

# Program (Oral Presentation)

## Friday, March 10

Meeting Room (503), 5F, Conference Center, PACIFICO Yokohama

### Opening Remarks

8:00-8:05

13th Annual Meeting of CSRS-AP Local Host: Hisanori Mihara (Japan)

### Free Paper 1 LAP Motion

8:05-8:54

Moderators: Tateru Shiraishi (Japan)  
Hiroaki Nakashima (Japan)

- F1-1 Motion capture-based three-dimensional range of motion measurement in cervical laminoplasty patients (Japan) So Kato, Sayaka Fujiwara, Nozomu Ohtomo, Yukimasa Yamato, Katsuyuku Sasaki, Jim Yu, Toru Doi, Yuki Taniguchi, Yoshitaka Matsubayashi, Sakae Tanaka, Yasushi Oshima
- F1-2 Modified C3 laminoplasty or laminectomy for preservation of range of motion in cervical laminoplasty (Japan) Takafumi Inoue, Hidetoshi Sato, Nobuyuki Shimokawa
- F1-3 Does Fatty Infiltration of Deep Posterior Cervical Paraspinal Muscles Affect Surgical Outcomes Following Cervical Laminoplasty? (Japan) Fumihiko Oguchi, Toru Doi, Nozomu Ohtomo, Koji Nakajima, So Kato, Yoshitaka Matsubayashi, Yuki Taniguchi, Ko Matsudaira, Hiroyuki Oka, Sakae Tanaka, Yasushi Oshima
- F1-4 Anatomical characteristics of rotator cervicis and intervertebral joint capsule which help surgeons to reduce surgical invasiveness to intervertebral joint in lateral exposure of posterior cervical spine - A cadaveric study- (Japan) Kazuya Kitamura, Ryoma Aoyama, Akimasa Yasuda, Naoki Yamaguchi, Atsuto Umei, Yohei Kurita, Shin Tominaga, Yasushi Kobayashi, Susumu Matsukuma, Kazuhiro Chiba
- F1-5 Long-term clinical outcome of degenerative cervical myelopathy underwent posterior open-door laminoplasty with the preservation of unilateral muscle-ligament complex: a single-center data from China [Video] (China) Wu Haosen, Feifei Zhou
- F1-6 Clinical and radiographic outcomes of modified unilateral open-door laminoplasty with posterior muscular-ligament complex preservation for cervical spondylotic myelopathy (China) Chao Chen, Yong Gao, Gao Yang
- F1-7 The exercise habit lead better operative outcome among patients underwent cervical posterior surgery (Japan) Shin Oe, Kenta Kurosu, Rina Madelar, Go Yoshida, Yu Yamato, Tomohiko Hasegawa, Tomohiro Banno, Hideyuki Arima, Koichiro Ide, Tomohiro Yamada, Yukihiro Matsuyama

### Free Paper 2 Posterior Device

9:00-9:49

Moderators: Morio Matsumoto (Japan)  
Woo-Kie Min (South Korea)

- F2-1 Long screws for spacer fixation without lateral mass drilling in double door cervical laminoplasty (Tiptoe Technique) (Japan) Ivan Sekiguchi, Naoki Ishida
- F2-2 Hydroxyapatite spacers without sutures demonstrate sufficient bone bonding in cervical laminoplasty (Japan) Nobuhiro Tanaka, Toshio Nakamae, Kazuyoshi Nakanishi, Naosuke Kamei, Yoshinori Fujimoto, Kiyotaka Yamada, Norifumi Suga, Akiko Matsumoto, Seigo Nakamura, Takaaki Kobayashi, Toshiaki Tashima

- F2-3 Surgical result of improved ceramic spacer in double door cervical laminoplasty  
(Japan) Takeshi Aoyama, Naoshi Obara, Hirokazu Furukawa, Takahiro Iida
- F2-4 Clinical comparison of cervical laminoplasty with titanium plate spacer and hydroxyapatite block spacer: Is plate spacer more valuable?  
(Japan) Yujiro Kagami, Hiroaki Nakashima, Naoki Segi, Ryuichi Shinjo, Shiro Imagama
- F2-5 Cervical Laminoplasty with Foraminotomy using Lynx plate  
(Japan) Hirokatsu Sawada, Hiroshi Uei, Koji Matsumoto, Kentaro Sato, Sosuke Saito, Satoshi Suzuki, Yuya Miyanaga, Kazuyoshi Nakanishi
- F2-6 Is it necessary to cross the cervicothoracic junction in posterior cervical decompression and fusion for multilevel degenerative cervical spine disease?  
(China) Honghao Yang, Jixuan Huang, Yong Hai, Jincal Yang, Peng Yin
- F2-7 Relative risks and benefits of crossing the cervicothoracic junction during multilevel posterior cervical fusion: A multicenter cohort  
(Japan) Naoki Okamoto, So Kato, Toru Doi, Yoshitaka Matsubayashi, Yuki Taniguchi, Yuichi Yoshida, Hiroyuki Nakarai, Keiichiro Tozawa, Katsuyuki Sasaki, Sakae Tanaka, Yasushi Oshima

### Free Paper 3 LAP Complication

9:55-10:44

Moderators: Yasutsugu Yukawa (Japan)  
Ryoma Aoyama (Japan)

- F3-1 Trends in Cervical Laminoplasty and Early Postoperative Complications, 2008-2017  
(Japan) Eiji Takasawa, Yoichi Iizuka, Hirokazu Inoue, Hiroyuki Sonoda, Tsuyoshi Ara, Takashi Nakajima, Hidekazu Arai, Toru Funayama, Ryoichi Kobayashi, Masaaki Chazono, Hirotaka Chikuda
- F3-2 Preoperative frailty is a potential independent risk factor for poor surgical outcomes after posterior decompression surgery in patients with cervical spondylotic myelopathy  
(Japan) Atsuto Umei, Kazuya Kitamura, Akimasa Yasuda, Naoki Yamaguchi, Yohei Kurita, Takahiro Ishizaka, Takahiro Nakagawa, Kazuhiro Chiba
- F3-3 Radiographic and Functional Features of Ossification of the Nuchal Ligament in Patients with Degenerative Cervical Myelopathy after Laminoplasty  
[Video] (China) Chong Chen, Yunbing Chang, Wenlin Ye, Yifan Chen, Guoyan Liang, Xiaoqing Zheng, Yongyu Ye
- F3-4 The comparison of hinge stability and axial pain in the early postoperative period of various spacers in the cervical laminoplasty  
(Japan) Yoriko Toten, Yasushi Fujiwara, Makoto Nishimori, Yutaka Kadonishi, Ryou Ota, Shinji Kotaka, Yuki Ota, Kazutoshi Iwasa, Hiroki Fukui, Hideki Manabe
- F3-5 An experimental rat model of C5 palsy following posterior decompression surgery of the cervical spine  
(Japan) Atsushi Yokota, Takashi Fujishiro, Yoshitada Usami, Masashi Neo
- F3-6 Posterior expansive foraminotomy combined with pedicle screw fixation can decrease the incidence of C5 palsy in complex cervical spine surgery in patients with severe myeloradiculopathy  
(Egypt) Mahmoud Hussein Abdou, Byung Ho Lee, Kyung-Soo Suk
- F3-7 Does C3-dome hybrid open-door laminoplasty reduce post-operative adjacent segment disease and C5-palsy? A retrospective cohort study of post-operative clinical and radiological outcomes in patients undergoing a novel technique  
(Singapore) Gabriel Liu, Jun-Hao Tan

### Invited Lecture 1

11:25-11:55

Moderator: Hisanori Mihara (Japan)

IL1 Evolution of Cervical Spine Deformity - The Devil is in the Detail  
(Germany) [Heiko Koller](#)

## Introduction of CSRS-ES

11:55-12:00

[Heiko Koller](#) (Germany)

## Luncheon Seminar 1

12:20-13:20

Moderator: [Takachika Shimizu](#) (Japan)

LS1 Advanced cervical posterior instrumentation - iCT-navigation-robot and SYMPHONY™ -  
(Japan) [Masashi Neo](#)

## Invited Lecture 2

13:30-14:00

Moderator: [Anna Mac Dowall](#) (Sweden)

IL2 A journey into the understanding of cervical laminoplasty  
(Singapore) [Gabriel Liu](#)

## Introduction of CSRS-AP

14:00-14:05

[Gabriel Liu](#) (Singapore)

## Free Paper 4 ACDF

14:10-14:59

Moderators: [Toshihiro Takami](#) (Japan)  
[Gabriel Liu](#) (Singapore)

F4-1 Evaluation of clinical safety and efficiency of ultrasonic bone curette used in anterior cervical discectomy  
[Video] and fusion surgery  
(China) [Haijiao wang](#)

F4-2 Establishing a relationship using CT between Facet Distraction and clinical outcomes after ACDF  
(South Korea) [JooYoung Lee](#), Dong-Ho Lee, Jae Hwan Cho, Chang Ju Hwang, Hyung Rae Lee, Choon Sung Lee

F4-3 A propensity score-matched analysis of clinical outcomes between single- and multi-level intervertebral decompression for cervical radiculopathy  
(Japan) [Masahito Oshina](#), Akihiro Sakata, Yuki Ishikawa, Yohei Miyamoto, Takashi Yamada, Takashi Ohe, Yasushi Oshima

F4-4 A retrospective clinical trial to compare the safety and effectiveness of PEEK cage and autologous iliac bone with bioactive glass ceramic cage in single level ACDF  
(South Korea) [Yongho Lee](#), Dongchan Eun, Jiwon Kwon, Byungho Lee, Kyungsoo Suk

F4-5 Titanium-interlayer Mediated Hydroxyapatite Coating on Polyetheretherketone: A Prospective Study in  
[Video] Patients with Single-level Cervical Degenerative Disc Disease  
(China) [Ce Zhu](#), Ganjun Feng, Limin Liu, Yueming Song

F4-6 Clinical outcomes of locking stand-alone cage combined with anterior cervical discectomy and fusion for  
[Video] the treatment of cervical fractures in ankylosing spondylitis  
(China) [Yong Hu](#), Jianbin Zhong

- F4-7 PEEK cages versus Titanium coated PEEK cages in single level anterior cervical fusion - a randomized controlled study  
(Germany) [Johannes Schroeder](#), Thomas Krampulz, Sonundita K Bajaj, Arnd-Georg Hellwig, Michael Winking

## Free Paper 5 Corpectomy

15:05-15:54

Moderators: [Kenichiro Sakai](#) (Japan)  
[Masao Koda](#) (Japan)

- F5-1 Biomechanics of a Novel Artificial Cervical Vertebra from an in vivo Caprine Cervical Spine Non-Fusion  
[Video] Model  
(China) [Jun Dong](#), Xijing He
- F5-2 The association between high preoperative MRI-based vertebral bone quality (VBQ) score and titanium mesh cage subsidence anterior cervical corpectomy and fusion  
[Video] (China) [Qiujiang Li](#), Ganjun Feng, Xi Yang, Yueming Song
- F5-3 Rate and timing of bone union after the anterior cervical fusion surgery of two levels with iliac bone graft using dynamic plate system  
(Japan) [Yuji Noguchi](#), Atuomi Aiba, Ryo Kadota, Takeo Furuya, Satoshi Maki, Macondo Mochizuki
- F5-4 Finite element analysis of a novel anterior cervical pedicle screw titanium cage internal fixation system  
[Video] (China) [Siyi cai](#), Zheping Zhang
- F5-5 Comparison of 3D printed artificial cervical spine and titanium mesh implant for the treatment of lower cervical spine fracture  
[Video] (China) [Yuwei li](#)
- F5-6 Comparison of 3D-Printed Artificial Vertebral Body With Titanium Mesh Cage To Realign Cervical Spine: A Preliminary Study  
[Video] (China) [Kai Cao](#), Wenqiang Deng, Shengbiao Ma, Zhenhai Zhou, Honggui Yu, Jiachao Xiong, Junlong Zhong, Zhiming Liu
- F5-7 3D printing motion-preserving cervical joint system implantation for treatment of cervical myelopathy: a first case report  
[Video] (China) [Xijing he](#)

## Free Paper 6 OPLL Basic

16:00-16:49

Moderators: [Yoshiharu Kawaguchi](#) (Japan)  
[Masahiko Takahata](#) (Japan)

- F6-1 Immortalization of posterior longitudinal ligament cells revealed Wnt5a promotes mesenchymal-to-epithelial transition and ossification of OPLL derived ligament cells  
[Video] (China) [Zifan Zhang](#), Chen Xu, Ruizhe Wang, Jingchi Li, Shihao Lu, Ning Liu, Huajian Zhong, Yang Liu, Wen Yuan
- F6-2 ENPP1 variants and phenotypic analysis in patients with ossification of the Posterior Longitudinal Ligament  
[Video] (China) [Xin Chen](#), Yu Sun
- F6-3 Bone turnover markers in patients with ossification of the posterior longitudinal ligament  
(Japan) [Katsuyuki Sasaki](#), Toru Doi, So Kato, Yuki Taniguchi, Yoshitaka Matsubayashi, Sakae Tanaka, Yasushi Oshima
- F6-4 Impact of obesity on cervical ossification of the posterior longitudinal ligament: a nationwide prospective study  
(Japan) [Kanji Mori](#), Toshitaka Yoshii, Satoru Egawa, Masao Koda, Takeo Furuya, Katsushi Takeshita, Morio Matsumoto, Shiro Imagama, Atsushi Okawa, Masashi Yamazaki

- F6-5 Screening and Identification of Obesity-related Genes In Ossification of Posterior Longitudinal Ligament of Cervical Spine  
[Video] (China) Anlong Jiang, Ye Ji, Yufu Wang, Jinglong Yan
- F6-6 High Sensitivity IL17 Levels Affect Morphological Characteristics of DISH in OPLL patients and Osteoclast Characterization  
(Japan) Zhongyuan He, Tran Canh Tung Nguyen, Taketoshi Yasuda, Shoji Seki, Kayo Suzuki, Kenta Watanabe, Hiroto Makino, Hayato Futakawa, Katsuhiko Kamei, Yoshiharu Kawaguchi
- F6-7 Evaluation of bone strength using finite-element analysis in patients with ossification of the posterior longitudinal ligament  
(Japan) Toru Doi, So Kato, Yuki Taniguchi, Yoshitaka Matsubayashi, Ken Okazaki, Sakae Tanaka, Yasushi Oshima

## Free Paper 7 OPLL Strategy

16:55-17:44

Moderators: **Dong-Ho Lee** (South Korea)  
**Kenichiro Sakai** (Japan)

- F7-1 Modified Kappa-line correlates better with neurological outcomes than modified K-line after laminoplasty for cervical myelopathy caused by ossification of the posterior longitudinal ligament  
(South Korea) Hyung Rae Lee, Dong-Ho Lee
- F7-2 A Novel Posterior Compression Score System for Outcome Prediction in Laminoplasty Treated OPLL Patients: A Propensity-Matched Analysis  
[Video] (China) Leixin Wei, Peng Cao, Chen Xu, Bo Hu, Huiqiao Wu, Ye Tian, Huajiang Chen, Xiaolong Shen, Wen Yuan
- F7-3 Factors for poor functional outcomes more than 10 years after posterior surgery in patients with cervical ossification of the posterior longitudinal ligament  
(Japan) Nao Otomo, Narihito Nagoshi, Junichi Yamane, Hitoshi Kono, Kazuki Takeda, Tatsuya Yamamoto, Reo Shibata, Soraya Nishimura, Yasuhiro Kamata, Kenshi Daimon, Toshiki Okubo, Yoshiomi Kobayashi, Morio Matsumoto, Masaya Nakamura, Kota Watanabe
- F7-4 Surgical results and complications of posterior decompression & fusion surgery for K-line (-) and/or huge (occupying ratio > 50%) ossification of posterior ligament in cervical spine  
(Japan) Yasutsugu Yukawa, Hideto Nishi, Yuki Mihara, Fumihiko Kato
- F7-5 Clinical study on the feasibility, efficacy and complications of computer-assisted design precise cervical [Video] intervertebral resection of Ossification of the posterior longitudinal ligament  
(China) LiLi Yang, Cheng Ye, Dong Xie, ChenHui Xu, LongQing Wang, Qing Chen, Zhao Qi, Hao Wu
- F7-6 Outcome comparison of anterior cervical ossified posterior longitudinal ligament en bloc resection vs. posterior total laminectomy and fusion for cervical OPLL: a prospective randomized controlled trial  
(China) Xiongsheng Chen, Bo Yuan, Bing Cao, Shengyuan Zhou
- F7-7 Comparison of clinical outcomes between anterior and posterior decompression with fusion for K-line (-) cervical ossification of the posterior longitudinal ligament: A prospective multicenter study  
(Japan) Narihito Nagoshi, Toshitaka Yoshii, Masao Koda, Atsushi Kimura, Kenichiro Sakai, Kei Ando, Kota Watanabe, Masaya Nakamura, Morio Matsumoto, Masashi Yamazaki, Shiro Imagama

## Evening Seminar 1

17:55-18:55

Moderator: **Gabriel Liu** (Singapore)

- ES1 Recent findings in the pathogenesis of ossification of the longitudinal ligament  
(Japan) Yasushi Oshima

## Free Paper 8 ADR Effect

8:05-8:54

Moderators: **Toshitaka Yoshii** (Japan)  
**Jong-Beom Park** (South Korea)

F8-1 Canceled

F8-2 Combined effect of artificial cervical disc replacement and facet tropism on the index-level facet joints: a finite element study  
(China) Xin Rong, Jing Li, Beiyu Wang, Hao Liu

F8-3 Clinical radiological outcomes of cervical disc arthroplasty in the patients with medic changes  
[Video] (China) Yifei Deng, Hao Liu, Beiyu Wang

F8-4 Predictor and clinical impact of postoperative coronal tilt after cervical total disc replacement  
(Japan) Norihiro Isogai, Haruki Funao, Nao Otomo, Yutaka Sasao, Ken Ishii

F8-5 Comparison of Hybrid Anterior Cervical Corpectomy and Fusion Combined with Total Disc Replacement or Cage Fusion for Multilevel Cervical Spondylotic Myelopathy  
[Video] (China) Bo Yuan, Shengyuan Zhou, Xiongsheng Chen

F8-6 Cervical spine balance of multilevel total disc replacement, hybrid surgery and anterior cervical discectomy and fusion with a long-term follow-up  
[Video] (China) Shuai Xu, Bin Zheng

F8-7 Radiological exploration on adjacent segments after total cervical disc replacement with Prodisc-C prosthesis  
[Video] (China) Yan Liang, Bo Wang, Haiying Liu

## Free Paper 9 ADR Follow-up

9:00-9:49

Moderators: **Yu Sun** (China)  
**Ken Ishii** (Japan)

F9-1 Mid- to long-term clinical and radiographic outcomes of cervical disc arthroplasty for the treatment of noncontinuous cervical spondylosis  
[Video] (China) Tingkui Wu, Beiyu Wang, Hao Liu

F9-2 Efficacy evaluation of Prodisc-C prosthesis after total cervical disc replacement: a minimum of 10-year follow up  
[Video] (China) Chen Guo

F9-3 CT assessment on the uncovertebral joints degeneration and the impact in one- or two-level artificial cervical arthroplasty  
[Video] (China) Weiyang Zhong, Zhengxue Quan, Xiaoji Luo

F9-4 Adjacent segment degeneration after single- and double-level cervical total disc replacement: a case-series study with an over 12-year follow up  
[Video] (China) Shuai Xu, Chen Guo, Haiying Liu

F9-5 Clinical and radiological outcomes of single-level cervical disc arthroplasty in the patients with preoperative reversible kyphosis: A matched cohort study  
[Video] (China) Beiyu Wang, Xu Hu, Hao Liu

F9-6 Reoperations following cervical arthroplasty with Bryan Cervical disc  
[Video] (China) Yanbin Zhao, Yu Sun

- F9-7 The role of apply bone wax to bone wound and the distance between the posterior edge of the artificial cervical disk and the vertebral body in heterotopic ossification during artificial cervical disk replacement  
[Video] (China) [Qiang Zhou](#)

## Free Paper 10 Spinal Cord Injury

9:55-10:44

Moderators: [Masaya Nakamura](#) (Japan)  
[Hirotaka Chikuda](#) (Japan)

- F10-1 Development of a Mouse Model of Chronic Ventral Spinal Cord Compression: Neurobehavioral, Radiological, and Pathological Changes  
(China) [Zhongyuan He](#), [Xizhe Liu](#), [Zhiyu Zhou](#), [Shaoyu Liu](#)
- F10-2 Elevated intraspinal pressure drives edema progression after acute compression spinal cord injury in rabbits  
(China) [Chaohua Yang](#), [Zhengxue Quan](#), [Qing Wang](#), [Zhiyu Chen](#), [Jingjin Ma](#), [Qiaochu Li](#)
- F10-3 Enoxaparin promotes functional recovery after spinal cord injury by antagonizing PTPR sigma  
(Japan) [Sadayuki Ito](#), [Hiroaki Nakashima](#), [Masaaki Machino](#), [Naoki Segi](#), [Jun Ouchida](#), [Kazuaki Morishita](#), [Ryotaro Oishi](#), [Yuichi Miyairi](#), [Shiro Imagama](#)
- F10-4 Epidemiological survey of cervical spinal cord injury in China from 1990 to 2019  
[Video] (China) [Chenjun Liu](#), [Tingling Xu](#), [Maigeng Zhou](#), [Haiying Liu](#)
- F10-5 A risk scale of in-hospital mortality for patients with traumatic spinal cord injury and stable condition  
(China) [Yining Gong](#), [Jinpeng Du](#), [Dingjun Hao](#), [Baorong He](#), [Liang Yan](#)
- F10-6 Prevalence of pre-existing factors causing spinal cord compression: Is there a difference between patients suffering from cervical spinal cord injury with and without bone injury?  
(Japan) [Haruo Kanno](#), [Kyoichi Handa](#), [Hiroshi Ozawa](#)
- F10-7 Impact of COVID19 Epidemic Preventive Management on Perioperative Complications and Medical Costs Following Spinal Cord Injury Surgery  
(Japan) [Hiroki Ushirozako](#), [Kota Suda](#), [Satoko Matsumoto](#) Harmon, [Miki Komatsu](#), [Masahiro Ota](#), [Tomoaki Shimizu](#), [Akio Minami](#), [Yukihiro Matsuyama](#)

## Luncheon Seminar 2

12:20-13:20

Moderator: [Akihito Minamide](#) (Japan)

- LS2 Surgical Outcome of Cervical Double-Door Laminoplasty Using Centerpiece Connect™ Plate Fixation System  
(Japan) [Hiroshi Miyamoto](#)

## Free Paper 11 Congenital Paediatric

14:10-14:59

Moderators: [Jun Mizutani](#) (Japan)  
[Kei Watanabe](#) (Japan)

- F11-1 Acute high cervical spinal cord injury with Down Syndrome: a pediatric case report  
(Japan) [Yosuke Ogata](#), [Toru Funayama](#), [Masao Koda](#), [Hiroshi Kamada](#), [Fumihiko Eto](#), [Kousei Miura](#), [Hiroshi Takahashi](#), [Hiroshi Noguchi](#), [Masashi Yamazaki](#)
- F11-2 Posterior fusion of cervical kyphosis deformity after irradiation -a pediatric case report-  
(Japan) [Sachiko Kawasaki](#), [Hideki Shigematsu](#), [Yuma Suga](#), [Masaki Ikejiri](#), [Takahiro Mui](#), [Yasuhito Tanaka](#)



- F11-3 Retrospective analysis of paediatric cervical spine tuberculosis with neurological deficit : A case series  
(India) Sushant Sudhir Srivastava, Sudhir Kumar Srivastava, Kushal Gori
- F11-4 The classification of congenital cervical scoliosis  
(China) Yu Sun, Shuo Cao, Feifei Zhou, Xin Chen, Yinze Diao, Yanbin Zhao, Tian Xia, Shengfa Pan, Li Zhang, Fengshan Zhang
- F11-5 [Video] Posterior-only approach for cervical hemivertebra excision and short fusion with pedicle screws in young children with cervical scoliosis: a technical note  
(China) Saihu Mao, Yong Qiu, Zhen Liu, Benlong Shi, Jun Qiao, Jun Jiang, Zezhang Zhu
- F11-6 [Video] Application of Posterior Atlantoaxial Pedicle Screw Rod Internal Fixation Technique in Preschool Children with Upper Cervical Vertebra Disorders  
(China) Fuzhi Ai, Yuanquan Chen, Shaodong Mo
- F11-7 [Video] Prevalence and Risk Factors of Surgical Treatment for Klippel-Feil Syndrome  
(China) Feifei Zhou, Linyao Ding, Yu Sun

## Free Paper 12 PS Setting

15:05-15:54

Moderators: Kuniyoshi Abumi (Japan)  
Masashi Neo (Japan)

- F12-1 Morphologic Characteristics of Subaxial Cervical Spine for Pedicle Screw placement (CPS) insertion base on Computer Tomography Analysis  
(Thailand) Surawut Ruchirawan, Surawit Visuthisakchai
- F12-2 Accuracy of cervical pedicle screw insertion using the freehand technique : The malposition rate for C7 was unexpectedly high  
(Japan) Masataka Miura, Takeo Furuya, Satoshi Maki, Yuki Nagashima, Juntaro Maruyama, Yuki Shiratani, Atsushi Yunde, Takaki Inoue, Mitsururo Kitamura, Seiji Ohtori
- F12-3 [Video] Freehand technique for C2 pedicle screw placement using novel modified surgical tools: A technique note  
(China) Guangzhou Li, Qing Wang, Rushen Chen
- F12-4 Usefulness of the C2 cannulated pedicle screw  
(Japan) Nobuyuki Shimokawa, Takafumi Inoue, Hidetoshi Sato
- F12-5 Accuracy of cervical pedicle screw placement using patient-specific template guide system and risk factor analysis for screw perforation  
(Japan) Hiroyuki Hasebe, Itaru Oda, Hirohito Takeuchi, Shigeki Oshima, Hiroki Tanaka, Hiroyuki Anbo, Ryo Fujita, Masanori Fujiya
- F12-6 The accuracy and safety of screw insertion procedure with the Screw Guide Template system for posterior cervical fusion: the outcome of over 1,000 attempts  
(Japan) Shuichi Kaneyama, Taku Sugawara
- F12-7 Learning curve of cervical pedicle screw placement with a CT Navigation system  
(Japan) Yoshinari Miyaoka, Shota Ikegami, Masashi Uehara, Hiroki Oba, Takayuki Kamanaka, Herue Hatakenaka, Daisuke Korogochi, Takuma Fukuzawa, Koji Hayashi, Tetsuhiko Mimura, Jun Takahashi

## Free Paper 13 Atlanto-Axial

16:00-16:49

Moderators: Kazuyoshi Nakanishi (Japan)  
Taku Sugawara (Japan)

- F13-1 Canceled



- F13-2 Radiological features in myelopathy patients due to Idiopathic Atlantoaxial Subluxation  
(Japan) Shota Amano, Kazuya Kitamura, Kazuhiro Chiba
- F13-3 Which factors affect the risk of atlantoaxial osteoarthritis? A retrospective study  
(Japan) Yuma Suga, Hideki Shigematsu, Masato Tanaka, Akinori Okuda, Sachiko Kawasaki, Yusuke Yamamoto, Masaki Ikejiri, Hideki Asai, Hidetada Fukushima, Yasuhiro Tanaka
- F13-4 Do flare-ups in systemic Disease Activity correlate to cervical deformity in patients with Rheumatoid Arthritis?  
(Netherlands) Anna Baukje Lebouille-Veldman, Dylan Spenkelink, C.F. Allaart, Carmen L.A. Vleggeert-Lankamp
- F13-5 Atlantodentoplasty via anterior retropharyngeal approach for the treatment of irreducible atlantoaxial  
[Video] dislocation with atlantodental osteoarthritis  
(China) Jia Shao, Yanzheng Gao, Kun Gao, Kezheng Mao, Xiuru Zhang
- F13-6 Transoral Stepwise Release Technique for The Treatment of Irreducible Atlantoaxial Dislocation  
[Video] (China) Fuzhi Ai, Jing Xu, Shaodong Mo
- F13-7 Radiographic predictors of subaxial subluxation after atlantoaxial fusion  
(Japan) Eiji Takasawa, Yoichi Iizuka, Kenta Takakura, Kazuhiro Inomata, Yusuke Tomomatsu, Shunsuke Ito, Akira Honda, Sho Ishiwata, Tokue Mieda, Hirohisa Chikuda

## Free Paper 14 O-C Junction

16:55-17:44

Moderators: Takachika Shimizu (Japan)  
Jin Sup Yeom (South Korea)

- F14-1 High anterior cervical approach for basilar invagination with irreducible atlanto-axial subluxation  
(Nepal) Dipak Shrestha, Bikash Parajuli, Sabik Raj Kayastha
- F14-2 Long-term outcomes following cervical revision surgery for a patient with swallowing disorder after a combined trans-oral decompression and posterior fusion surgery  
(Japan) Norimitsu Wakao, Mitsuhiro Kamiya, Yoshihito Sakai, Naoaki Osada
- F14-3 Atlantoaxial stenosis after muscle-preserving selective laminectomy  
(Japan) Ryoma Aoyama, Junichi Yamane, Ken Ninomiya, Yuichiro Takahashi, Kazuya Kitamura, Satoshi Nori, Satoshi Suzuki, Masahiro Kato, Seiji Ueda, Ukei Anazawa, Tateru Shiraishi
- F14-4 Canceled
- F14-5 Posterior Two-Step Distraction and Reduction for Basilar Invagination with Atlantoaxial Dislocation: A  
[Video] Novel Technique for Precise Control of Reduction Degree Without Traction  
(China) Xiaqing Sheng, Yang Meng, Hao Liu, Beiyu Wang, Chen Ding
- F14-6 Is it safe to treat basilar invagination with a single 3D-printed lateral mass cage in reconstruction of sagittal  
[Video] plane alignment?  
(China) Yuqiang Wang, Yilin Liu, Shuhao Zhang, Yao Zhao, Mirwais Alizada, Limin Wang
- F14-7 Radiological analysis of the cerebrospinal fluid dynamics at the craniovertebral junction by time-spatial labeling inversion pulse magnetic resonance imaging in patients with cervical spinal canal stenosis  
(Japan) Hitoshi Yamahata, Fumito Tanabe, Kyoichi Murasumi, Kosei Ijiri, Ryosuke Hanaya

## Evening Seminar 2

Domestic results of cervical artificial discs in Japan~Summary of The Japanese Society for Spine Surgery and Related Research, and Neurospinal Society of Japan~

17:55-18:55

Moderators: Toshihiro Takami (Japan)  
Toshitaka Yoshii (Japan)

- ES2-1 Safety and Validity of Anterior Cervical Disc Replacement for Single-level Cervical Disc Disease: Initial Two-year Follow-up of the Prospective Observational Post-marketing Surveillance Study for Japanese Patients (Japan) Toshihiro Takami
- ES2-2 Early experiences and Short-term clinical results of Prestige LP in Japan (Japan) Toshitaka Yoshii

# Saturday, March 11

Meeting Room (503), 5F, Conference Center, PACIFICO Yokohama

## Morning Seminar 1

7:30-8:30

Moderator: Atsuomi Aiba (Japan)

- MS1 Clinical and radiologic evidences in cervical compressive diseases  
(Japan) Takashi Hirai

## Free Paper 15 Anterior Complication

8:50-9:32

Moderators: Nobuyuki Shimokawa (Japan)  
Torphong Bunmaprasert (Thailand)

- F15-1 Investigation of risk factors of C5 palsy after anterior cervical spine surgery  
(Japan) Yu Matsukura, Toshitaka Yoshii, Hiroyuki Inose, Takashi Hirai, Satoru Egawa, Kentaro Yamada, Jun Hashimoto, Kurando Utagawa, Yuri Tamura, Go Uesugi, Atsushi Okawa
- F15-2 C5 palsy following anterior decompression and fusion for cervical degenerative disorders: trends associated with advancements in surgical technique  
(Japan) Atsuomi Aiba, Hiroshi Takahashi, Ryo Kadota, Mitsuhiro Hashimoto, Masao Koda, Satoshi Maki, Takeo Furuya, Masashi Yamazaki, Yuji Noguchi, Macondo Mochizuki
- F15-3 Atrophy of the Posterior Cricarytenoid Muscle as an Indicator of a recurrent laryngeal nerve injury history before revision anterior cervical surgery  
(South Korea) Sang Yun Seok, Dong-Ho Lee
- F15-4 Esophageal fistula after anterior surgery for cervical spine fracture: A 20-year retrospective analysis of a single center  
[Video] (China) Baorong He, Yongfei Huang, Jinpeng Du
- F15-5 Comparison of patient-reported postoperative dysphagia in patients undergoing one-level versus two-level anterior cervical discectomy and fusion with the Zero-P Implant System  
[Video] (China) Chengyi Huang, Hao Liu, Beiyu Wang
- F15-6 Prediction and prevention of postoperative dysphagia by preoperative ST intervention in Anterior Cervical Decompression and Fusion  
(Japan) Yohei Ito, Hisanori Mihara, Yasunori Tatara, Takanori Niimura, Yutaka Inaba

## Free Paper 16 Various Complication

9:45-10:34

Moderators: Nobuhiro Tanaka (Japan)  
Shuichi Kaneyama (Japan)

- F16-1 A New Indicator: Airway-Angle Formed by Oral and Pharyngeal Axes to Avoid Narrowing the Airway due to Mechanical Obstruction during Posterior Cervical Surgery in Cervical Spondylotic Myelopathy (CSM)  
(Japan) Nodoka Manabe, Daisuke Tsunoda, Kazuro Tsuge, Kunihiko Kamatani
- F16-2 Surgical Complications and Incomplete Canal Widening of the Vertebral Body Sliding Osteotomy to Treat Cervical Myelopathy  
(South Korea) Sung Tan Cho, Dong-Ho Lee, Sehan Park, Choon Sung Lee, Chang Ju Hwang, Jae Hwan Cho
- F16-3 Gap between flexion and extension ranges of motion: a novel indicator to predict the loss of cervical lordosis after laminoplasty in patients with cervical spondylotic myelopathy

(Japan) Takashi Fujishiro, Takuya Obo, Masahiro Mizutani, Atsushi Nakano, Yoshiharu Nakaya, Sachio Hayama, Yoshitada Usami, Masashi Neo

F16-4 Incidences, causes and risk factors of unplanned reoperation within 30 days of craniovertebral junction surgery: a single-center experience

(China) Hu Chen, Changrong Zhu, Hong Xia

F16-5 Prophylactic Use of Antibiotics for Fever After Drainage Removal Following a Dural Tear During Cervical Spinal Surgery

[Video]

(China) Jie Qin, Xijing He

F16-6 Risk factors for postoperative unexpected ambulatory status after spinal surgery for metastatic spinal tumor

(Japan) Kentaro Yamada, Toshitaka Yoshii, Mikayo Toba, Satoru Egawa, Yu Matsukura, Takashi Hirai, Hiroyuki Inose, Kiyohide Fushimi, Atsushi Okawa

F16-7 Impact of preoperative nutritional status diagnosed using controlling nutritional status on major complications after degenerative cervical myelopathy surgery: a propensity score matching analysis

(Japan) Kousei Miura, Kotaro Sakashita, Fumihiko Eto, Hiroshi Noguchi, Hiroshi Takahashi, Toru Funayama, Masao Koda, Masashi Yamazaki

## Asian Symposium

10:45-11:55

Moderators: Masatoshi Sumi (Japan)

Gabriel Liu (Singapore)

AS-1 Current status of cervical spine care in Bangladesh

(Bangladesh) Chitta Ranjan Roy, Zahirul Islam, Sk Mohammad Ali, ANM Bazlur Rashid, Md Younus Hossain, Gazi Ahsan-ul Munir

AS-2 Tackling cervical spine spondylodiscitis using a metabolic approach - the Sarawak experience

(Malaysia) Nur Aida Faruk Senan, Mohd Zaki Mohamad Amin, Chong Ying Chyi @ Chong Shyh Jian

AS-3 Subaxial Cervical spine injury: Treatment Approach

(Nepal) Bishnu Babu Thapa, Rajesh Pratap Shah

AS-4 Preoperative close reduction of cervical fracture dislocation

[Video] (Pakistan) Abdul Satar, Mohammad Zahid khan, Mohammad Arif, Sameer kabeer, Ihsan ullah

AS-5 The First Experience with Fully Endoscopic Posterior Cervical Foraminotomy and Discectomy for Radiculopathy Performed in Viet Duc University Hospital

(Vietnam) Dinh The Hung, Dinh Ngoc Son, Vu Van Cuong, Nguyen Van Thach

AS-6 Epidemiology of cervical spine injuries during the pandemic of COVID 19, in Cambodia-China Friendship Preahkossmak Hospital 2019-2023

(Cambodia) IV Vycheth, Sam Nang, Din Vuthy, Puth Chenda, Bao Sunly, Tytim Rydeth, Try Limtyty, Bun Limmony

## Invited Lecture 3

12:00-12:30

Moderator: Masashi Yamazaki (Japan)

IL3 A New Era in Patient Expectations and Satisfaction with Elective Spine Surgery

(USA) Alpesh A. Patel

## Introduction of CSRS

12:30-12:35

Alpesh A. Patel (USA)

## Luncheon Seminar 3

12:45-13:45

Moderator: **Ken Ishii** (Japan)

LS3-1 Anterior Cervical Surgery: multi-level ACDF and ACCF

(Japan) Kenji Seki

LS3-2 Posterior spinal correction and fusion surgery for dropped head syndrome

(Japan) Haruki Funao, Norihiro Isogai, Ken Ishii

## Free Paper 17 Alignment

14:00-14:49

Moderators: **Takashi Kaito** (Japan)

**Johannes Schroeder** (Germany)

F17-1 The Natural Loss of Cervical Lordosis: a 6-year Follow- up Study

(China) Zhibin Wang, Yang Lin, Feng Li, Wei Xiong

F17-2 Comparison of Cervical Sagittal Parameters in Degenerative Cervical Spondylolisthesis versus Degenerative Cervical Kyphosis with Myeloradiculopathy Treated by Anterior Cervical Discectomy and Fusion

(Thailand) Jakkrit Keeratiruangrong, Torphong Bunmaprasert, Sang-Hun Lee, Nantawit Sugandhavesa, Wongthawat Liawrungrueang

F17-3 Can Intraoperative C2 Slope predict postoperative standing sagittal alignment following cervical deformity correction?

(South Korea) Namhoo Kim, Kyung-Soo Suk, Ji-Won Kwon, Byung Ho Lee, Dongchan Eun, Yongho Lee, Joonoh Seo, Si Young Park, Hak-Sun Kim, Seong-Hwan Moon

F17-4 C4 Constant Vertebra-A Novel Benchmark of Physiological Cervical Sagittal Alignment

[Video] (China) Haocheng Xu, Zhaoyang Gong, Yong Yang, Xiaosheng Ma, Feizhou Lyu, Jianyuan Jiang, Hongli Wang

F17-5 Can Thoracic Inlet Angle Be Used as a Substitute for T1 Slope?

(Japan) Kenta Takakura, Eiji Takasawa, Kazuhiro Inomata, Syunsuke Ito, Yusuke Tomomatsu, Akira Honda, Sho Ishiwata, Tokue Mieda, Yoichi Iizuka, Hirotaka Chikuda

F17-6 The changes analysis of cervical sagittal parameters after cervical anterior or posterior approach surgery

(China) Nan Su, Bingqiang Wang, Yong Yang, Dong Li, Jinjun Li

F17-7 What Effect Does T1 Slope Have on Sagittal Balance and the Relationship with Caudal End of Three or More Level Posterior Cervical Fusions?

(USA) Devender Singh, Eric Truumees, Ashley Duncan, John Stokes, Matthew Geck, Sophia Stokes, Cortney Matthews

## Free Paper 18 Alignment Failure

14:55-15:44

Moderators: **Alpesh A. Patel** (USA)

**Hiroshi Miyamoto** (Japan)

F18-1 Differences in risk factors for loss of cervical lordosis after multiple segment laminoplasty for cervical spondylotic myelopathy and ossification of the posterior longitudinal ligament

(Japan) Takaki Inoue, Satoshi Maki, Takeo Furuya, Sho Okimatsu, Atsushi Yunde, Masataka Miura, Yuki Shiratani, Yuki Nagashima, Juntaro Maruyama, Seiji Ohtori

F18-2 The distribution of SVA (sagittal vertical axis) in patients with dropped head syndrome

(Japan) Hirosuke Nishimura, Kenji Endo, Takahito Aihara, Kengo Yamamoto

F18-3 O-C2 Angle reflects Whole-body Sagittal Balance and Activities of Daily Living (ADL) Impairment in the Elderly

(Japan) Jun Ouchida, Hiroaki Nakashima, Tokumi Kanemura, Kenyu Ito, Mikito Tsushima, Masaaki Machino, Sadayuki Ito, Hiroyuki Tomita, Shiro Imagama

F18-4 Changes of Correlations Between Cervical and Distal Spinal Sagittal Alignment in Asymptomatic  
[Video] Population With Aging: A Preliminary Study

(China) Kai Cao, Jiang Xu, Shengbiao Ma, Zhenhai Zhou, Honggui Yu, Wenqiang Deng, Jiachao Xiong, Junlong Zhong

F18-5 Changes in cervical spine sagittal alignment after surgery for adolescent idiopathic scoliosis Lenke type 1 and 2 curves

(Japan) Kanji Mori, Jun Takahashi, Hiroki Oba, Terue Hatanaka, Tetsuhiko Mimura, Shinji Imai

F18-6 The clinical features of posttraumatic dropped head syndrome

(Japan) Kento Yamanouchi, Ken Ishii, Tatsuya Igawa, Naruhito Fujita, Norihiro Isogai, Shigeto Ebata, Yutaka Sasao, Haruki Funao

F18-7 The radiographic changes after short and intensive rehabilitation (SHAiR) program in patients with dropped head syndrome

(Japan) Norihiro Isogai, Haruki Funao, Tatsuya Igawa, Nao Otomo, Yutaka Sasao, Ken Ishii

## Free Paper 19 DHS

15:50-16:39

Moderators: Kyung-Soo Suk (South Korea)  
Haruki Funao (Japan)

F19-1 Characteristic Clinical Manifestation of Dropped Head Syndrome

(Japan) Ken Ishii, Norihiro Isogai, Tatsuya Igawa, Ryunosuke Urata, Yutaka Sasao, Haruki Funao

F19-2 Surgical Strategy for Severe Cervical Deformity Patients with Difficulty of Horizontal Gaze

(Japan) Jun Mizutani, Naoto Nishino, Satoshi Miyamoto, Ayana Kitta, Hiromi Madarame, Masahiro Otsu, Taro Sakurai, Toru Doi, Tomohisa Inoue, Ryo Tamaki, Ken Okazaki

F19-3 Thoraco-lumbar corrective fusion for SVA (+) type dropped head syndrome: usefulness of cast test as a possible predictor of surgical outcome

(Japan) Masao Koda, Toru Funayama, Hiroshi Takahashi, Hiroshi Noguchi, Miura Kousei, Masashi Yamazaki

F19-4 Differences in Surgical Outcomes of Drop Head Syndrome Due to Differences in UIV

(Japan) Kenta Kurosu, Shin Oe, Yu Yamato, Tomohiko Hasegawa, Go Yoshida, Tomohiro Banno, Hideyuki Arima, Tomohiro Yamada, Keiichi Nakai, Yukihiko Matsuyama

F19-5 Surgical strategy for dropped head syndrome based on the primary driver

(Japan) Tetsuryu Mitsuyama, Kaiji Ota, Ryuta Kono, Takeshi Umabayashi, Manabu Niimura, Kiminori Sakurai

F19-6 A case of delayed respiratory failure after corrective surgery for dropped head syndrome

(Japan) Shinsuke Sato, Yusuke Nakao, Shingo Kumaki, Shigeo Sano

F19-7 Characteristics of upper airway complications after combined anterior and posterior corrective fusion surgery for patients with dropped head syndrome

(Japan) Kento Inomata, Hiroshi Takahashi, Masao Koda, Toru Funayama, Hiroshi Noguchi, Kosei Miura, Fumihiko Eto, Kosuke Sato, Hisanori Gamada, Shun Okuwaki, Masashi Yamazaki

## Closing Remarks & Awards Ceremony

16:40-17:10

President: Hisanorii Mihara (Japan)

## Morning Seminar 2

7:30-8:30

Moderator: **Masashi Yamazaki** (Japan)

MS2 Advances in Anterior Cervical Surgery -Cervical Reconstruction and Augmented Reality Navigation Assist-  
(Japan) Kenichiro Sakai

## Free Paper 20 Tumor

8:50-9:39

Moderators: **Takeshi Aoyama** (Japan)  
**Feng Li** (China)

F20-1 Surgical strategy for cervical dumbbell schwannomas  
(Japan) Taku Sugawara, Naoki Higashiyama, Shinya Tamura

F20-2 Spinal dumbbell tumors in cervical spine: surgical strategy and clinical outcomes  
(China) Congcong Liu, Youwen Deng

F20-3 The impact of not adding instrumented fusion on postoperative alignment and neck pain in cervical dumbbell-shaped spinal cord tumor resection  
(Japan) Takeo Furuya, Satoshi Maki, Takaki Inoue, Atsushi Yunde, Masataka Miura, Yuki Shiratani, Shuntaro Maruyama, Yuki Nagashima, Seiji Ohtori

F20-4 Surgical outcome of cervical and thoracic extramedurally spinal tumor  
(Japan) Akinobu Suzuki, Hiedomi Terai, Minoru Kato, Hiromitsu Toyoda, Shinji Takahashi, Koji Tamai, Hiroaki Nakamura

F20-5 Clinical outcomes of posterior stabilization for the treatment of cervical cord compression caused by metastatic spinal tumors  
(Japan) Hiroshi Uei, Kentaro Sato, Yuya Miyanaga, Satoshi Suzuki, Sosuke Saito, Koji Matsumoto, Hirokatsu Sawada, Kazuyoshi Nakanishi

F20-6 Surgical outcomes and predictive risk factors for cervical spine metastasis: a prospective study of 46 cases  
(Japan) Takashi Yurube, Yutaro Kanda, Yoshiki Takeoka, Kunihiko Miyazaki, Hiroki Ohnishi, Tomoya Matsuo, Masao Ryu, Naotoshi Kumagai, Kohei Kuroshima, Ryosuke Kuroda, Kenichiro Kakutani

F20-7 Clinical application of different types of prosthesis in reconstruction after total spondylectomy for upper cervical tumors.  
(China) Feng Li, Wei Wu, Hui Liao, Jianfeng Guo

## Free Paper 21 Pain

9:45-10:34

Moderator: **Kazuhiro Chiba** (Japan)

F21-1 Postoperative axial pain caused by C4 radiculopathy  
(Japan) Kaho Yasuda, Yoshitada Usami, Sachio Hayama, Yoshiharu Nakaya, Takashi Fujishiro, Masashi Neo

F21-2 The causes of residual neck pain as evidenced by poor neck disability index score after posterior cervical spine surgery  
(Japan) Rina Therese Madelar, Shin Oe, Kenta Kurosu, Go Yoshida, Yu Yamato, Tomohiko Hasegawa, Tomohiro Banno, Hideyuki Arima, Koichiro Ide, Tomohiro Yamada, Yukihiro Matsuyama

F21-3 Utilization of the arm, shoulder, and hand (DASH) questionnaire in patients with cervical spine disorders  
(Japan) Haruki Funao, Kentaro Ideura, Ryunosuke Urata, Tatsuya Igawa, Kento Yamanouchi, Naruhito Fujita, Nao Otomo, Norihiro Isogai, Shigeto Ebata, Yutaka Sasao, Ken Ishii



F21-4 Canceled

F21-5 Axial neck-shoulder pain after posterior correction and fusion for adolescent idiopathic scoliosis with structural thoracic curve: Does cranial fusion level affect neck symptoms?

(Japan) Kei Watanabe, Masayuki Ohashi, Hideki Tashi, Tatsuo Makino, Keitaro Minato, Shigetoshi Hanafusa, Toru Hirano, Kazuhiro Hasegawa

F21-6 Effect of non-invasive brain stimulation on neuropathic pain following spinal cord injury: A systematic review and meta-analysis

[Video] (China) Fei Yin, Zhubin Shen, Kunchi Zhao, Ran Li, Qing Ruan, Chunyang Meng, Qingsan Zhu

F21-7 Does regular preoperative use of opioids affect postoperative outcomes in patients undergoing posterior cervical decompression surgery?

(Japan) Junya Miyahara, Kosei Nagata, Naohiro Kawamura, Akiro Higashikawa, Yujiro Takeshita, So Kato, Toru Doi, Yuki Taniguchi, Yoshitaka Matsubayashi, Sakae Tanaka, Yasushi Oshima

## Free Paper 22 AI Robot

10:55-11:44

Moderators: Carmen Vleggeert-Lankamp (Netherlands)  
Masashi Yamazaki (Japan)

F22-1 Deep learning-based automatic segmentation and statistical shape models for cervical vertebrae: a Chinese population-based study

[Video] (China) Sheng Yang, Chaobo Feng, Guoxin Fan, Yunshan Fan, Shisheng He

F22-2 Deep learning algorithm for identifying cervical spinal compression due to degenerative canal stenosis on radiography

(Japan) Koji Tamai, Hidetomi Terai, Masatoshi Hoshino, Ainobu Suzuki, Hiroaki Nakamura

F22-3 The impact of growing rod surgery on cervical alignment during the treatment of early-onset scoliosis: A case-control study based on machine learning algorithms

(China) Bo Han, Yong Hai, Weishi Liang

F22-4 Using Machine Learning to Identify Patients Likely To Choose Surgery For One Level Anterior Cervical Disc Herniations

(USA) Devender Singh, Eeric Truumees, Ashley Duncan, Matthew Geck, John Stokes, Alexander Jeremy, Calvin Chandler, Sophia Stokes

F22-5 Predicting Postoperative Outcomes of Degenerative Cervical Spinal Disease Based on Machine Learning

[Video] (China) Shuai Zhou, Shuai Zhou

F22-6 Machine learning web application for predicting functional outcomes in patients with traumatic spinal cord injury following inpatient rehabilitation

(Japan) Satoshi Maki, Takeo Furuya, Takaki Inoue, Atsushi Yunde, Masataka Miura, Yuki Shiratani, Yuki Nagashima, Juntaro Maruyama, Seiji Ohtori

F22-7 Deltoid-Trapezius adjustment ratio as a myoelectric biomarker of shoulder motion recovery in C5 palsy patients during robot-assisted shoulder rehabilitation

(Japan) Hideki Kadone, Margaux Lafitte, Shigeki Kubota, Masao Koda, Masashi Yamazaki

## Free Paper 23 Endscope

11:50-12:32

Moderators: Akihito Minamide (Japan)  
Yasushi Oshima (Japan)

F23-1 The efficacy of microscopic augmented reality (AR) navigation with a mobile flat panel 3D C-arm

(Japan) Yasushi Fujiwara, Yoriko Touten, Ryo Ohta, Shinji Kotaka, Kazutoshi Iwasa, Hiroki Fukui

- F23-2 Posterior Endoscopic Cervical Foraminotomy (PECF) has a potential to be standard operative procedure for the treatment of cervical radiculopathy  
(Japan) Hisashi Koga, Hiroki Iwai, Hirohiko Inanami
- F23-3 Clinical effect evaluation of posterior endoscopic cervical foraminoplasty for cervical spondylotic  
[Video] radiculopathy with uncovertebral osteophytes  
(China) Li Shen, Yan Zhengjian, Cheng Si, Shi Lei, Chu Lei, Ke Zhenyong, Deng Zhongliang
- F23-4 Full endoscopic posterior cervical foraminotomy for revision surgery  
(Japan) Toshitaka Enoki, Koichiro Ono, Daisuke Fukuhara, Tokifumi Majima
- F23-5 Combination of posterior spinal endoscopic decompression and anterior cervical decompression for single-  
[Video] level pinching cervical spondylotic myelopathy  
(China) Pingguo Duan, Bin Zhang, Mansheng Duan, Runsheng Guo
- F23-6 Clinical efficacy of posterior endoscopic cervical discectomy in the treatment of central cervical disc  
[Video] herniation  
(China) Zhengjian Yan, Shen Li, Lei Chu, Zhenyong Ke, Zhongliang Deng

## Luncheon Seminar 4

12:45-13:45

Moderator: Takashi Kaito (Japan)

- LS4 Recent advances in diagnosis/surgery for drop head syndrome  
(Japan) Masao Koda

## Free Paper 24 Upper C Trauma

14:00-14:49

Moderators: Takeo Furuya (Japan)  
Kai Cao (China)

- F24-1 Clinical features and treatment strategy of atlas fracture in elderly patients: JASA multicenter study  
(Japan) Yuki Shiratani, Takeo Furuya, Atsushi Yunde, Satoshi Kato, Kei Ando, Toru Funayama, Hidenori Suzuki, Shota Ikegami, Hitoshi Tonomura, Ko Hashimoto
- F24-2 C1-ring osteosynthesis vs. C1-2 fixation fusion in the treatment of unstable atlas fracture: a multicenter  
[Video] prospective randomized controlled study followed up for 5 years  
(China) Jinpeng Du, Baorong He, Yunfei Huang
- F24-3 Posterior Temporary Fixation of C1-2 screw-rod System for Unstable C1 Burst Fracture Is It Really  
[Video] Necessary?  
(China) Wei-yu Jiang, Yun-lin Chen, Wei-hu Ma
- F24-4 Comparison of clinical efficacy between single posterior atlantoaxial fixation and posterior atlantoaxial  
[Video] fixation and fusion on treatment of fresh odontoid fractures: a long-term follow-up study  
(China) Fei Ma, Dejun Zhong, Qing Wang
- F24-5 Low-threshold-for-surgery versus primarily-conservative treatment for odontoid fractures in the elderly:  
Evaluating practice variation in the Netherlands  
(Netherlands) Jeroen G.J. Huybregts, Samuel B. Polak, Wilco C.H. Jacobs, Ilse A. Huijbregts, Anouk Y.J.M. Smeets, Mark P. Arts, Willem-Bart M. Slooff, F. Cumhur Oner, Wilco C. Peul, Henk Van Santbrink, Carmen L.A. Vleggeert-Lankamp
- F24-6 Hangman's fracture in geriatric population  
(Japan) Atsushi Yunde, Takeo Furuya, Satoshi Kato, Noriaki Yokogawa, Kei Ando, Hiroaki Nakajima, Toru Funayama, Kota Watanabe, Sumihisa Orita, Seiji Orita

- F24-7 Posterior short-segment fixation and fusion for unstable Hangman fractures under General Anesthesia with Nasotracheal Intubation  
(China) Xinghuo Wu, Cao Yang

## Free Paper 25 Subaxial Trauma

14:55-15:44

Moderators: Miki Komatsu (Japan)  
So Kato (Japan)

- F25-1 A case of rotatory fixation at the C2/3 facet joint  
(Japan) Akinobu Nishioka, Mitsutoshi Ota
- F25-2 Traumatic nerve root injury due to unilateral facet fracture of the cervical spine by a direct external force  
(Japan) Hiroshi Takahashi, Yoshiyuki Kitayama, Yosuke Shibao, Masao Koda, Toru Funayama, Hiroshi Noguchi, Kousei Miura, Kento Inomata, Kotaro Sakashita, Yosuke Ogata, Masashi Yamazaki
- F25-3 Multilevel Fractures of the Cervical Spine-Experience Sharing from Thailand  
(Thailand) Torphong Bunmaprasert, Jakkrit Keeratiruangrong, Kanin Pongmunjit, Pakorn Kerdsinchai, Bunyaporn Wuttiworawanit, Waragunt Waratamrongpatai, Wongthawat Liawrungrueang
- F25-4 Traumatic High-Grade Fracture Dislocation of the Subaxial Cervical Spine without Neurological Deficits:  
[Video] The Management Experiences  
(China) Zhong Fang, Yiwei Qi, Qian Guo, Feng Li
- F25-5 Surgical Outcome of Locked Facet in Distractive-Flexion Injury of the Subaxial Cervical Spine: Single-Institution Retrospective Case Series  
(South Korea) Eugene Park, Woo-Kie Min, Sung-Hyuk Yoon
- F25-6 Concomitant Fractured Cervical and Lumbar Spines in Patient with Ankylosing Spondylitis  
(Thailand) Bunyaporn Wuttiworawanit, Jakkrit Keeratiruangrong, Wongthawat Liawrungrueang, Waragunt Waratamrongpatai, Torphong Bunmaprasert
- F25-7 Cervical diffuse idiopathic skeletal hyperostosis related spine injuries in elderly  
(Japan) Naoki Segi, Hiroaki Nakashima, Satoshi Kato, Toru Funayama, Kota Watanabe, Takeo Furuya, Hideaki Nakajima, Tomohiko Hasegawa, Yoshinori Terashima, Shiro Imagama

## Free Paper 26 Various Imaging

15:50-16:39

Moderators: Satoshi Maki (Japan)  
Haruo Kanno (Japan)

- F26-1 The relationship between the pathophysiology of cervical myelopathy and cervical spine X-ray findings  
(Japan) Takanori Niimiura, Hisanori Mihara, Yasunori Tatara, Akira Sakaguchi, Naoya Kondo, Kiyotaka Nagashima
- F26-2 Ethnic variation in cervical spinal canal dimensions: CT analysis from a New Zealand cohort  
(New Zealand) Joseph F Baker, Dan Goddard-Hodge
- F26-3 Effect of early postoperative resolution of MRI signal intensity changes on the outcomes of degenerative cervical myelopathy  
(Japan) Keiichiro Tozawa, Kosei Nagata, Nozomu Ohtomo, Hideki Nakamoto, So Kato, Toru Doi, Yuki Taniguchi, Yoshitaka Matsubayashi, Sakae Tanaka, Yasushi Oshima
- F26-4 Spinal cord MRI signal change at 1 year after cervical decompression surgery is useful for predicting mid-term clinical outcome: an observational study using propensity scores  
(Japan) Shota Ikegami, Masashi Uehara, Yoshinari Miyaoka, Hiroki Oba, Takayuki Kamanaka, Terue Hatakenaka, Koji Hayashi, Takuma Fukuzawa, Hiromichi Misawa, Jun Takahashi

- F26-5 Can preoperative cervical spinal diffusion tensor imaging (DTI) indices predict surgical outcomes in patients with Hirayama disease? A retrospective cohort study  
[Video] (China) Chi Sun, Yuan Gao, Shuyi Zhou, Xiaosheng Ma, Xinlei Xia, Feizhou Lyu, Jun Zhang, Hongli Wang, Jianyuan Jiang
- F26-6 Can Modic change be an independent sign predicting segmental motion changes in the cervical spine? A radiographic evaluation of kinematic characteristics of cervical Modic changes based on disc degeneration grade  
[Video] (China) Fan Zhang, Hongli Wang, Feizhou Lyu, Xiaosheng Ma
- F26-7 Is cervical spinal cord compression more common in Adult scoliosis than in normal subjects?  
(Japan) Hiroaki Nakashima, Noriaki Kawakami, Masaaki Machino, Sadayuki Ito, Naoki Segi, Jun Ouchida, Shiro Imagama