

# 39th Annual Meeting CSRS-Europe 2024 – Vienna 05.06. – 07.06. Programme

## Main Topic:

## Complex Cervical Disorders and the Pediatric Spine: Planning Surgery and Avoiding Complications

### Wednesday 05.06.2024

15:00-19:00h Registration

### Thursday 06.06.2024

8.15-8.30 **Welcome address**  
M. Mayer & H. Koller

8.30-9.30 **Lecture session 1 – Mario Boni Grant Nominated Best Oral presentations**  
Moderators: C. Olerud & A. Ibrahim

The CASINO Trial: Surgical versus conservative management in patients with cervical radiculopathy due to intervertebral Disc Herniation: A Prospective Cohort Study  
A. Gül

Risk factors for In-Hospital Mortality in Cervical Spinal Cord Injuries: a nationwide, cross-sectional analysis of concomitant injuries, comorbidities, and treatment strategies in 4,008 cases  
M. Schindler

Revision Rates After Single-Level Cervical Disc Arthroplasty Versus Anterior Cervical Discectomy and Fusion: An Observational Study With 5-Year Minimum Follow-Up  
A. Gordon

Luschka Joint Fusion Versus End Plate Space Fusion in Anterior Cervical Spine Surgery A Prospective Randomized Controlled Trial  
X. Sheng

Effect of Cervical Mismatch on Sagittal Alignment and Patient Reported Outcomes in Long Posterior Cervical Fusions-A Multi-Center Analysis  
D. Singh

Intraoperative CT-navigated placement of cervical pedicle screws – A prospective single center cohort analysis of 655 cervical pedicle screws.  
U. Bertram

9.30-10.30 **Lecture session 2 – Pediatric cervical trauma and biomechanics**

Moderators: B. Storzer & F. De Iure

Modified JOA Scale for Spinal Pathology in Pediatric Patients  
A. Evsyukov

Management of congenital cervico-thoracic malformations. Technical Aspects  
A. González-Menocal

Larsen syndrome: advocating early surgical treatment using 360° cervical fixation and fusion  
I.-L. Branea

Pediatric Cervical Spine Injuries – A Descriptive Analysis of Thirty-Two Years of Experience at a Level 1 Trauma Center  
M. C. Correia

Long-term results of surgical treatment the cervicothoracic dislocation due to congenital and bone-dysplasia-related vertebral malformations in children.  
V. Klimov

Muscle-sparing unilateral posterior arch recapping techniques for cervical spinal cord tumors in children including dumbbell shaped tumors  
T. Shiraishi

Features of surgical treatment of cervical deformities associated with NF-1 in children  
O. Sergeenko

Minimally Invasive Treatment of Pediatric Spinal Trauma  
M. Grega

10:30-11:00 **Coffee break**

11:00-11:45 **Debate 1  
Pediatric Cervical Trauma**

Moderator: M. Mayer  
Discussants: C. Vleggeert-Lankamp, G. Bodon, F. De Iure

Introduction: What's normal in children, what is not  
J. Yukawa

Point of view: What can be safely treated non-surgically  
M. Scholz

Point of view: What shall be operated!

P. Vachata

11:45-12:10 **Presidential lecture by President of CSRS Asia Pacific**

Revision strategy for failure of cervical disc arthroplasty

J.-B. Park

12:10-12:15 **Preview Annual Meeting of CSRS-AP 2025**

J.-B. Park

12.15-13:30 **Lunch break**

**12.30-13.15 Sponsored Lunch-Symposium**

**12.30-13.15 Sponsored Lunch-Symposium**

13.30-14.30 **Lecture session 3 –**

Moderators: C. Vleggeert-Lankamp & A. Combalia

How cervical and cervicothoracic scoliosis take influence on the atlanto-axial joint

P. F. Richter

Radiological characteristics of the upper cervical spine in dropped head syndrome.

T. Tamaoka

Surgical outcomes and complications of reconstructive surgery for cervical myelopathy with kyphotic deformity

Y. Yukawa

Occurrence of dysphasia after correction surgery in the cervical spine for dropped head syndrome

H. Miyamoto

Biomechanical evaluation of intervertebral fusion process after anterior cervical discectomy and fusion: a finite element study

Y. Yang

Statistical power of a smartphone app to objectively monitor performance outcomes in degenerative cervical myelopathy: power analysis of a simulated research trial using data from an observational study

M. Kotter

Preservation of Cervical Posterior Muscle Volume and Cervical Alignment: Comparison Between three types of modified muscle-sparing laminoplasty and Conventional Open-Door laminoplasty for multilevel degenerative cervical myelopathy

R. Qu

A fully integrated imaging protocol and post-processing pipeline for tract-specific quantitative cervical spinal cord MRI in degenerative cervical myelopathy  
Z. Hunin

14.30-15.30 **Round Table 1**

**Congenital pediatric anomalies**

Moderator: H. Koller

Discussants: D. Liu, C. Olerud, P. Bancel

What to look for and how to score it  
L. E. Carelli

Surgical techniques & tricks for basilar invagination in the small patient  
H. Chikuda

Congenital atlantoaxial instability: What can be observed and treated non-surgically and when to operate  
R. Edwards

When congenital instability meets hindbrain pathology: What to do when the brain is involved  
J. Klekamp

15:30-16:00 **Coffee break**

16:00-17:00 **Lecture session 4 – Congenital anomalies**

Moderators: P. Bancel & P. Passias

Primary and Revision Cervical Disc Arthroplasty from 2010-2020 in the United States: Comparison of Patient Demographics, Utilization Trends, and Health Care Reimbursements  
A. Gordon

Surgically treated cervical degenerative disk disease is not hereditary: results from a national twin cohort study  
M. Holy

Comparative Analysis of Three-Level Anterior Cervical Discectomy and Fusion versus Cervical Arthroplasty: A Retrospective Study of Radiological and Clinical Outcomes  
J. Liao

7-year Outcomes for Single-Level Total Disc Replacement with a Novel Viscoelastic Artificial Cervical Disc  
A. Milam

In Vitro Biofilm Formation of Staphylococcus aureus on Implants used in Surgical Treatment of Destructive Spondylodiscitis  
A. T. Zacher

Post-Traumatic Atlanto-Axial Instability: A Combined Clinical and Radiological Approach for the Diagnosis of Pathological Rotational Movement in the Upper Cervical Spine

B. R. Kaale

Two-step distraction and reduction (TSDR) for basilar invagination with atlantoaxial dislocation: A novel technique without traction

X. Sheng

A Nationwide Multicenter Study of the Cost Effectiveness of Five Leading Drugs for Pharmacological Management of Cervicobrachial Symptoms

N. Wakao

17:00-17:45 **Debate 2**

Moderator: C. Vleggeert-Lankamp & O. Alves

**Intraspinal cervical pathologies in pediatric patients**

What to know, how to differentiate, and how to treat.

Point of view

J. Klekamp

**Extraspinal Cervical Tumors in Pediatric Patients**

What to see, what not to miss and how to treat.

Point of view

J. Reynolds

17.45-17.50 **Preview Annual meeting – CSRS 2025 Europe**

P. Vachata

17:50-18:00 **Award session: Best paper and Research Grant**

Moderators: C. Barrey & P. Bancel

18.00-18.30 **CSRS Europe General Assembly**

19.30-22.00 **Society Dinner**

## Friday 07.06.2024

### 8.30-9.30 **Lecture session 5**

Moderators: J. Schroeder & S. Hartmann

C2 odontoid fracture: Assessing the impact of concurrent C1-C2 rotatory subluxation on conservative management

S. Diaz

Cervical Spine Injuries (CSI) and their Association to Blunt Cerebro-Vascular Injuries (BCVI): A Danish Nationwide register-based cohort study.

H. S. Foldager Jeppesen

Surgical versus Conservative Treatment for Odontoid Fractures in the Elderly: A Prospective Cohort Study

J. Huybregts

To include or not to include the cervicothoracic junction in posterior cervical fusion: can we break the rules?

E. Cipolleschi

Factors associated with non-contiguous spine fracture in patients with traumatic cervical spine injury: a 12-year retrospective study

T. Bunmaprasert

Treatment Analysis of 49 Cases with Pedicle Fractures of the C2 Axis

S.-K. Kim

Epidemiology of cervical spine injuries in elderly in a Level I Trauma Center for a period of ten years (2012-2022)

S. Zagorac

Surgical timing in adults patients with SCIWORET: A retrospective single-center study

G. Lastrucci

### 9.30-10.30 **Lecture session 6**

Moderators: B. Zoega & M. Scholz

Assessing accuracy of measurement methods of bony fusion assessment after anterior cervical discectomy (Comparing different radiographic measurements to determine the most accurate method and cut-off value for the establishment of bony fusion)

C. Vleggeert-Lankamp

Transcranial Magnetic Stimulation (TMS) brain mapping of the hand motor area: comparison between healthy subjects and patients with cervical myelopathy

F. M. Brigatti

Non-invasive skin autofluorescence of advanced glycation end-products is useful biomarker for pain symptoms in patients with degenerative cervical myelopathy  
T. Doi

Clinical Outcome after Anterior Cervical Discectomy and Fusion for Cervical Spondylotic Myelopathy in Three Teaching Hospitals, Between September 2010 and September 2022, A Retrospective Analytic Study  
A. Mldie

Paraspinal Muscle Parameters as Predictors of Postoperative Outcomes in Patients Undergoing Cervical Disc Arthroplasty: Structural Equation Model Analysis  
J. He

Risk factors of the complications after a removal of the cervical OPLL by anterior approach  
T. Sugawara

The Role of Psychosomatic Traits in Tailored workup for Anterior Cervical Discectomy and Fusion – a Case-series  
M. Battistelli

Outcomes of cervical arthroplasty versus anterior cervical arthrodesis: a systematic review and meta-analysis of randomized clinical trials with a minimum follow-up of 7-year  
J. Nuñez

10.30-11.00 **Coffee break**

11:00-11:30 **Invited Guest Lecture**

**Better worry than sorry - Why professional planning is crucial and What Experts in Surgery can Learn from other Professionals!**

**Sam Anthamatten**

Extreme Freeride Skier and Mountain Guide

Moderation: H. Koller

11:30-13:00 **Planning and Prevention in complex and cervical deformity surgery**  
Moderators: P. Passias & H. Koller

Avoiding neurologic complications in complex cases  
H. Koller

How much correction is enough and what to really aim for: Balancing risk and benefits  
P. Passias

What to look for and what to avoid to prevent complications in craniocervical deformities

T. Pitzen

Cervical tumor surgery: How to avoid biggest catastrophes

D. Jeszenszky

Preventing medical complications in complex cervical surgery

A. Ibrahim

13:00-14:20 **Lunch break**

**13.15-14.00 Sponsored Lunch-Symposium**

14:20-14:35 **Presidential lecture by President of CSRS Northern America**

Patient Expectations & Satisfaction: Should Happiness be an Outcome We Measure?

A. A. Patel

14:35-14:40 **Preview Annual Meeting of CSRS NA 2024**

A. A. Patel

14.40-15.40 **Lecture session 7**

Moderators: P. Vachata & C. Thomé

Anatomical consideration for less invasive lateral exposure in posterior decompression surgery of cervical spine — Cadaveric study—

K. Kitamura

The extent of preoperative BSCB damage correlates with 1-year neurological recovery after surgical decompression

T. P. Schmidt

Does Cervicothoracic Flexibility Affect Clinical Outcomes in Patients Undergoing Multi-Level Posterior Cervical Fusions?

D. Singh

Validity of a smartphone app to objectively monitor performance outcomes in degenerative cervical myelopathy: an observational study

M. Kotter

Association of Infliximab use with cervical spine deformity in patients with Rheumatoid Arthritis

A. B. Lebouille-Veldman

Can anterior cervical discectomy (ACDF) be more effective and safe than corpectomy with anterior access (ACCF) in the treatment of cervical Spondylogenic Myelopathy? Preoperative clinical condition can influence the choice of strategy?

M. Costaglioli



The effect of the difference in C2-7 angle on the occurrence of dysphagia after anterior cervical discectomy and fusion with the Zero-P Implant System

C. Huang

Impact of T1 Slope as a Predictor of the Loss of Cervical Lordosis and Health-Related Quality of Life after Laminoplasty in Patients with Ossification of the Posterior Longitudinal Ligament

J.-H. Hong

15:40-16:40 **Lecture session 8**

Moderators: O. Alves & M. Skeppholm

Re-analysis of the CSM-PROTECT Multicentre Randomized Controlled Trial Reveals a Global Treatment Benefit of Riluzole in Patients Undergoing Surgery for Degenerative Cervical Myelopathy

K. Pedro

Biomechanical considerations and clinical implications of non-contiguous two-level anterior cervical discectomy and fusion: a retrospective analysis of 32 consecutive cases

A. Baram

Dynamic Cervical Spinal Canal Stenosis: Identifying Imaging Risk Factors in Extended Positions

S. Matsumoto

Unveiling the genetic variation of severe continuous/mixed type ossification of the posterior longitudinal ligament by whole-exome sequencing and bioinformatic analysis

C. H. Lee

Prospective multicenter study of a pedicle screw insertion technique using patient-specific screw guide templates for the cervical spine

T. Sugawara

The influence of patient positioning on the measurement of cervical sagittal balance parameters in conventional radiographs: A systematic review

E. van Santbrink

Intraoperative blood pressure fluctuation is associated with postoperative C5 palsy in cervical spine surgery: A retrospective observational study

T. Tsukui

Risk Factors For The Development of Thromboembolic Complications Within 1 Year Following Primary Cervical Disc Arthroplasty

A. Gordon

16.40-17.10 **Coffee break**

17.10-17.55 **Worst case scenarios: What I learned and how it improved my prevention strategies**

Moderators: M. Mayer & C. Thomé

H. Mihara  
J. Reynolds  
H. Chikuda  
F. De Iure

17:55-18.00 **Final remarks**

C. Vleggeert-Lankamp

19:00-22:00 **Faculty Dinner**

## ePosters

Standalone cage for the treatment of symptomatic adjacent segment stenosis in the degenerative cervical spine.

H. Abdelrahman

True MIS cervical pedicle screw placement – first clinical impressions of a market-ready platform using iCT navigation.

C. Blume

Anterior cervical osteotomy: clinical and radiographic analysis of a cohort of kyphotic deformities patients – 10 years experience of a single center study

L. E. Carelli

Skip Laminectomy: A Safer Alternative for Octogenarian CSM Patients

Y. J. Cho

Clinical and radiological outcomes of cervical disc arthroplasty in patients with Modic change

Y. Deng

A Comparative C2 Screw Placement Accuracy Analysis: Navigation vs. Fluoroscopy

J. Gierse

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

C. Huang

Morphological analysis of OPLL progression in cervical spinal cord injury cases treated with posterior fusion

K. Inomata

Characteristics of cervical alignment and hyoid bone location in the anterior cervical surgical position with neck pillow

Y. Ito

Results of anterior cervical plating in a patient with Cervical Pyogenic Spondylodiscitis

S.-K. Kim

Factors associated with improved urinary function after traumatic cervical spinal cord injury: Analysis in AIS grade C

K. Nakai

Correlation Between Negative Sagittal Vertical Axis and Neck Pain in Patients with Cervical Spondylotic Myelopathy

S. Oe

Successful Treatment of a C2 Aneurismal Bone Cyst with Hydroxyapatite and Calcium Sulfate Synthetic Bone Void Filler Injection: A Case Illustration

A. Rapisarda

A Protocol for the Development of Diagnostic Criteria for Degenerative Cervical Myelopathy: Myelopathy.org RECODE-DCM

T. Rujedawa

Subaxial cervical spine fractures with facet joint dislocation : management, technique and results in a series of 35 patients.

A. Rusconi

The influence of preoperative cervical degeneration on heterotopic ossification after cervical disc replacement

Y. Shen

The relationship between Craniocervical Sagittal Balance with the Outcomes of Cervical Disc Replacement

Y. Shen

Impact of Hypertension in Diabetes on Surgical Outcomes after Cervical Laminoplasty - a Retrospective, Multi-institutional Study of 1002 Patients

E. Takasawa

Impact of increased signal intensity of the spinal cord at the vertebral body level in patients with cervical myelopathy

Y. Yukawa

Association between the morphological characteristics of the zygapophysial joint and the necessity for transoral surgery in patients with Sandwich deformity

C. Zhang

Is there a difference in patient experience related to plate to disc distance after anterior cervical discectomy and fusion for fracture dislocations.

J. Barua

Kyphosing osteotomy of the cervical spine to improve kyphotic general sagittal balance. Case presentation

I.-L. Branea

Complications of the different types of transoral approaches for pathologies of the craniocervical junction.

L. E. Carelli

Replication of physiologic center of rotation (COR) geometry can improve lordosis reconstruction in anterior cervical realignment surgery – A comparative analysis using a novel distractor type.

S. Decker

A Novel Intraoperative Posture-Adjustment Apparatus for Correction of Cervical Lordosis in Anterior Cervical Surgery

Y. Deng

Is the anterior bone loss affected by modic change in anterior cervical discectomy and fusion?

Y. Deng

Retrospective Analysis of Surgical Outcomes and Patient Recovery in Treating Atlantoaxial Fractures in Elderly Patients

A. Dyab

Spine Implant Failure after C1-C2 Fixat

A. Evsyukov

Bone Quality Changes of Cervical Spine in Elderly Patients with Cervical Spinal Cord Injury-Bone quality assessment using the Hounsfield unit measurement method-

R. Fujita

Emergency Management of Cervical subaxial dislocation fractures treated by a dorsal approach: our experience and Outcome Evaluation

M. Genitiempo

Surgical site infection in dorsal cervical instrumentation: a comparative analysis of wound closure techniques.

R. Gmeiner

Elucidating the Role of PVST Swelling in the Incidence of Postoperative Complications: A Multifactorial Risk Analysis in ACDF for Traumatic Cervical Spine Injuries

T. S. Goh

Anteroposterior Cervical Fusion without Osteotomy in Emery-Dreifuss Muscular Dystrophy: A Novel Surgical Paradigm for Cervical Hyper-Lordotic Deformity Correction

T. S. Goh

The Effect of the Coronavirus Disease 2019 (COVID-19) Pandemic on Elective Cervical Spine Surgery Utilization and Complications in the United States: A Nationwide Temporal Trends Analysis

A. Gordon

Atlantoaxial fixation with C1-C2 transarticular screws and C1 lateral mass screws

A. Harati

Cervical disc arthroplasty for patients with osteopenia: A matched cohort study

J. He

Case presentation of instable C2 Anderson D'Alonzo type III fracture combined with Hangman's fracture treated by navigated cone beam-CT assisted percutaneous Magerl and Judet technique.

P. Hudák

Title: Predictive Cervical Spine Fracture (CSF) Patterns for Blunt Cerebrovascular Injuries (BCVI): A Systematic Literature Review

H. S. Foldager Jeppesen

Safe surgical disengagement of facets in neglected ao type c injuries of sub axial cervical spine: a technical note

J. Jill

Traumatic Posterior Dislocation of Atlanto-axial Joint with Anterior Arch Fracture in the Patient of Atlanto-occipital Assimilation

G.-U. Kim

Cast test: surgical outcome prediction of thoraco-lumbar spine correction surgery for sagittal vertical axis (+) type dropped head syndrome: A report of initial five cases.

M. Koda

Chordoma of the cervical spine - misjudged diagnosis

B. Kunze

Glucocorticoid use and cervical spine deformity in patients with Rheumatoid Arthritis

A. B. Lebouille-Veldman

Complications and risk factors of ACAF for the treatment of cervical OPLL

J. Miao

Delayed Hypersensitivity Reaction Or Chronic Infection? Periprosthetic Prevertebral Collection After Cervical Arthroplasty Implantation. Report Of 2 Cases And Systematic Review.

J. Nuñez

Is there an increased likelihood of adjacent level disc degeneration and ossification after anterior cervical discectomy and fusion for fracture dislocation of neck.

M. Otero

IgG4-related hypertrophic spinal pachymeningitis as a rare cause of cervical myelopathy: case report and an updated review of the literature.

A. Parlak

A New Buckling and Axial Loading Theory in Patho-mechanics of Syringomyelia: A Hypothesis, Concept & Review

S. Patil

Cluster analysis identifies four unique phenotypes of degenerative cervical myelopathy patients with distinct clinical profiles and long-term functional outcomes

K. Pedro

What does the patient operated for DEGENERATIVE CERVICAL MYELOPATHY (DCM) consider a good outcome?

M. Ramírez

Cervico-thoracic Junction Fractures: A Retrospective Study of Treatment and Complications

J. Reis

Progressive quadriplegia in a 16 year old male with congenital cervical kyphosis and stenosis. A case Report

M. D. Schneider

Is the fusion order of the upper and lower levels different in two-level anterior cervical discectomy and fusion for cervical spondylopathy?

X. Sheng

What Perioperative Factors are Associated with High-Risk Daily Morphine Milligram Equivalents in Cervical Spinal Fusions?

D. Singh

Correlation between Preoperative ODI and PROMIS Scores in Patients Undergoing Non-Fusion Cervical Surgery

D. Singh

Does Preoperative Self-Reported Disability Classification Impact Health Status Scores in Cervical Fusion Patients

D. Singh

A randomised controlled trial comparing the effectiveness of surgical and nonsurgical treatment for cervical radiculopathy

M. Taso

Anterior cervical corpectomy and fusion with stand-alone cages in patients with multilevel degenerative cervical spine disease is safe

M. Tohamy

Which is better for cervical laminoplasty, HA spacer or titanium spacer?

K. Toriumi

Full endoscopic neuronavigated decompression of craniocervical junction with duraplasty in Chiari malformation Type I (CM I.): description of a novel treatment

B. Trnovec

Risk factors of bone loss after Prestige-LP cervical disc arthroplasty

H. Wang

Surgical Outcomes of Laminectomy for Cervical Spondylotic Myelopathy: A Comparison with Laminoplasty

H. Watanabe

Comparison of Surgical Outcomes of C3-6 laminectomy and Selective Laminectomy for Cervical Spondylotic Myelopathy

H. Watanabe

Cervical disc arthroplasty for the treatment of noncontiguous cervical degenerative disc disease: results of mid- to long-term follow-up

T. Wu

Morphometry Changes at the Cervicothoracic Junction with Head Supported Mass: Implications for Neck Pain

N. Yoganandan

Effects of Assembled Titanium Mesh Cage on the Improvement in Biomechanical Performance of Single-level Anterior Cervical Corpectomy and Fusion: A Finite Element Analysis

K. Zhang