7:30  Registration

7:50~7:55

~Opening Remarks~
President Makoto TANIGUCHI, M.D.

8:00~10:00 (120min.)

Main Theme 2 Debate Session
<Challenging difficult cases>
Chairpersons Toshiyuki TAKAHASHI, M.D., Naohiro KAWAMURA, M.D.

<table>
<thead>
<tr>
<th>MT2-1</th>
<th>Case 1: phased spinal intervention</th>
<th>177</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Manabu MINAMI, M.D., et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Spinal Disorders Center, Fujieda Heisei Memorial Hospital, Fujieda, Shizuoka)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MT2-2</th>
<th>Case 1: 2 staged surgery for radiculopathy and scolio kyphosis</th>
<th>178</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nobuhiro HARA, M.D.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Dept. of Orthopaedics, Musashino Red Cross Hospital, Musashino, Tokyo)</td>
<td></td>
</tr>
</tbody>
</table>
Case 1: Lumbar radiculopathy caused by spondylotic scoliosis with Parkinson disease
Hisaaki UCHIKADO, M.D.
(Uchikado Neuro-Spine Clinic, Fukuoka, Fukuoka)

Case 2: Posterior C1-2 fixation for retroodontoid pseudotumor associated with DISH
Nobuyuki SHIMOKAWA, M.D.
(Department of Neurosurgery, Tsukazaki hospital, Himaji, Hyogo)

Case 2: Laminectomy with external cervical orthosis for aged patients with retro-odontoid mass
Masahiro AOYAMA, M.D., et al.
(Department of Neurological Surgery, Aichi Medical University, Nagakute, Aichi)

Case 2: Laminectomy with external cervical orthosis for aged patients with retro-odontoid mass
Takao YASUHARA, M.D., et al.
(Department of Neurological Surgery, Okayama University Graduate School of Medicine, Okayama, Okayama)

Case 3: Surgical selection of cervical nerve sheath tumor localized in the neural foramen: From the viewpoint of posterior cervical unilateral resection
Toshihiro TAKAMI, M.D.
(Department of Neurosurgery, Osaka City University Graduate School of Medicine, Osaka, Osaka)

Case 3: A posterolateral intermuscular approach for cervical functionally relevant nerve sheath tumors
Toshihiko INUI, M.D., et al.
(Spine center, Department of Neurosurgery, Tominaga Hospital, Osaka, Osaka)

Case 4: The treatment option for spastic paraparesis due to ossification of the yellow ligament at thoracic spine
Byoung Hun Lee, M.D.
(Department of Neurosurgery, Hangang Sacred Heart Hospital of Hallym University Medical Center, Seoul, Korea)

Case 4: Posterior decompression and fusion with rigid instrumentation
Naohiro KAWAMURA, M.D.
(Japanese Red Cross Medical Center, Shibuya, Tokyo)
10:00〜10:05
Break

10:05〜11:05（60min.）

Spine Leader's Lecture 1 (Postgraduate Lecture of JOA)

10:05〜10:35（30min.）
Chairperson Keisuke TAKAI, M.D.

SLL1-1 Keisuke TAKAI, M.D. (Tokyo Metropolitan Neurological Hospital, Fuchu, Tokyo)
Outcomes of patients with misdiagnosis of spinal dural arteriovenous fistulas
…………………………………………………………………………………………………………… 119
(MEDICALINE CORPORATION)

10:35〜11:05（30min.）
Chairperson Shunji Asamoto, M.D.

SLL1-2 Takashi ITABASHI, M.D. (Japanese Red Cross Narita Hosp., Narita, Japan)
Surgical strategy for spinal dural arteriovenous fistula
…………………………………………………………………………………………………………… 121
(DAIICHI SANKYO CO., LTD.)

11:05〜11:20
Break

11:20〜12:20（60min.）

Luncheon Seminar 1 (Postgraduate Lecture of JOA)

Chairperson Toshitaka YOSHII, M.D.

LS1 Steven GILL (University of Bristol and Southmead Hospital, Bristol, UK)
Cervical arthroplasty: what we have achieved and the challenges ahead
…………………………………………………………………………………………………………… 157
(Medtronic Sofamor Danek Co., Ltd.)

12:20〜12:30
Break

12:30〜14:15（45min.）

Symposium 1 Artificial cervical disc

Chairperson Masakazu TAKAYASU, M.D., Masashi NEO, M.D.

S1-1 Cervical Arthroplasty: State of the Art in Europe
…………………………………………………………………………………………………………… 101
Bernhard MEYER, M.D.
(Department of Neurosurgery, Technical University of Munich, Munich, Germany)
Mobility preserving spinal stabilization: Is it better than fusion .......................... 103
Mehmet ZILELI, M.D.
(Neurosurgery Department in Ege University, Izmir, Turkey)

Pathology and short term operative result of our cases of artificial disc replacement ................................. 105
Masahito HARA, M.D.
(Neurosurgery Department, Inazawa Municipal Hospital, Inazawa, Aichi)

Cervical artificial disc -starting clinical use in Japan- ................................. 107
Toshitaka YOSHII, M.D.
(Tokyo Medical and Dental University, Bunkyo, Tokyo)

14:15~14:30(15min.)

General Assembly
President  Makoto TANIGUCHI, M.D.
Announcement of President-elect
Masashi NEO, M.D.
(Department of Orthopedic Surgery, Osaka Medical College, Osaka)

14:30~14:45  Topics from poster sessions today

15:45~16:45(60min.)

Spine Leader's Lecture 3(Postgraduate Lecture of JOA)
Chairperson  Takashi TOMITA, M.D.

15:45~16:15(30min.)

SLL3-1  Yujiro TAKESHITA, M.D. (Department of Orthopaedic and Spine Surgery, Yokohama Rosai Hospital, Kanagawa)
Spine surgery for pediatric and congenital disorder cases ............... 127
(Japan Medical Dynamic Marketing, INC)

16:15~16:45(30min.)

SLL3-2  Seiji OTSUKA, M.D. (Spine Surgery and Department of Orthopedic Surgery, Toyokawa City Hospital, Toyokawa, Aichi)
Pros and cons of Cortical bone trajectory: further modification and devises ................................ 129
(Japan Medical Dynamic Marketing, INC)

16:45~16:50  Break
Main Theme 1  Adult spinal deformities
Chairpersons Masafumi MACHIDA, M.D., Kei MIYAMOTO, M.D.

**MT1-1** Problems and solutions in geriatric spine surgery .......................... 170
Mehmet ZILELI, M.D.
(Neurosurgery Department in Ege University, Izmir, Turkey)

**MT1-2** Adult spinal deformity: how aggressive should we be in treating
the aged spine ................................................................. 171
Bernhard MEYER, M.D.
(Department of Neurosurgery, Technical University of Munich, Munich, Germany)

**MT1-3** A new method of assessing sagittal balance ................................. 172
Aiden DEVITT, M.D.
(Galway University Hospitals, Galway, Ireland)

**MT1-4** Minimum 5 year follow up results of PSO for adult spinal deformity ..... 173
Yusuke NAKAO, M.D., et al.
(Orthopedic Department, Sanraku Hospital, Chiyoda, Tokyo)

**MT1-5** Oblique lumbar interbody fusion combined with minimally invasive
percutaneous posterior instrumentation for adult spinal deformity .......... 174
Kenji FUKAYA, M.D.
(Dept. of Neurosurgery, Ayabe renaissance hospital, Ayabe, Kyoto)

**MT1-6** Radiological improvements in lumbar lordosis and indirect decompression
after combined XLIF and PPS surgeries with additional anterior column
realignment procedure ACR ..................................................... 175
Yoichi TANI, M.D., et al.
(Orthopedic Surgery, Kansai Medical University, Hirakata, Osaka)

**MT1-7** Consideration of adult spinal deformity with OLIF and PPS .............. 176
Mamoru MATSUO, M.D., et al.
(Neurosurgery Department, Inazawa Municipal Hospital, Inazawa, Aichi)

18:20~18:25  Break

18:25~19:25 (60min.)

Spine Leader’s Lecture 5 (Postgraduate Lecture of JOA)
18:25~18:55 (30min.)
Chairpersons Hisanori MIHARA, M.D.
**SLL5-1**  
Masao KODA, M.D. (Department of Orthopedic Surgery, University of Tsukuba, Tsukuba, Ibaraki)  
Risk management for surgical complications of anterior cervical spine surgery  
(Stryker Japan K.K.)

18:55〜19:25(30min.)  
Chairperson  Shigeo SANO, M.D.

**SLL5-2**  
Yukoh OHARA (Shin-Yurigaoka general hospital, Kawasaki, Kanagawa)  
What’s happen after dural injury, and what can we do for it?  
(Teijin Pharma Limited)
Free Papers 1
Adult spinal deformities, Lumber fixation
Chairpersons Satoru SHIMIZU, M.D., Kenichi WATANABE, M.D.

F1-1
Dynamization system in long fusion for prevention of proximal junctional kyphosis and failure
Nozomu OHTOMO, M.D., et al.
(Department of Spine and Orthopaedic Surgery, Japanese Red Cross Medical Center, Shibuya, Tokyo)

F1-2
The effect of new method named 'Cross-band stabilization' to prevent proximal junctional failure
Fumihiko OGUCHI, M.D., et al.
(Department of Spine/Spinal Cord Center, Sanraku Hospital, Chiyoda, Tokyo)

F1-3
Free hand insertion technique of novel iliac screw trajectory for lumbosacral fixation: Medial Iliac Screw
Koji ISHIKAWA, M.D., et al.
(Sanraku Hospital, Spine and Spinal Cord Center, Chiyoda, Tokyo)

F1-4
Clinical reports of Tritanium PL cage for posterior lumbar interbody fusion at L5 / S
Sho AKAHORI, M.D., et al.
(Neurosurgery Department, Inazawa Municipal Hospital, Inazawa, Aichi)

F1-5
Preoperative imaging for adult spinal deformity surgery using rod trajectory plotting method
Sei TERAYAMA, M.D., et al.
(Orthopedic Department, Shunyokai Central Hospital, Kimotsuki, Kagoshima)

F1-6
Lumbosacral Fixation using Dual LSIT Low profile S1-iliac trajectory
Kiyohiro NAKAMICHI, M.D., et al.
(Keiyu Orthopedic Hospital Keiyu Spine Center, Tatebayashi, Gunma)

F1-7
Lumbar Lordosis LL of Preoperative Fulcrum Backward Bending Approximates Prone Position LL After Lateral Interbody Fusion LIF in Adult Spinal Deformity ASD Patients
Takashi HASHIMOTO, M.D., et al.
(Sangubashi Spine Surgery Hospital, Chiyoda, Tokyo)
# Free Papers 2

**Complications after thoracic/lumbar fixation**

Chairpersons Masahito HARA, M.D., Hhitoshi KONO, M.D.

<table>
<thead>
<tr>
<th>F2-1</th>
<th>Investigation of pathology of thoracic myelopathy in adult spinal deformity</th>
<th>208</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kazuhiro KOHATA, M.D., et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Sanraku Hospital. Department of Orthopedics, Chiyoda, Tokyo)</td>
<td></td>
</tr>
<tr>
<td>F2-2</td>
<td>Surgical management for delayed neurological symptom after spinal compression fracture</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>Youhei YOKOYAMA, M.D., et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)</td>
<td></td>
</tr>
<tr>
<td>F2-3</td>
<td>Residual kyphotic deformity after posterior short fusion for neurological deficits following osteoporotic vertebral collapse</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>Atsushi NAKANO, M.D. et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Dept. of Orthop. Surg. Osaka Medical College, Takatsuki, Osaka)</td>
<td></td>
</tr>
<tr>
<td>F2-4</td>
<td>Vertebral body reconstruction from posterior approach by posterior insertion of an HA spacer for delayed paralysis due to osteoporotic vertebral fracture</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>(Dept. of Spine Surg., JCHO Tokyo Yamate Medical Center, Shinjuku, Tokyo)</td>
<td></td>
</tr>
<tr>
<td>F2-6</td>
<td>A case of lumbar facet cyst in intervertebral foramen due to adjacent segmental disease after posterior spinal fusion</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>Yasuhiro CHIBA, M.D., et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Neurosurgery Department, Hokkaido Neurosurgical Memorial Hospital, Sapporo, Hokkaido)</td>
<td></td>
</tr>
<tr>
<td>F2-7</td>
<td>Accuracy of O-arm Navigation guided pedicle screw for the patients who underwent posterior fusion surgery</td>
<td>213</td>
</tr>
<tr>
<td></td>
<td>Hidenori MATSUOKA, M.D., et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Center for Minimally Invasive Spinal Surgery, Shinyurigaoka General Hospital, Kawasaki, Kanagawa)</td>
<td></td>
</tr>
</tbody>
</table>

10:00〜10:05

Break

10:05〜11:05 (60 min.)

**Spine Leader's Lecture 2 (Postgraduate Lecture of JOA)**

10:05〜10:35 (30 min.)

Chairperson Motoo KUBOTA, M.D.
Spinal problems in Parkinson’s disease from the viewpoint of pathophysiology

Surgical treatment strategy for spinal deformity related to Parkinson’s disease: Role for orthopaedic spine surgeons

The strategy of sagittal alignment reconstruction in patients with lumbar degenerative scoliosis: Is LL= PI ± 9° suitable for Asian patients and what are our correction targets?

Historical course of surgical treatment to 3 patients with myelopathy due to athetosis
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3-2</td>
<td>What is precise surgical intervention in 3 cases with myelopathy due to head drop syndrome associated with cervical spondylosis</td>
<td>Eiichiro HONDA, M.D., et al.</td>
<td>Department of Neurospinal surgery, Shiroishikyoritsu hospital, Kishima-gun, Saga</td>
</tr>
<tr>
<td>F3-3</td>
<td>Reconstruction of the C1 lateral mass with an expandable titanium cage after resection of metastatic spinal tumor with vertebral artery preservation</td>
<td>Toshihiro INUI, M.D., et al.</td>
<td>Spine center, Department of Neurosurgery, Tominaga Hospital, Osaka, Osaka</td>
</tr>
<tr>
<td>F3-4</td>
<td>The novel technique of screw insertion at craniocervical junction with vertebral artery anomaly</td>
<td>Nobuyuki SHIMOKAWA, M.D., et al.</td>
<td>Department of Neurosurgery, Tsukazaki Hospital, Himeji, Hyogo</td>
</tr>
<tr>
<td>F3-5</td>
<td>Posterior Reduction Arthrodesis of Irreducible Pediatric Atlantoaxial Subluxation using Spinal Instrumentation</td>
<td>Toru YAMAGATA, M.D., et al.</td>
<td>Department of Neurosurgery, Osaka City General Hospital, Osaka, Osaka</td>
</tr>
<tr>
<td>F3-6</td>
<td>Anterior surgery by a trans-sternoclavicular approach for the treatment of pyogenic discitis of the upper spine following posterior thoracic fixation; A case report</td>
<td>Yuichil KONDO, M.D., et al.</td>
<td>Department of Orthopaedic Surgery, Gifu Municipal Hospital, Gifu, Gifu</td>
</tr>
</tbody>
</table>

13:20〜14:15(55min.)

Free Papers 4

Minimally invasive surgeries

Chairpersons Izumi KOYANAGI, M.D., Koji SATO, M.D.

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4-1</td>
<td>Factors affecting technical difficulties in PED Percutaneous Endoscopic Discectomy surgery and measures for the safe and effective procedure</td>
<td>Kuniyoshi TSUCHIYA, M.D., et al.</td>
<td>Dept. of Orthopedics, JCHO Kyushu Hospital, Kitakyushu, Fukuoka</td>
</tr>
<tr>
<td>F4-2</td>
<td>Intra- and post-operative complications of full-endoscopic lumbar surgery</td>
<td>Koichiro ONO, M.D., et al.</td>
<td>Center for Spinal Surgery, Nippon Koukan Hospital, Kawasaki, Kanagawa</td>
</tr>
<tr>
<td>F4-3</td>
<td>Intra- and post-operative bleeding control with FLOSEAL R</td>
<td>Junichi UKAI, M.D., et al.</td>
<td>Orthopedic Department, Japanese Red Cross Nagoya Daini Hospital, Nagoya, Aichi</td>
</tr>
</tbody>
</table>
800 cases of Microsurgical anterior cervical foraminotomy MacF for cervical radiculopathy

Naoto TSUCHIYA, M.D., et al.
(Department of Spine Surgery, Shinagawa Shisyokai Hospital, Shinagawa-ku, Tokyo)

Results of minimal cervical laminectomy MicCeL for cervical myelopathy

Masahiro OZAKI, M.D., et al.
(Keiyu Orthopedic Hospital Keiyu Spine Center, Tatebayashi, Gunma)

Good clinical outcomes and fusion rate of less invasive facet fusion with CBT screw for degenerative lumbar spondylolisthesis

Tomohiro MIYASHITA, M.D., et al.
(Spine Center, Matsudo City General Hospital, Matsudo, Chiba)

Assessment of the cement leakage in the treatment of osteoporotic vertebral fractures with balloon kyphoplasty

Yu YAMAMOTO, M.D., et al.
(Department of Neurosurgery, Inazawa municipal hospital, Inazawa, Aichi)

15:45〜16:45 (60min.)

Spine Leader’s Lecture 4 (Postgraduate Lecture of JOA)

15:45〜16:15 (30min.)
Chairperson Shigeto EBATA, M.D.

Multi-level corrective fixation surgery using OLIF and L5/S PLIF

Masahito HARA, M.D. (Neurosurgery Department, Inazawa Municipal Hospital, Inazawa, Aichi)
(Stryker Japan K.K.)

16:15〜16:45 (30min.)
Chairperson Tomoaki TOYONE, M.D.

Decision making about fusion level for surgical correction of adult spinal deformity

Eiji ABE, M.D. (Dept. of Orthopedic Surgery, Akita Kousei Medical Center, Akita, Akita)
(MIZUHO Corporation)

16:45〜16:50 Break
Free Papers 5 Debate Session
Chairpersons Motoo KUBOTA, M.D., Masatoshi SUMI, M.D.

F5-1
Case 2: Surgical intervention to achieve stability and neural decompression of the cranio-vertebral junction
Muneyoshi YASUDA, M.D.
(Department of Neurological Surgery, Ichinomiya-Nishi Hospital Ichinomiya, Aichi)

F5-2
Case 2: I will do C1 decompressive laminectomy before neurologic deterioration.
Tack Geun CHO, M.D.
(Department of Neurosurgery, Hallym University Kangnam Sacred Heart Hospital, Seoul, Korea)

F5-3
Case 2: Surgical treatment of retroodontoid pseudotumor with diffuse idiopathic skeletal hyperostosis
Hisaaki UCHIKADO, M.D.
(Uchikado Neuro-Spine Clinic, Fukuoka, Fukuoka)

F5-4
Case 2: Surgical strategy for retro-odontoid pseudotumors without rheumatoid arthritis
Shinji YAMAMOTO, M.D., et al.
(Department of Neurosurgery, Ohnishi Neurological Center, Akahi, Hyogo)

F5-5
Case 3: Cervical root enlargement: Tumorous lesion oriented approach
Moo Sung KANG, M.D.
(Department of Neurosurgery, Catholic Kwandong University, College of Medicine, International St. Mary's Hospital, Korea)

F5-6
Case 4: Decompression alone surgery for OLF
Yasuhiro NAKAJIMA, M.D., et al.
(Department of Neurosurgery, Daido Hospital Nagoya, Aichi)

Free Papers 6
Spinal tumors, Spinal vascular lesions
Chairpersons Toshihiro TAKAMI, M.D., Keisuke TAKAI, M.D.

F6-1
en bloc resection of gigantic cervical chrdroma; a case report
Yoshitaka MATSUBAYASHI, M.D., et al.
(Department of orthopaedic surgery, University of Tokyo, Bunkyo, Tokyo)
<table>
<thead>
<tr>
<th>F6-2</th>
<th>The surgical strategy of the foramen magnum meningioma</th>
<th>234</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Masahiro AOYAMA, M.D., et al. (Department of Neurological Surgery, Aichi Medical University, Nagakute, Aichi)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F6-3</th>
<th>Surgical outcome of intramedullary spinal cord ependymomas</th>
<th>235</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minoru HOSHIMARU, M.D., et al. (Shin-aikei Spine Center, Katano, Osaka)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F6-4</th>
<th>Usefulness of intraoperative ultrasound in spinal tumor surgery</th>
<th>236</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daichi KAWAMURA, M.D., et al. (Department of Neurosurgery, Jikei University School of Medicine, Minato, Tokyo)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F6-5</th>
<th>ICG-guided surgery for spinal intramedullary tumors: from intraoperative assessment of vascular flow dynamics to predicting functional outcomes</th>
<th>237</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toshihiro TAKAMI, M.D., et al. (Department of Neurosurgery, Osaka City University Graduate School of Medicine, Osaka, Osaka)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F6-6</th>
<th>Microsurgical and endovascular treatments of spinal extradural arteriovenous fistulas</th>
<th>238</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Keisuke TAKAI, M.D., et al. (Department of Neurosurgery, Tokyo Metropolitan Neurological Hospital, Fuchu, Tokyo)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F6-7</th>
<th>Surgical management of craniocervical junction arteriovenous fistula</th>
<th>239</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hiroki KURITA, M.D., et al. (Department of Cerebrovascular Surgery, International Medical Center, Saitama Medical University, Hidaka, Saitama)</td>
<td></td>
</tr>
</tbody>
</table>

18:21~18:25 Break

18:25~19:25 (60min.)

**Spine Leader's Lecture 6 (Postgraduate Lecture of JOA)**

18:25~18:55 (30min.)

Chairperson Etsuro YORIMITSU, M.D.

<table>
<thead>
<tr>
<th>SLL6-1</th>
<th>Yuichi TAKANO, M.D. (Department of Orthopaedics, Iwai Orthopaedic Medical Hospital, Edogawa, Tokyo)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significance of preoperative assessment and drug treatment for osteoporosis patients requiring spinal surgery</td>
</tr>
<tr>
<td></td>
<td>(Asahi Kasei Pharma Corporation)</td>
</tr>
</tbody>
</table>

18:55~19:25 (30min.)

Chairperson Koji SATO, M.D.
SLL6-2  Takanori SAITO, M.D. (Dept. of Orthopedic surgeon Kansai Medical University, Hirakata, Osaka)

A new method in percutaneous pedicle screw insertion in MISt surgery for shortening of X-ray exposure time

(141 (Teijin Nakashima Medical Co., Ltd.)
14 September (Fri.)

Poster Session Room Hotaka/Rokko (3F)

14:45〜15:45 (60min.)

Poster Session 1-1
Craniocervical junction and cervical spine
Chairperson Nobuyuki SHIMOKAWA, M.D.

P1-I-1 Anterolateral approach to the retroodontoid lesion .................................................. 264
Tsuyoshi WATANABE, M.D., et al.
(Department of Neurosurgery, Shonan Kamakura General Hospital, Kamakura, Kanagawa)

P1-I-2 Occipito-cervical fusion for pediatric craniocervical junction injury .......... 265
HIROAKI KIMURA, M.D., et al.
(Orthopedic Department, Hyogo Prefectural Amagasaki General Medical Center, Amagasaki, Hyogo)

P1-I-3 2 Case reports of familial os odontoideum .......................................................... 266
Hidetoshi SATO, M.D., et al.
(Department of Neurosurgery, Tsukazaki Hospital, Himeji, Hyogo)

P1-I-4 Anterior decompression and fusion with complete removal of the Luschka joint for C8 radiculopathy .......................................................... 267
Kazunobu KIDA, M.D., et al.
(Department of Orthopedic Surgery, Kubokawa Hospital, Takaoka, Kochi)

P1-I-5 Anterior cervical foraminotomy for C4 cervical radiculopathy ............... 268
Tetsuryu MITSUYAMA, M.D., et al.
(Shinagawa Shishoukai Hospital, Shinagawa, Tokyo)

P1-I-6 One stage laminoplasty and posterior herniotomy for the treatment of cervical canal stenosis and cervical disc herniation ............................. 269
Yoshifumi KAWANABE, M.D., et al.
(Department of Neurosurgery, Shizuoka General Hospital, Shizuoka, Shizuoka)

P1-I-7 Anterior cervical disectomy and fusion with dynamic plate for elderly CSM with Cervical anterolisthesis ......................................................... 270
Ryo KADOTA, M.D., et al.
(Orthopedic Department, Numazu City Hospital, Numazu, Shizuoka)
Comparison of segmental mobility between after cervical laminoplasty and laminectomy ................................. 271
Yoh KUMANO, M.D., et al.
(Department of Orthopaedic Surgery, Sagamihara Hospital, National Hospital Organization, Sagamihara, Kanagawa)

Poster Sessio 1-2
Cervical Spine 1
Chairperson Akiro HIGASHIKAWA, M.D.

Unidirectional porous hydroxyapatite UDHAP cervical laminoplasty spacer REGENOS is fragile ..................................................... 272
Akiro HIGASHIKAWA, M.D., et al.
(Orthopedic Department, Kanto Rosai Hospital, Kawasaki, Kanagawa)

Anterior cervical discectomy and fusion using a rectangular titanium-coated PEEK stand-alone cage: Preliminary image analysis of cage subsidence ... 273
Yuta NAKANISHI, M.D., et al.
(Department of Neurosurgery, Osaka City University Hospital, Osaka, Osaka)

Decreased Subsidence Occurs in Titanium Coated PEEK Cage than Full Body Titanium Cage ............................................. 274
Motoyuki IWASAKI, et al.
(Department of Neurosurgery, Otaru General Hospital, Otaru, Hokkaido)

A Study on Hinge Fracture in Open-door Cervical Laminoplasty .......... 275
Masanori AOKI, M.D.
(Spine Center, Yukioka Hospital, Osaka, Osaka)

The Effect of Hyaluronic Acid Based Hydrogels in the Treatment of Annular Defects of the Intervertebral Disc in an In-vivo Rat-Tail Model of Degeneration ............................................................. 276
David TIERNAN M.D., et al.
(Curam, Centre for Research in Medical Devices, National University of Ireland, Galway, Ireland)

Investigation of Preoperative Marker Use in Anterior Decompression and Fusion ......................................................... 277
Ryohei ANNEN, M.D., et al.
(Orthopedic Department, Japanese Red Cross Medical Center, Shibuya, Tokyo)

Minimally Invasive Percutaneous Pedicle Screw Placement using an Illuminated Retractor for Decreasing the Risks Radiation Exposure .......... 278
Takeshi OHKI, M.D., et al.
(Orthopedic Department, Yuki Hospital, Yuki, Ibaraki)
Usefulness of the postero-lateral approach for osteosynthesis in Hangman fracture
Yoshiaki ODA, M.D., et al.
(Orthopedic Department, Kouchi Health Science Center, Kouchi, Kouchi)

Poster Session 1-3
Thoracic spine
Chairperson Ikuo AITA, M.D.

A case report of thoracic spinal cord herniation repaired with absorbable dural substrate
Ryosuke TSUCHIYA, M.D., et al.
(Orthopedic Department, Toranomon Hospital, Minato, Tokyo)

A surgical tips for idiopathic spinal cord herniation: a technical case report
Yasuhiro TAKESHIMA, M.D., et al.
(Department of Neurosurgery, Nara Medical University, Kashihara, Nara)

A case of intradural disc herniation that intraoperative ultrasonography was useful for diagnosis
Yoshiharu NAKAYA, M.D., et al.
(Department of Orthopedic Surgery, Osaka Medical College, Takatsuki, Osaka)

Giant thoracic disc herniation surgery method and monitoring and navigation
Isao KITAHARA, M.D., et al.
(The Department of Neurosurgery, Chiba Tokushukai Hospital, Funabashi, Chiba)

Two cases of lumbar extradural cystic lesion diagnosed as ligamentum flavum cyst
Yasuomi NONAKA, M.D., et al.
(Department of Neurosurgery Spinal Surgery, Heiwa Hospital Yokohama, Kanagawa)

A case of abdominal pain and ileus following spinal cord stimulator implantation
Naoki HIGASHIYAMA, M.D., et al.
(Department of Spinal Surgery, Research Institute for Brain and Blood Vessels, Akita, Akita)

Thoracic burst fracture presenting hemothorax just after operation by percutaneous pedicle screw - a case report -
Kento TAKEBAYASHI, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)
A case of multiple abscesses in whole body after injection into posterior neck  ........................................ 287
Yuichi YOSHIDA, M.D., et al.
(Orthopedic Department, Musashino Red Cross Hospital, Musashino, Tokyo)

Poster Session 1-4
Lumbar spine 1
Chairperson Kei MIYAMOTO, M.D., et al.

Could gain of local lordosis decrease Adjacent Segment Diseases after lumbar interbody fusion for single level?  ........................................ 288
Sumito KINJO, M.D., et al.
(Spine Center, Department of Orthopaedic Surgery, Niigata Central Hospital, Niigata, Niigata)

The effectiveness of stabilization and surgical results of dynamic stabilization with SSCS for unstable degenerative lumbar spinal disease - minimum 3 years follow up ........................................ 289
Shuntaro TSUCHIDA, M.D., et al.
(Spine center, Fuji Toranomon Orthopaedic Hospital, Gotemba, Shizuoka)

Clinical results of Anteroposterior combined surgery for osteoporotic vertebral fractures using X-core2 ........................................ 290
Yoshifumi KUDO, M.D., et al.
(Dept of Orthop Surg, Showa Univ., Shinagawa, Tokyo)

The spinal fusion with PPS and hook by mini incision for thoracolumbar burst fractures ........................................ 291
Takeshi OHKI, M.D., et al.
(Orthopedic Department, Yuki Hospital, Yuki, Ibaraki)

Unilateral versus Bilateral Pedicle Screw fixation in LLIF for degenerative spondylolisthesis ........................................ 292
Takahiro HAYASHI, M.D., et al.
(Orthopedic Department, Kure Kyosai Hospital, Kure, Hiroshima)

Surgical results of lateral decubitus position OLIF & PPS simultaneous fixation by the O-arm navigation ........................................ 293
Yoshihiro FUJIWARA, M.D., et al.
(Okayama Rousai Hospital, Okayama, Okayama)

Rod repair and sacro-ilac dynamization for rod fracture after deformity correction for adult spinal deformity ........................................ 294
Kei MIYAMOTO, M.D., et al.
(Orthopedic Department, Gifu Municipal Hospital, Gifu, Gifu)
**P1-4-8** 3D printed Tubular guides for pedicle screw placement: MySpine technology .......................... 295
Hiroshi MARUYAMA, M.D., et al.
(Orthopedic Department, Showa University, Shinagawa, Tokyo)

**P1-4-9** Surgical outcomes of modified microscopic bilateral decompression via a unilateral approach for lumbar canal stenosis .......................... 296
Kazuhiro Yoshimura, M.D., et al.
(Department of Neurosurgery, Osaka Neurological Institute, Toyonaka, Osaka)

---

**Poster Session 1-5**
**Lumbar spine 1**
Chairperson Satoshi OGIHARA, M.D., et al.

**P1-5-1** Bilateral vertebral artery injuries in blunt cervical spinal injury with dislocation: a case report .......................... 297
Keitaro TADA, M.D., et al.
(Kochi Health Sciences Center, Kochi, Kochi)

**P1-5-2** Bilateral positional vertebral artery occlusion PVAO causing cerebellar infarction; A case report .......................... 298
Kazunori SHIBAMOTO, M.D., et al.
(Spine center, Saso Hospital, Nisinomiya, Hyogo)

**P1-5-3** A case of bladder and bowel dysfunction after wrong level lumbar laminoplasty .......................... 299
Junya MIYAHARA, M.D., et al.
(Department of Spine and Orthopaedic surgery, Japan Red Cross Medical Center, Shibuya, Tokyo)

**P1-5-4** A Case of Immediate Post-surgical Spinal Cord Herniation .......................... 300
Ryo SUGAWARA, M.D., et al.
(Department of Orthopedics, Jichi Medical University, Shimotsuke, Tochigi)

**P1-5-5** A case of spinal cord herniation after cervical surgery .......................... 301
Satoru MATSUTANI, M.D., et al.
(Orthopedic Department, Japanese Red Cross Musashino Hospital, Musashino, Tokyo)

**P1-5-6** Treatment of thoracic dural defect which caused superficial siderosis ........................................... 302
Ado TAMIYA, M.D., et al.
(Department of Neurological Surgery, Chiba University Hospital Graduate School of Medicine, Chiba, Chiba)

**P1-5-7** A case of cerebrospinal fluid hypovolemia syndrome with benign course of cerebral hemorrhage receiving conservative treatment and with malignant course of cerebral herniation .......................... 303
Ryo YAMAMURA, M.D., et al.
(Dept. of Orthop.Surg., Showa Univ. School of Medicine, Shinagawa, Tokyo)
Symposium 2 Procedure for introducing new devices from bench to bedside
Chairpersons Makoto TANIGUCHI, M.D. Takashi YAMAZAKI, M.D.

**S2-1**
The Process of Introducing Cervical Artificial Disc into Japan: A Regulatory Perspective
Yoko KOBAYASHI
(DPharmaceuticals and Medical Devices Agency (PMDA), Tokyo)

**S2-2**
Background of the new technology introduction
Katsuhiro GOTO
(Medtronic Sofamor Danek, Co., Ltd., Tokyo)

**S2-3**
Review process to take a new medical device with both safety and speed into Japanese clinical sites - a case study from company side
Kiyomi FUJIWARA
(Zimmer Biomet G.K., Tokyo)

**S2-4**
What should a surgeon do to introduce novel technique?
Takashi YAMAZAKI, M.D.
(Department of Orthopedic Surgery, Musashino Red Cross Hospital, Musashino, Tokyo)

**S2-5**
How can the new administrative regulations efficiently control new medical technologies?
Yasushi KODAMA, MD, LL.M, PhD
(Attorney at law, Visiting Professor of Hitotsubashi University, Tokyo)

10:00~10:05
Break

10:05~11:05 (60min.)

**Spine Leader's Lecture 7 (Postgraduate Lecture of JOA)**
Chairperson Makoto TANIGUCHI, M.D.
Yasushi KODAMA, MD, LL.M, PhD (Attorney at law, Visiting Professor of Hitotsubashi University, Tokyo)

Current trend of medical disputes and hospital ethics .......................... 143

11:05~11:20 Break

11:20~12:20 (60min.)

Luncheon Seminar 3 (Postgraduate Lecture of JOA)

Chairperson Yohichi AOTA, M.D.

Yasuo OHORI, M.D. (Sangubashi Spine Surgery Hospital, Shibuya, Tokyo)

Development and future expectation on MISt surgery for degenerative spine ......................................................... 161 (Zimmer Biomet G.K.)

12:20~12:30 Break

12:30~12:45 Topics from poster sessions today

14:00~15:00 (60min.)

Spine Leader’s Lecture 9 (Postgraduate Lecture of JOA)

Chairperson Nobuhiro HARA, M.D.

Shigeo SANO, M.D. (Spine Center, Sanraku Hospital, Chiyoda, Tokyo)

How to calculate the accurate correction angle in thoracic PSO and asymmetrical PSO - By using the Sanraku formula - ...................... 149 (PETER BREHM JAPAN)

14:30~15:00 (30min.)

Chairperson Takahiro IIDA, M.D.

Yusuke NAKAO, M.D. (Spine Center, Sanraku Hospital, Chiyoda, Tokyo)

Surgical technique of spinal osteotomy for adult spinal deformity ...... 151 (KYOCERA Corporation)
15:00〜16:00 (60min.)

Tea Time Seminar 1 (Postgraduate Lecture of JOA)
Chairperson Kiyoshi KUMANO, M.D.

TT1 Takashi YAMAZAKI, M.D.
The concept and technique to avoid failure in common surgery  165
(HOYA Technosurgical Corporation)
(Ammtec Inc.)

16:00〜16:05 Break

16:05〜17:05 (60min.)

Hands-on Session 1 (Postgraduate Lecture of JOA)

HO1 Shigeo SANO, M.D., Yusuke NAKAO, M.D. (Spine Center, Sanraku Hospital, Chiyoda, Tokyo)
PSO at Thoracic, Lumbar, and Sacral levels-For the safe vertebral body osteotomy  168
(NexMed International Co., Ltd.)

17:10〜18:00 (50min.)

Free Papers 9 Minimally invasive surgeries 2
Chairpersons Takamitsu TOKIOKA, M.D. Kenichi WATANABE, M.D.

F9-1 Usefulness and limitation of cortical bone trajectory - retrospective assessment of mid-term follow up - 251
Kento TAKEBAYASHI, M.D., et al.
(Department of Spinal surgery, Kameda Medical Center, Kamogawa, Chiba)

F9-2 Minimally invasive cervical pedicle screw fixation inserted reversely on supine position  252
Takamitsu TOKIOKA, M.D., et al.
(Department of Orthopedic Surgery, Kochi Health Sciences Center, Kochi, Kochi)

F9-3 Evaluation of New technique for inserting S2-Alar-Iliac screws using technology of Mixed Reality  253
Yoh KUMANO, M.D., et al.
(Department of Orthopaedic Surgery, Sagamihara Hospital, National Hospital Organization, Sagamihara, Kanagawa)
The accuracy of percutaneous pedicle screw placement in the lateral decubitus position
Shinya ARATAKI, M.D., et al.
(Orthopedic Department, Kagawa Rosai Hospital, Marugame, Kagawa)

Semi-Circumferential Decompression: Microsurgical Total en-bloc Ligamentum Flavectomy to Treat Lumbar Spinal Stenosis
Shigeo UEDA, M.D., et al.
(Shin-ai Spine Center, Katano Hospital, Katano, Osaka)

Atraumatic technique to limit bleeding and reduce operative time for less invasive spinal surgery and development of new forceps
Masato NOJI, M.D., et al.
(Noji neurological SHIBIRE clinic, Atsugi, Kanagawa)

Realignment effect of LIF for kyphotic deformity after osteoporotic vertebral fracture
Masayuki ISHIHARA, M.D., et al.
(Orthopedic Department, Kansai Medidal University Medical Center, Moriguchi, Osaka)

18:00〜18:15 Break

18:15〜18:35

~Closing Remarks~
President Makoto TANIGUCHI, M.D.
Main Theme 3
Minimally invasive surgeries
Chairpersons Yukoh OHARA, M.D. Koichi SAIRYO, M.D.

**MT3-1**
Innovative procedure to reduce the invasiveness of lumbar interbody fusion with percutaneous endoscopic lumbar discectomy
Yoshihiro ISHIHAMA, M.D., et al.
(Orthopedic Department, Tokushima University, Tokushima, Tokushima)

**MT3-2**
Advantages and problems of bilateral decompression through unilateral approach by four different endoscopes for lumbar spinal canal stenosis
Fujio ITO, M.D., et al.
(Aichi Spine Institute, Niwa, Aichi)

**MT3-3**
Paradigm Shift by Integrated Operation Room
Masato TANAKA, M.D., et al.
(Department of Orthopaedic Surgery, Okayama Rosai Hospital, Okayama, Okayama)

**MT3-4**
Minimum invasive spinal surgery for osteoporotic vertebral fracture with neurological dysfunction
Hisaaki UCHIKADO, M.D., et al.
(Uchikado Neuro-Spine Clinic, Fukuoka, Fukuoka)

**MT3-5**
Five-year postoperative good outcomes of less invasive facet fusion with percutaneous pedicle screw for degenerative lumbar spondylolisthesis
Tomohiro MIYASHITA, M.D., et al.
(Spine Center, Matsudo City General Hospital, Matsudo, Chiba)

**MT3-6**
Microendoscopy assisted lumbar lateral interbody fusion: ME-LIF
Motohide SHIBAYAMA, M.D., et al.
(Aichi Spine Hospital, Inuyama, Aichi)

**MT3-7**
Relative surgical indications of BKP
Yasuhiro NAKAJIMA, M.D., et al.
(Department of Neurosurgery, Daido Hospital, Nagoya, Aichi)
Main Theme 4
Countermeasures against complications
Chairpersons Shigeo SANO, M.D.  Hideo HOSOE, M.D.

**MT4-1**
Unexpected reoperation rate within 1 year is suitable for the quality indicator of spine surgery ................................. 194
Nobuhiro HARA, M.D., et al.
(Dept.of Orthopaedics, Musashino Red Cross Hospital, Musashino, Tokyo)

**MT4-2**
Management of complications in anterior cervical fusion ..................... 195
Izumi KOYANAGI, M.D., et al.
(Department of Neurosurgery, Hokkaido Neurosurgical Memorial Hospital, Sapporo, Hokkaido)

**MT4-3**
Severe intracranial complication due to dural defect .......................... 196
Masahiro HIRAHATA, M.D., et al.
(Department of Orthopaedic Surgery, Teikyo University School of Medicine, Itabashi, Tokyo)

**MT4-4**
Risk assessment of lumbar segmental artery on intervertebral disc during lateral interbody fusion ........................................ 197
Taketoshi KUSHIDA, M.D., et al.
(Department of Orthopaedic Surgery, Kansai Medical University Hospital, Hirakata, Osaka)

**MT4-5**
Incidence of vertebral artery injuries and herniated disc fragments in cervical facet dislocations - prevention of reduction induced neurological deterioration ......................................................... 198
Takamitsu TOKIOKA, M.D., et al.
(Depart. of Orthopedic surgery, Kochi Health Science Center, Kochi, Kochi)

**MT4-6**
In Vitro Evaluation of the Anatomical Shape of the Vertebrae for Avoidance of Wrong-level Thoracic Spine Surgery ................................. 199
Kiyoshi ITO, M.D., et al.
(Department of Neurosurgery and Shinshu University, School of Medicine, Matsumoto, Nagano)

**MT4-7**
Efficient search of venous thromboembolism in the perioperative period of lumbar spine disease ................................................................. 200
Takashi IMURO, M.D., et al.
(Orthopedic Department, Atsugi city Hospital, Atsugi, Kanagawa)

10:00~10:05
Break
10:05〜11:05 (60min.)

Spine Leader's Lecture 8 (Postgraduate Lecture of JOA)

10:05〜10:35 (30min.)
Chairperson  Katsushi TAKESHITA, M.D.

SLL8-1 So KATO, M.D. (Orthopedic Department, Faculty of Medicine, The University of Tokyo, Bunkyo, Tokyo)
Clinical practice of spinal surgery in North America .......................... 145
(NexMed International Co., Ltd.)

10:35〜11:05 (30min.)
Chairperson  Shigeo UEDA, M.D.

SLL8-2 Motoo KUBOTA, M.D. (Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)
Biomechanical Analysis using Finite Element Method ....................... 147
(Research Center of Computational Mechanics, Inc.)

11:05〜11:20
Break

11:20〜12:20 (60min.)

Luncheon Seminar 4 (Postgraduate Lecture of JOA)

Chairperson  Junichi KUNOGI, M.D.

LS4 Hideki OTA, M.D. (OITA ORTHOPEDIC HOSPITAL, Oita, Oita)
Usefulness and limitation of non-fusion stabilization for lumbar degenerative disease with instability ............................................ 163
(OHWA TSUSHO CO., LTD)

12:20〜12:30
Break

14:00〜15:00 (60min.)

Spine Leader's Lecture 10 (Postgraduate Lecture of JOA)

14:00〜14:30 (30min.)
Chairperson  Hisanori MIHARA, M.D.
Kei MIYAMOTO, M.D. (Gifu Municipal Hospital, Gifu, Gifu)
Surgical treatment for spinal pathologies at cervico-thoracic junction
(GLOBUS MEDICAL JAPAN, INC.)

14:30〜15:00(30min.)
Chairperson Takeshi UMEBAYASHI, M.D.

Kenichiro SAKAI, M.D. (Orthopedic Department, Saiseikai Kawaguchi General Hospital, Kawaguchi, Saitama)
Surgical choice and ingenuity of anterior and posterior procedures for cervical degenerative diseases
(B. Braun Aesculap Japan Co., Ltd.)

15:00〜16:00(60min.)

Tea Time Seminar 2 (Postgraduate Lecture of JOA)
Chairperson Takanori SAITO, M.D.

Yasushi OSHIMA, M.D.
Complications in less invasive spine surgery
(NexMed International Co., Ltd.)

16:00〜16:05 Break

16:05〜17:05(60min.)

Hands-on Session 2 (Postgraduate Lecture of JOA)
Masashi NEO, M.D. (Department of Orthopedic Surgery, Osaka Medical College, Takatsuki, Osaka)
Posterior cervical instrumentation using pre-and intra-operative-CT-based navigation system
(Johnson and Johnson K.K. DePuy Synthes) (Brainlab Japan)

17:05〜17:10 Break

17:10〜18:00(50min.)

Free Papers 10 Complications
Chairpersons Kiyoshi ITO, M.D. Hitoshi HASE, M.D.
Complications and clinical results for rheumatoid lumbar disorders

Ryo FUKUSHIMA, M.D., et al.
(Orthopedic Department, Sagamihara National Hospital, Sagamihara, Kanagawa)

Airway obstruction after multilevel anterior cervical decompression and fusion surgery

Atsuomi AIBA, M.D., et al.
(Orthopedic Department, Numazu City Hospital, Numazu, Shizuoka)

The influence of anti-platelet and anti-coagulate agent on perioperative bleeding in lumber laminectomy

Miyuki FUKUDA, M.D., et al.
(Shin-aikai Spine Center, Katano, Osaka)

Complication of OLIF-avoidance and treatment for vascular injury

Hitoshi HAYASE, M.D., et al.
(NeuroSpinal Surgery, Hokkaido Ohno Memorial Hospital, Sapporo, Hokkaido)

A case report of delayed onset fungal discitis at proximal junctional level after MIS-TLIF in non-compromised host

Naoki OKAMOTO, M.D., et al.
(Orthopedic Department, Misyuku Hospital, Meguro, Tokyo)

Vertebroplasty with posterior fixation in case who had vertebral wall defect caused by osteoporotic vertebral fracture

Toshiyuki TAKAHASHI, M.D., et al.
(Spinal Disorders Center, Fujieda Heisei Memorial Hospital, Fujieda, Shizuoka)
15 September (Sat.)
Main Hall 3: Kirishima

7:30  Registration
8:00〜9:00 (60min.)

Free Papers 7 Surgical techniques
Chairpersons Kazunari KOGURE, M.D.  Futoshi SUETSUNA, M.D.

F7-1
Syringo-peritoneal CSF shunt for syringomyelia associated with spinal adhesive arachnoiditis .............................................. 240
Kentaro NAITO, M.D., et al.
(Department of Neurosurgery, Osaka City University Graduate School of Medicine, Osaka, Osaka)

F7-2
Usefulness of laminoplasty basket for thoracic spine surgery .................... 241
Daisuke UMEBAYASHI, M.D., et al.
(Department of Neurosurgery, Kyoto Prefectural University of Medicine, Kyoto, Kyoto)

F7-3
The significance of using the titanium spacer in cervical laminoplasty, side effect ............................................................... 242
Kazunari KOGURE, M.D., et al.
(Department of Neurological surgery, Nippon Medical School, Tama, Tokyo)

F7-4
Wrapping surgery for symptomatic Tarlov cyst ........................................ 243
Taku SUGAWARA, M.D., et al.
(Department of Spinal Surgery and Neurosurgery, Institute for Brain and Blood Vessels, Akita, Akita)

F7-5
Proper using various type of drill tips for different purpose ...................... 244
Nobuyuki SHIMOKAWA, M.D., et al.
(Department of Neurosurgery, Tsukazaki Hospital, Himeji, Hyogo)

F7-6
Usefulness of cervical pedicle marker before cervical pedicle screw insertion in hybrid operation room .................................. 245
Hiroshi MIYAMOTO, M.D., et al.
(Dept. of Orthopaedic Surg., Kindai university Hospital, Osakasayama, Osaka)
**Free Papers 8 Treatment indications**

Chairpersons Nobuyuki SHIMOKAWA, M.D. Toshikatsu MAMADA, M.D.

<table>
<thead>
<tr>
<th>F8-1</th>
<th>Analysis of treatment of osteoporotic vertebral fracture in our hospital - Importance of appropriate and early treatment</th>
<th>246</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kento TAKEBAYASHI, M.D., et al. (Department of Spinal surgery, Kamed Medical Center, Kamagawa, Chiba)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F8-2</th>
<th>Frequency of cervical thoracic cord compression in patients undergoing operations for lumbar spinal canal stenosis</th>
<th>247</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tatsuo MAKINO, M.D., et al. (Orthopedic Department Spine Center, Niigata Central Hospital, Niigata, Niigata, Kawaguchi, Saitama)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F8-3</th>
<th>Surgical management of infectious spondylitis with acute paraplegia of upper thoracic spine. Which surgical methods we should choose in case of emergency</th>
<th>248</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Masanori IZEKI, M.D., et al. (Orthopedic Department, Kansai Electric Power Hospital, Osaka, Osaka)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F8-4</th>
<th>Comparison of pelvic incidence angles between 3D-CT and standing lateral X-ray images</th>
<th>249</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Taketoshi KUSHIDA, M.D., et al. (Department of Orthopaedic Surgery, Kansai Medical University, Hirakata, Osaka)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F8-5</th>
<th>A case study in which the sacral Alar-Iliac screw was fixed by using one side of the L5/S posterior lumbar interbody fusion</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Taro YAMAUCHI, M.D., et al. (Orthopedic Department, Okayama Rousai Hospital, Okayama, Okayama)</td>
<td></td>
</tr>
</tbody>
</table>
Poster Session 2-1
Cervical spine 2
Chairperson Hitoshi KONO, M.D.

**P2-I-1** Treatment for two cases with difficulty to gaze forward dropped head syndrome
Hideo HOSOE, M.D.
(Orthopedic Department, Gifu Prefectural General Medical Center, Gifu, Gifu)

**P2-I-2** C7 Posterior Subtraction Osteotomy
Takeshi UMEBAYASHI, M.D.
(Spine Surgery, Shinagawa Shishokai Hospital, Shinagawa, Tokyo)

**P2-I-3** Cervical kyphosis which was treated by two-staged correction surgery including posterior osteotomy: Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)

**P2-I-4** Breakage of C7 pedicle screws
Kei MIYAMOTO, M.D., et al.
(Orthopedic Department, Gifu Munincipal Hospital, Gifu, Gifu)

**P2-I-5** Tips of the injury case of the artificial intervertebral disk
Isao KITAHARA, M.D., et al.
(The Department of Neurosurgery, Chiba Tokushukai Hospital, Kamogawa, Chiba)

**P2-I-6** Surgical outcomes of multilevel posterior decompression and fusion using short mono-cortical mid-cervical anchor screws
Taito ITABASHI, M.D., et al.
(Orthopedic Department, Towada City Hospital, Towada, Aomori)

**P2-I-7** The effectiveness of navigation drill Stealth Midas in fixation of the Cervical Thoracic Spine
Hiroaki MANABE, M.D., et al.
(Spine center, Shin-aikai Hospital, Katano, Osaka)
A case of posterior fusion surgery for cervical spine metastasis in male breast cancer
Toma YANO, M.D., et al.
(Department of Orthopedic Surgery, Osaka Medical College, Takatsuki, Osaka)

Poster Session 2-2
Spinal tumors, Spinal vascular lesions
Chairperson Minoru HOSHIMARU, M.D.

Solitary fibrous tumor/hemangiopericytoma in cervical spine
Yasufumi OHTAKE, M.D., et al.
(Department of neurosurgery/Spine and peripheral nerve center, Nakamura Memorial Hospital, Sapporo, Hokkaido)

Retroperitoneal approach to Schwannoma in iliopsoas major muscle: Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)

A case of neurinoma of the conus medullaris suffering from Th12 vertebral fracture with Magnetic Resonance-conditional Pacemaker-case report-
Tomoaki FUJITA, M.D., et al.
(Shin-aikai Spine Center, Katano Hospital, Katano, Osaka)

A case report of thoracic spinal cord meningioma of the form same as neurinoma
Tsuyoshi HARAKUNI, M.D.
(Neurosurgery Department, Urasoe Sogo Hospital, Urasoe, Okinawa)

A case of spinal arteriovenous shunt with difficulty in preoperative diagnosis
Susumu UCHIDA, M.D., et al.
(Department of Neurosurgery, Faculty of Medicine, Yufu, Oita)

3D MR myelography / CTA fusion image in preoperative planning for atypical spinal dAVF: a case report
Hironori FURUKAWA, M.D., et al.
(Department of Neurosurgery, Hokuto Hospital, Obihiro, Hokkaido)

Trapping of ruptured posterior spinal artery aneurysm with neurophysiological monitoring: Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)
P2-2-8 Epigastralgia resulting from dural arteriovenous fistula as a late complication of T9 vertebral fracture: Case report ......................................................... 319
Takafumi INOUE, M.D., et al.
(Dept.of Spine and Spinal surgery, Shin-Takeo Hospital, Takeo, Saga)

P2-2-9 Intraoperative angiography for the treatment of the spinal arteriovenous malformations ................................................................. 320
Keiichi AKATSUKA, M.D., et al.
(Department of Neurosurgery, Tottori Municipal Hospital, Tottori, Tottori)

Poster Session 2-3
Lumbar spine 2
Chairperson Tomohiro MIYASHITA, M.D.

P2-3-1 ISurgical management for lumbar degenerative spondylolisthesis ........... 321
Tomohiro MURAKAMI, M.D., et al.
(Department of Neurosurgery, Hokkaido Ohno Memorial Hospital, Sapporo, Hokkaido)

P2-3-2 HA block vertebroplasty; Correlation between block filling rate and change of vertebral height and local kyphosis ........................................ 322
Koshi NINOMIYA, M.D., et al.
(Department of Neurosurgery, Saso Hospital, Nishinomiya, Hyogo)

P2-3-3 Early surgical outcome of posterior fixation with percutaneous pedicle screw and balloon kyphoplasty ......................................................... 323
Kento TAKEBAYASHI, M.D., et al.
(Department of Spinal surgery, Kameda Medical Center, Kamogawa, Chiba)

P2-3-4 Usefulness of unilateral insertion of bullet shape cage for single level TLIF ...... 324
Tomohiro IZUMI, M.D., et al.
(Spine Center, Department of Orthopedic Surgery, Niigata Central Hospital, Niigata, Niigata)

P2-3-5 Comparison of postoperative short term outcomes following transforaminal lumbar interbody fusion using Trabecular Metal cages and PEEK cages ................................................................. 325
Takuya YAMANAKA, M.D., et al.
(Orthopedic Department, Yuki Hospital, Yuki, Ibaraki)

P2-3-6 Surgical outcome of in-situ PLIF combined PLF for lumbar DSA ............... 326
Hidemasa UMEKOJI, M.D., et al.
(Dept. of Spine Surgery, JCHO Tokyo Yamate Medical Center, Shinjuku, Tokyo)

P2-3-7 Investigation on subsidence of cages in the postoperative course of XLIF ................................................................. 327
Fumiko SAIKI, M.D., et al.
(Orthopaedic Department, Yokohama Rosai Hospital, Yokohama, Kanagawa)
Best Practices in the safe and proper placement of OLIF and XLIF retractors
Tsuyoshi OKUDAIRA
(Orthopedic Department, Nagasaki Rosai Hospital, Sasebo, Nagasaki)

Examination of the clinical courses in cases with using thrombin-gelatin hemostatic matrix in lumbar spinal surgery
Tomoaki FUJITA, et al.
(Shin-aikei Spine Center, Katano Hospital, Katano, Katano, Osaka)

Poster Session 2-4
Lumbar and sacral spine
Chairperson Sei TERAYAMA, M.D.

Percutaneous endoscopic lumbar decompression for foraminal stenosis at lumbar and lumbosacral junction
Shuntaro TSUCHIDA, M.D., et al.
(Spine center, Fuji Toranomon Orthopaedic Hospital, Gotemba, Shizuoka)

Combined use of Sacral alar-iliac screw and iliac screw using O-arm and navigation system
Osamu MATSUSHIGE, M.D., et al.
(Hachioji spine clinic, Hachioji, Tokyo)

Bilateral iliac screw and rod fixation contributes to improvement of ADL in painful bed-ridden elderly cases of sacral insufficiency fracture
Shinji KUMAMOTO, M.D., et al.
(Department of Spinal Surgery, Fukuoka Kinen Hospital, Fukuoka, Fukuoka)

XLIF trials placed in adjacent discs, utilized as vertebral osteotomy guides in X-CORE vertebral replacement
Tsuyoshi OKUDAIRA, M.D., et al.
(Orthopedic Department, Nagasaki Rosai Hospital, Sasebo, Nagasaki)

Anterior and Posterior screwing for lumbar bursting fracture:
Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)

Revision surgery for severe kyphotic thoracic and lumbar spine by two staged surgery: Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)
A case of anaphylactic shock due to vancomycin in revision surgery of adult spinal deformity
Takashi KUNIYA, M.D., et al.
(Department of Orthopaedics, Kanto Rosai Hospital, Kawasaki, Kanagawa)

A case study of thoracic epidural empyema treated with percutaneous endoscopic drainage
Yasuyoshi MIYAO, M.D., et al.
(Department of Neurosurgery, Suita Municipal Hospital, Suita, Osaka)

A case of huge medial lumbar disc herniation removed by a transdural approach
Keishi TSUNODA, M.D., et al.
(Department of Neurosurgery, Nagasaki University Hospital, Nagasaki, Nagasaki)

Poster Session 2-5 Preoperative diagnosis, Countermeasures against complications
Chairperson Takashi IMURO, M.D.

Relationship between the self-report questionnaire for Frailty scores and the walking speed in the elderly patient who undergo spine surgery
Yusuke ITO, M.D., et al.
(Orthopaedic Department, Musashino RedCross Hospital, Musashino, Tokyo)

Easy to overlook Sacral insufficiency fracture complicated with spondylolisthesis
Taigo KAWAOKA, M.D.
(Kawasaki Hospital, Yame, Fukuoka)

Usefulness of simultaneous cone-beam CT and root block for Ossification of yellow ligament on extra foramen: Case report
Yohei YOKOYAMA, M.D., et al.
(Department of Spinal Surgery, Kameda Medical Center, Kamogawa, Chiba)

A case of L3/4 foraminal unusual mass causing L3 radiculopathy
Yasuyuki MIYOSHI, M.D., et al.
(Department of Neurosurgery, Kawasaki Medical School General Medical Center, Okayama, Okayama)

Idiopathic lumbar pedicle fracture
Kyongsong KIM, M.D., et al.
(Department of Neurosurgery, Chiba Hokusyo Hospital, Nippon Medical School, Inzai, Chiba)

Risk assessment of the deep vein thrombosis in the spinal disorders with compared to other orthopedic diseases
Ikkuo AITA, M.D., et al.
(Orthopedic Department, Tsukuba Medical Center Hospital, Tsukuba, Ibaraki)
**P2-5-7** A study on 80 cases developed deep surgical site infection SSI following posterior spinal instrumented fusion surgeries using multicenter SSI surveillance database

Satoshi OGIHARA, M.D., et al.
(Orthopedic Department, Saitama Medical Center, Saitama Medical University, Kawagoe, Saitama)

**P2-5-8** Prospective multicenter surveillance and risk factor analysis of deep surgical site infection after posterior spinal instrumented fusion surgery in adults

Satoshi OGIHARA, M.D., et al.
(Orthopedic Department, Saitama Medical Center, Saitama Medical University, Kawagoe, Saitama)

**P2-5-9** Successfully treatment for common peroneal nerve entrapment of the elderly failed back surgery syndrome

Naotaka IWAMOTO, M.D., et al.
(Department of Neurosurgery, Teikyo University School of Medicine, Itabashi, Tokyo)