304

- Tsuyoshi Sakuma<sup>1</sup>, Toshiaki Kotani<sup>1</sup>, Yasushi Iijima<sup>1</sup>, Shun Okuwaki<sup>1</sup>, Shuhei Oyama<sup>1</sup>, Shuhei Iwata<sup>1</sup>, Tutomu Akazawa<sup>2</sup>, Seiji Ohtori<sup>3</sup>, Shohei Minami<sup>1</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,  
<sup>2</sup>Department of Orthopedic Surgery, St. Marianna University School of Medicine,  
<sup>3</sup>Department of Orthopedic Surgery, Graduate School of Medicine, Chiba University

- SS6-3 Implant Fracture in Adult Spinal Deformity Surgery with Multi-Rod Reinforcement** ▶ page305
- Yukitaka Nagamoto, Tomiya Matsumoto, Yoshifumi Takahashi, Masayuki Furuya, Motoki Iwasaki  
Department of Orthopaedic Surgery, Osaka Rosai Hospital
- SS6-4 Prospective investigation of perioperative complications after correction surgery for spinal deformity** ▶ page306
- Yohei Takahashi, Satoshi Suzuki, Masahiro Ozaki, Osahiko Tusji, Narihito Nagoshi, Mitsuru Yagi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
Department of Orthopaedic Surgery, Keio University
- SS6-5 Effect of vertebral level on screw insertion time and deviation rate in spinal deformity surgery using a spine robotic system** ▶ page307
- Jun Ueno, Tsutomu Akazawa, Yoshiaki Torii, Tasuku Umhara, Masahiro Inuma, Atuhiro Yoshida, Ken Tomochika, Hisateru Niki  
Department of Orthopaedic Surgery, St. Marianna University School of Medicine
- SS6-6 Pleural injury associated with an extrapleural approach to scoliosis does not decrease respiratory function** ▶ page308
- Kosuke Sato<sup>1</sup>, Toshiaki Kotani<sup>2</sup>, Tsuyoshi Sakuma<sup>2</sup>, Yasushi Iijima<sup>2</sup>, Tsutomu Akazawa<sup>3</sup>, Syohei Minami<sup>2</sup>, Seiji Ohtori<sup>4</sup>, Masao Koda<sup>1</sup>, Masashi Yamazaki<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, University of Tsukuba,  
<sup>2</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,  
<sup>3</sup>Department of Orthopaedic Surgery, St. Marianna University,  
<sup>4</sup>Department of Orthopedics Surgery, Chiba University
- SS6-7 Misplaced pedicle screws in the lumbo-sacrum necessitating reoperation because of neurological symptoms** ▶ page309
- Seiichi Odate<sup>1</sup>, Jitsuhiko Shikata<sup>1</sup>, Shimei Tanida<sup>2</sup>, Hiroaki Kimura<sup>3</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Gakkentoshi Hospital,  
<sup>2</sup>Department of Orthopedic Surgery, Shiga General Hospital,  
<sup>3</sup>Department of Orthopedic Surgery, Amagasaki General Medical Center
- SS6-8 Incidence and Risk factor of Unplanned Return to Operation Room in patients with Growing Rod Technique** ▶ page310
- Toru Yamaguchi, Haruhisa Yanagida  
Department of Orthopaedic and Spine surgery, Fukuoka Children's Hospital
- SS6-9 Surgical Complications for Patients with Cerebral Palsy** ▶ page311
- Hidemasa Umekoji, Ayato Nohara, Daiki Urayama, Masaaki Izuka, Shunichi Kishida, Takashi Ono  
Department of Spine Surgery, JCHO Tokyo Shinjyuku Medical Center

**SS6-10 Risk Factors for 1-year Mortality in Cerebral Palsy Patients: A Japanese regional population-based cohort study, the Shizuoka Study** ▶ page312

○Yoh Fujimoto<sup>1,2</sup>, Kazuharu Takikawa<sup>1</sup>

<sup>1</sup>Department of Pediatric Orthopedics, Shizuoka Children's Hospital,

<sup>2</sup>Graduate School of Public Health, Shizuoka Graduate University of Public Health

**SS6-11 Infection Risk Assessment in Pediatric Neuromuscular Scoliosis with Pelvic Fusion** ▶ page313

○Naoyuki Nakamura<sup>1</sup>, Yuichirou Kawabe<sup>2</sup>, Yoichi Aota<sup>3</sup>,

Masaaki Uesugi<sup>4</sup>, Katsutaka Yamada<sup>5</sup>

<sup>1</sup>Department of Orthopedic Surgery, Kanagawa Children's Medical Center,

<sup>2</sup>Department of Orthopedic Surgery, Yokohama City University,

<sup>3</sup>Department of Orthopedic Surgery, Saiwai hospital,

<sup>4</sup>Department of Orthopedic Surgery, Odawara municipal hospital,

<sup>5</sup>Department of Orthopedic Surgery, Yokohama brain and spine center

**SS6-12 Characteristics of difficult postoperative extubation cases in scoliosis surgery for severely disabled children** ▶ page314

○Mio Uchida<sup>1</sup>, Hiroki Oba<sup>1</sup>, Terue Hatakenaka<sup>1</sup>, Takuma Fukuzawa<sup>1</sup>,

Shota Ikegami<sup>1</sup>, Masashi Uehara<sup>1</sup>, Takayuki Kamanaka<sup>1</sup>, Yoshinari Miyaoka<sup>1</sup>,

Daisuke Kurogouchi<sup>1</sup>, Akari Shimizu<sup>2</sup>, Noriko Sakai<sup>3</sup>, Jun Takahashi<sup>1</sup>

<sup>1</sup>Department of orthopedics , shinshu university,

<sup>2</sup>Department of anesthesiology , shinshu university,

<sup>3</sup>orthopedics , Nagano Children`s Hospital

## Room 3

### 2nd day - Saturday, November 5th

#### Morning Seminar 3

8:00 ~ 9:00

Moderator : Gne Inoue (Kitasato University)

#### MS3 Feasibility of autologous transfusion and completely autologous fibrin glue in spine surgery ▶ page185

○Yuki Taniguchi<sup>1,2</sup>, Toshiyuki Ikeda<sup>3</sup>, Yoshitaka Matsubayashi<sup>2</sup>, So Kato<sup>2</sup>, Yasushi Oshima<sup>2</sup>, Sakae Tanaka<sup>2</sup>, Kazuhiko Fukatsu<sup>1</sup>

<sup>1</sup>Surgical Center, the University of Tokyo Hospital,

<sup>2</sup>Department of Orthopedics, the University of Tokyo Hospital,

<sup>3</sup>Department of Blood Transfusion, the University of Tokyo Hospital

#### Short Symposium 7 Muscle/Bone

9:10 ~ 10:00

Moderator : Hideki Nagashima (Tottori University)

Naobumi Hosogane (Kyorin University)

#### SS7-1 Examination of factors affecting dynamic postural control ability in patients with adolescent idiopathic scoliosis ▶ page315

○Yoshiaki Oda<sup>1</sup>, Haruo Misawa<sup>1</sup>, Tomoko Tetsunaga<sup>1</sup>, Kouji Uotani<sup>1</sup>, Hisakazu Shitozawa<sup>1</sup>, Masataka Ueda<sup>1</sup>, Ryouko Yamawaki<sup>2</sup>, Toshifumi Ozaki<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Okayama university Hospital,

<sup>2</sup>Department of Rehabilitation Medicine, Okayama University Hospital

#### SS7-2 Evaluation of bone mineral density (BMD) using CT value for adolescent idiopathic scoliosis -Difference between concave side and convex side- ▶ page316

○Tomoto Suzuki, Hiromori Sagae, Michiaki Takagi

Department of Orthopaedics, Yamagata University Faculty of Medicine

#### SS7-3 Assessment of abdominal trunk muscle strength using an innovative device in patients with pediatric scoliosis ▶ page317

○Yuki Kurokawa<sup>1,2</sup>, Satoru Demura<sup>2</sup>, Satoshi Kato<sup>1,2</sup>, Noriaki Yokogawa<sup>2</sup>, Norihiro Oku<sup>2</sup>, Hiroyuki Tsuchiya<sup>2</sup>

<sup>1</sup>Kanazawa University Hospital,

<sup>2</sup>Department of Orthopaedic Surgery, Graduate School of Medical Sciences, Kanazawa University

- SS7-4 Relationship between cervical sagittal alignment and skeletal muscle mass in patients with adolescent idiopathic scoliosis** ▶ page318
- Yusuke Mimura<sup>1</sup>, Masayuki Miyagi<sup>1</sup>, Yoshihide Tanaka<sup>1</sup>, Shinsuke Ikeda<sup>1</sup>, Eiki Shirasawa<sup>1</sup>, Wataru Saito<sup>2</sup>, Takayuki Imura<sup>1</sup>, Toshiyuki Nakazawa<sup>1</sup>, Gen Inoue<sup>1</sup>, Masashi Takaso<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Kitasato University, School of Medicine,  
<sup>2</sup>Kitasato University medical center
- SS7-5 Asymmetry of upper limb skeletal muscle in Lenke type 1A adolescent idiopathic scoliosis** ▶ page319
- Tetsuro Ohba, Nobuki Tanaka, Kotaro Oda, Marina Katsu, Hayato Takei, Hirotaka Haro  
 Department of Orthopaedic Surgery, University of Yamanashi
- SS7-6 Assessment of pre- and postoperative body composition with adolescent idiopathic scoliosis using bioimpedance analysis** ▶ page320
- Hiromori Sagae, Tomoto Suzuki, Michiaki Takagi  
 Department of Orthopaedic Surgery, Yamagata University Faculty of Medicine
- SS7-7 Correlation between Bone Turnover Markers, Vertebral Body Wedging and Cobb Angle in Adolescent Idiopathic Scoliosis** ▶ page321
- Yohshiro Nitobe, Kanichiro Wada, Gentaro Kumagai, Toru Asari, Yasuyuki Ishibashi  
 Department of Orthopaedic Surgery, Hirosaki University Graduate School of Medicine
- SS7-8 The prevalence and characteristics of sarcopenia and dynapenia in patients with spinal disorders** ▶ page322
- Yoshihide Tanaka<sup>1</sup>, Masayuki Miyagi<sup>1</sup>, Shinzi Takahashi<sup>2</sup>, Kazuhide Inage<sup>3</sup>, Masatoshi Hoshino<sup>2</sup>, Yusuke Hori<sup>2</sup>, Sumihisa Orita<sup>3</sup>, Gen Inoue<sup>1</sup>, Seizi Ootori<sup>3</sup>, Hiroaki Nakamura<sup>2</sup>, Masashi Takasou<sup>1</sup>  
<sup>1</sup>Department of Orthopedics, Kitasato University,  
<sup>2</sup>Department of Orthopedics, Osaka City University,  
<sup>3</sup>Department of Orthopedics, Chiba University
- SS7-9 Dysregulation of inflammatory pathways in adult spinal deformity patient with frailty** ▶ page323
- Tomohisa Tabata, Mitsuru Yagi, Satoshi Suzuki, Yohei Takahashi, Satoshi Nori, Osahiko Tsuji, Narihito Nagoshi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
 Department of Orthopedic Surgery, Keio University School of Medicine

**SS7-10 Analysis of bone union within the LLIF cage: Autologous bone/  
beta-TCP versus autologous bone/DBM** ▶ page324

○Masaaki Chazono, Takumi Ikuta, Shinji Saito  
Department of Orthopaedic Surgery, National Hospital Organization Utsunomiya  
National Hospital

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**General Presentation 2-8 AIS surgery 3** 10:05 ~ 11:01

Moderator : Katsumi Harimaya (Kyushu University Beppu Hospital)

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**O2-8-1 Analysis of Preoperative and Operative Factors Influencing  
Postoperative Shoulder Imbalance in Lenke Type 6C Adolescent  
Idiopathic Scoliosis** ▶ page237

○Teppei Suzuki, Koki Uno, Masaaki Ito, Kohei Kawakita  
Department of Orthopaedic Surgery, Kobe Medical Center

**O2-8-2 Morphological analysis of the lower lumbar and lumbo-sacral  
segment in adolescent idiopathic scoliosis with structural lumbar  
curve** ▶ page238

○Takashi Namikawa<sup>1</sup>, Akira Matsumura<sup>1</sup>, Masatoshi Hoshino<sup>1</sup>, Hiroshi Taniwaki<sup>1</sup>,  
Yuuki Kinoshita<sup>1</sup>, Jun Park<sup>2</sup>, Junichi Shirakawa<sup>1</sup>, Hiroaki Nakamura<sup>3</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Osaka City General Hospital,  
<sup>2</sup>Department of Orthopedic Surgery, Baba Memorial Hospital,  
<sup>3</sup>Department of Orthopedic Surgery, Osaka Metropolitan University

**O2-8-3 Setting UIV in adolescent idiopathic scoliosis (Lenke type 5)**  
▶ page239

○Kyotaro Ota, Hiroto Tachi, Taichi Tsuji  
Department of Orthopaedic & Spine surgery, Toyota Kosei Hospital

**O2-8-4 Surgical outcomes of posterior correction and fusion for Lenke type  
5 adolescent idiopathic scoliosis; surgical strategy to level L4 tilt**  
▶ page240

○Kei Watanabe<sup>1</sup>, Masayuki Ohashi<sup>1</sup>, Hideki Tashi<sup>1</sup>, Tatsuo Makino<sup>1</sup>,  
Keitaro Minato<sup>1</sup>, Hiroyuki Kawashima<sup>1</sup>, Kazuhiro Hasegawa<sup>3</sup>, Toru Hirano<sup>2</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Niigata University,  
<sup>2</sup>Department of Orthopedic Surgery, Uonuma Institute of Community Medicine,  
Niigata University Medical and Dental Hospital,  
<sup>3</sup>Niigata Spine Center

**O2-8-5 Three-dimensional analysis of lumbar intervertebral discs in Lenke  
type 5 patients with adolescent idiopathic scoliosis** ▶ page241

○Shoji Seki<sup>1</sup>, Hiroto Makino<sup>1</sup>, Katsuhiko Kamei<sup>1</sup>, Hayato Futakawa<sup>1</sup>,  
Taketoshi Yasuda<sup>1</sup>, Kenta Watanabe<sup>1</sup>, Yasuhito Yahara<sup>2</sup>, Yoshiharu Kawaguchi<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, University of Toyama,  
<sup>2</sup>Department of Immunology and Cell Biology, University of Osaka

**O2-8-6 Surgical results of posterior correction and fusion surgery for adult patients with residual adolescent idiopathic scoliosis Lenke type 5**

▶ page242

- Reo Shibata, Mitsuru Yagi, Satoshi Suzuki, Yohei Takahashi, Osahiko Tsuji, Satoshi Nori, Narihito Nagoshi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe  
Department of Orthopaedic surgery, Keio university

**O2-8-7 The risk factors for persistent coronal imbalance for idiopathic scoliosis with thoracolumbar/lumbar curve**

▶ page243

- Tomohiro Banno<sup>1</sup>, Yu Yamato<sup>1</sup>, Hiroki Oba<sup>2</sup>, Tetsuro Ohba<sup>3</sup>, Tomohiko Hasegawa<sup>1</sup>, Go Yoshida<sup>1</sup>, Hideyuki Arima<sup>1</sup>, Shin Oe<sup>1</sup>, Koichiro Ide<sup>1</sup>, Tomohiro Yamada<sup>1</sup>, Jun Takahashi<sup>2</sup>, Hirotaka Haro<sup>3</sup>, Yukihiro Matsuyama<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Hamamatsu University School of Medicine,  
<sup>2</sup>Department of Orthopaedic Surgery, Shinshu University,  
<sup>3</sup>Department of Orthopaedic Surgery, Yamanashi University

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**Short Symposium 8 Surgery/Anatomy**

**11:10 ~ 12:00**

Moderator : Toru Hirano (Uonuma Kikan Hospital)  
Kanichiro Wada (Hirosaki University)

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**SS8-1 Factors of development and progression in postoperative scoliosis after cardiac surgery for congenital heart disease**

▶ page325

- Ichiro Kawamura<sup>1</sup>, Hiroyuki Tominaga<sup>1</sup>, Hiroto Tokumoto<sup>1</sup>, Daisuke Sakuma<sup>1</sup>, Masato Sanada<sup>1</sup>, Takuya Yamamoto<sup>2</sup>, Noboru Taniguchi<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Graduate School of Medicine and Dental Science, Kagoshima University,  
<sup>2</sup>Department of Orthopaedic Surgery, Japanese Red Cross Kagoshima Hospital

**SS8-2 In vivo deformation of anatomically prebent rods in thoracic adolescent idiopathic scoliosis**

▶ page326

- Hideki Sudo<sup>1</sup>, Hiroyuki Tachi<sup>1,2</sup>, Yuichiro Abe<sup>2</sup>, Terufumi Kokabu<sup>3</sup>, Katsuhisa Yamada<sup>1</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Hokkaido University,  
<sup>2</sup>Department of Orthopaedic Surgery, Eniwa Hospital,  
<sup>3</sup>Department of Orthopaedic Surgery, Hokkaido Medical Center

**SS8-3 Evaluations of Shoulder Balance in Adults Spinal Deformity Patients undergoing corrective surgery**

▶ page327

- Masahiko Furuya, Masaaki Ito, Keita Nakashima, Teppei Suzuki, Kohei Kawakita, Koki Uno  
Department of Orthopedic Surgery, Kobe Medical Center



- SS8-4 Changes of distance between median arcuate ligament and origin of celiac artery in the patients after corrective spine surgery** ▶ page328
- Shuhei Ohyama<sup>1</sup>, Toshiaki Kotani<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>, Shohei Minami<sup>1</sup>, Seiji Ohtori<sup>2</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,  
<sup>2</sup>Department of Orthopaedic Surgery, Graduate School of Medicine, Chiba University
- SS8-5 Clinical and radiological evaluation of growing rod technique for neuromuscular scoliosis** ▶ page329
- Yoshihide Tanaka, Gen Inoue, Masayuki Miyagi, Wataru Saito, Takayuki Imura, Toshiyuki Nakazawa, Shinsuke Ikeda, Yusuke Mimura, Masashi Takaso  
 Department of Orthopaedic Surgery, Kitasato University School of Medicine
- SS8-6 Adolescent idiopathic scoliosis patients are associated with flat thorax and tend to have shorter distances between sternum and heart** ▶ page330
- Yuki Mihara<sup>1,2</sup>, Tomohiko Hasegawa<sup>2</sup>, Yu Yamato<sup>2</sup>, Go Yoshida<sup>2</sup>, Tomohiro Banno<sup>2</sup>, Hideyuki Arima<sup>2</sup>, Shin Oe<sup>2</sup>, Koichiro Ide<sup>2</sup>, Tomohiro Yamada<sup>2</sup>, Kenta Kurosu<sup>2</sup>, Keiichi Nakai<sup>2</sup>, Yasutsugu Yukawa<sup>1</sup>, Fumihiko Kato<sup>1</sup>, Yukihiro Matsuyama<sup>2</sup>  
<sup>1</sup>Department of Orthopedic surgery, Spine and spinal cord surgery center, Nagoya Kyoritsu Hospital,  
<sup>2</sup>Department of Orthopedics surgery, Hamamatsu University School of Medicine
- SS8-7 Association between thoracic kyphosis and thoracic cage anterior-posterior diameter in adolescent idiopathic scoliosis underwent posterior spine surgery** ▶ page331
- Kanichiro Wada, Gentaro Kumagai, Toru Asari, Yoshiro Nitobe, Yasuyuki Ishibashi  
 Department of Orthopaedic Surgery, Hirosaki University Graduate School of Medicine
- SS8-8 Deformation of rib cage in patients with adolescent idiopathic scoliosis -Upper rib cage impact on shoulder imbalance-** ▶ page332
- Yoko Ishikawa<sup>1,2</sup>, Yuichirou Abe<sup>1</sup>, Terufumi Kokabu<sup>1,2</sup>, Hisataka Suzuki<sup>1,2</sup>, Masato Uematsu<sup>1</sup>, Hiroyuki Tachi<sup>1,2</sup>, Yasushi Yanagibashi<sup>1</sup>, Takahiko Hyakumachi<sup>1</sup>, Katsuhisa Yamada<sup>2</sup>, Hideki Sudo<sup>2</sup>, Norimasa Iwasaki<sup>2</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Wajyo-kai Eniwa hospital,  
<sup>2</sup>Department of Orthopaedic Surgery, Hokkaido University

**SS8-9 Measurement of postoperative apical vertebral rotation using radiographic images - Quantitative evaluation using inverse trigonometric functions** ▶ page333

○Shun Okuwaki<sup>1</sup>, Toshiaki Kotani<sup>1</sup>, Tsuyoshi Sakuma<sup>1</sup>, Yasushi Iijima<sup>1</sup>,  
Shuhei Oyama<sup>1</sup>, Shuhei Iwata<sup>1</sup>, Tsutomu Akazawa<sup>2</sup>, Shohei Minami<sup>1</sup>,  
Seiji Ohtori<sup>3</sup>, Masashi Yamazaki<sup>4</sup>

<sup>1</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,

<sup>2</sup>Department of Orthopedic Surgery, St. Marianna University School of Medicine,

<sup>3</sup>Department of Orthopedic Surgery, Graduate School of Medicine, Chiba University,

<sup>4</sup>Department of Orthopedic Surgery, Faculty of Medicine, University of Tsukuba

**SS8-10 Correction of vertebral column rotation in adult spinal deformity** ▶ page334

○Hiroto Tachi, Kyotaro Ota, Taichi Tsuji

Department of Orthopaedic & Spine Surgery, Toyota Kosei Hospital

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**Luncheon Seminar 9**

**12:10 ~ 13:10**

Moderator : Naoyuki Nakamura (Kanagawa Children's Medical Center)

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**LS9-1 Surgical strategy for optimal 3-dimensional correction of selective thoracic fusion in Adolescent Idiopathic Scoliosis** ▶ page180

○Akira Matsumura

Scoliosis Center, Department of Orthopaedic Surgery, Osaka City General Hospital

**LS9-2 The sagittal plane in idiopathic scoliosis -Current concepts in surgical treatment-** ▶ page181

○Ryan Goodwin

Section head, Orthopaedics surgery, Cleveland Clinic Children's

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**Short Symposium 9 Spinopelvic/Lower Extrimity Alignment** **14:25 ~ 15:25**

Moderator : Tomoaki Toyone (Showa University)

Yuichiro Abe (Wajyo-kai Eniwa Hospital)

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**SS9-1 The relation of pelvic parameter and spinal alignment in post-surgical AIS Lenke type 5 patient** ▶ page335

○Takahiro Kitagawa, Satoshi Suzuki, Yohei Takahashi, Mitsuru Yagi,  
Masahiro Ozaki, Osahiko Tsuji, Narihito Nagoshi, Morio Matsumoto,  
Masaya Nakamura, Kota Watanabe

Department of Orthopaedic Surgery, Keio University School of Medicine

- SS9-2 Does the sacral tilt in idiopathic scoliosis Lenke type 5 change before and after surgery? ▶ page336**
- Satoshi Takada, Satoshi Inami, Hiroshi Moridaira, Haruki Ueda, Hidekazu Arai, Tomoya Kanto, Hiroshi Taneichi  
Department of orthopedic surgery, Dokkyo medical university
- SS9-3 Postoperative change in Lower Lunbar and Sacral parameters in Lenke5C patiants ▶ page337**
- Nobuki Tanaka, Tetsurou Ooba, Hirotaka Haro  
Department of Yamanashi Universuty
- SS9-4 Does the lumbosacral transitional vertebrae affect postoperative outcomes of Lenke type 5 idiopathic scoliosis? ▶ page338**
- Hiroto Makino, Shoji Seki, Hayato Futakawa, Katsuhiko Kamei, Yoshiharu Kawaguchi  
Department of Orthopaedic Surgery, University of Toyama
- SS9-5 Lumbar Spondylolysis Associated with Adolescent Idiopathic Scoliosis is More Common in the Upper Lumbar Level than Usual ▶ page339**
- Takahiro Sunami<sup>1,2,9,10</sup>, Toshiaki Kotani<sup>2,10</sup>, Yuki Taniguchi<sup>3,10</sup>, Ryo Sugawara<sup>4,10</sup>, Katsushi Takeshita<sup>4,10</sup>, Satoru Demura<sup>5,10</sup>, Takuya Yamamoto<sup>6,10</sup>, Tsuyoshi Sakuma<sup>2,10</sup>, Yasushi Iijima<sup>2,10</sup>, Tsutomu Akazawa<sup>7,10</sup>, Shohei Minami<sup>2,10</sup>, Seiji Ohtori<sup>8</sup>, Masashi Yamazaki<sup>9</sup>  
<sup>1</sup>Department of Orthopedic Surgery, Tsukuba Central Hospital,  
<sup>2</sup>Department of Orthopedic Surgery, Seirei Sakura Citizen Hospital,  
<sup>3</sup>Department of Orthopedic Surgery, University of Tokyo,  
<sup>4</sup>Department of Orthopedic Surgery, Jichi Medical University,  
<sup>5</sup>Department of Orthopedic Surgery, Kanazawa University,  
<sup>6</sup>Department of Orthopedic Surgery, Japanese Red Cross Society Kagoshima Hospital,  
<sup>7</sup>Department of Orthopedic Surgery, St. Marianna University School of Medicine,  
<sup>8</sup>Department of Orthopedic Surgery, Chiba University,  
<sup>9</sup>Department of Orthopedic Surgery, University of Tsukuba,  
<sup>10</sup>Japan Spinal Deformity Institute
- SS9-6 Does the upper line of the sacral ala approximate a horizontal line in standing full spine X-ray of idiopathic scoliosis? ▶ page340**
- Masaki Ikejiri, Hideki Shigematsu, Sachiko Kawasaki, Yuma Suga, Yusuke Yamamoto, Yasuhito Tanaka  
Department of Orthopedics, Nara Medical University

**SS9-7 Does a functional leg length discrepancy affect an anatomical leg length discrepancy? - investigation in adolescent idiopathic scoliosis patients-** ▶ page341

- Yuma Suga, Hideki Shigematsu, Sachiko Kawasaki, Masaki Ikejiri, Yasuhito Tanaka  
Department of Orthopedics and Surgery, Nara Medical University

**SS9-8 Examination of knee flexion angle prediction method using the angle of the proximal femur** ▶ page342

- Kenyu Ito<sup>1</sup>, Kazuhiro Hasegawa<sup>2,17</sup>, Kazuyuki Otani<sup>3,17</sup>, Shun Hatsushikano<sup>4</sup>, Tokumi Kanemura<sup>1,17</sup>, Yu Yamato<sup>5,17</sup>, Jun Mizutani<sup>6,17</sup>, Satoshi Inami<sup>7,17</sup>, Takachika Shimizu<sup>8,17</sup>, Ryuichi Takemasa<sup>9,17</sup>, Yusuke Nakao<sup>10,17</sup>, Kentaro Fukuda<sup>11,17</sup>, Naobumi Hosogane<sup>12,17</sup>, Yoshitaka Matsubayashi<sup>13,17</sup>, Naohisa Miyakoshi<sup>14,17</sup>, Kei Watanabe<sup>15,17</sup>, Motoki Iwasaki<sup>16,17</sup>  
<sup>1</sup>Department of Orthopaedic Surgery, Konan Kosei Hospital,  
<sup>2</sup>Niigata Spine Surgery Center,  
<sup>3</sup>Department of Orthopaedic Surgery, Kudanzaka Hospital,  
<sup>4</sup>Department of Radiological Technology, School of Health Science, University of Niigata,  
<sup>5</sup>Division of Geriatric Musculoskeletal Health, Department of Orthopaedic Surgery, Hamamatsu University School of Medicine,  
<sup>6</sup>Department of Orthopaedic Surgery, Tokyo Women's Medical University Yachiyo Medical Center,  
<sup>7</sup>Department of Orthopaedic Surgery, Dokkyo Medical University,  
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