



eEANS2021
Neurosurgery
in Translation

October 3-7

VIRTUAL CONGRESS

eanscongress.org

Congress Programme

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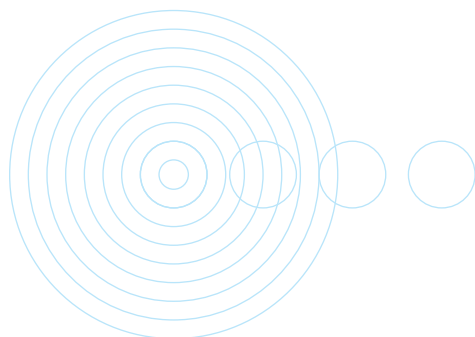
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Welcome Letter

Dear EANS Community,

In summer we had to make the exceedingly sad decision to transform the long anticipated real EANS2021 meeting in Hamburg to a fully virtual format. The health authorities of the city of Hamburg could not issue a permit for a meeting of more than 100 people at that time, no matter how big the venue was and no matter whether the attendees would be a highly selected group of vaccinated doctors. We worked constructively with the conference center until the last minute and elaborated excellent hygiene plans which would have allowed a limited physical meeting with almost 800 people but it was not approved, – the fear of Covid was stronger. It was with great sadness that we made that decision. But the risk to commit to a full meeting with all its arrangements which then would have had to be cancelled on short notice was too much a financial and legal risk for the EANS.

Much work has gone into the scientific programme and a record number of abstracts were received and the concept is to honor all that input and go ahead with the scientific programme to the full extent without cutting down on volume. The format had to be adapted to different timings during the days and less parallel sessions but still the full number of days as anticipated. With the experience gained in the industry during the pandemic, recording and extended access are available to those registered for the meeting so that everybody has a chance to fully access all the presentations, even at a later point in time.

It has also been decided, that as with Belgrade, the meeting in Hamburg will be moved into the future but not in the domino style, so the schedule for the immediate future remains as planned, and in agreement with the decisions made by the EANS Board and the General Assembly.

We sincerely regret that at a time when different parts in Europe are moving in different directions in handling the pandemic, fear superseded the efforts to have us all meet again in person, but at some point we will, – and to keep the EANS healthy for those times, it was necessary to take this decision.

**We do look forward to better times for us all,
and soon enough we will be able to meet in
person in the not too distant future.**



Manfred Westphal
eEANS2021
Congress President

Organising Committee



eEANS2021
Neurosurgery
in Translation

Congress President

Manfred Westphal

EANS President

Karl Schaller

EANS Board Scientific Chair

Francesco Sala

Scientific Committee

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Functional Epilepsy
Neuro-Oncology (Tumour)
Radiosurgery
Pediatric
Spine
Trauma
Vascular
Peripheral
Skull Base Neurosurgery

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Colin Watts
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Marianne Juhler
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Section of Neurosurgery

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About the EANS



THE EUROPEAN ASSOCIATION
OF NEUROSURGICAL SOCIETIES

The European Association of Neurosurgical Societies (EANS) is both an independent federation of European national neurosurgical societies and a fast-developing association of individual neurosurgeons from around the world.

We are a professional community whose aim is to enhance the quality of neurosurgical patient care through training, education and research. A key way in which we fulfil this objective is by facilitating the exchange of scientific information at the highest level through the organisation of meetings, symposia and educational courses – with the annual Congress as our flagship event.

A growing number of fellowship and observership opportunities are available to our members, as is a comprehensive online library of neurosurgical material via the EANS Academy.

To find out more about the EANS, our activities and membership please go to www.eans.org.



For more information about us, our activities and membership, please visit our website at www.eans.org and get in touch via info@eans.org.

You can also find us on Facebook as www.facebook.com/EANSOnline, and on Twitter as [@EANSOnline](https://twitter.com/EANSOnline).

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UEMS/EACCME Accreditation



The eEANS2021 – 21st European Congress of Neurosurgery, HAMBURG, Germany, 03/10/2021-07/10/2021 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with **31 European CME credits** (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of **AMA PRA Category 1 Credits™**. Information on the process to convert EACCME® credit to AMA credit can be found at www.ama-assn.org/education/earn-credit-participation-international-activities.

Industry Support Disclosure

This event is supported, in part, by funding from industry. All support is managed in strict accordance with UEMS-EACCME® accreditation criteria and standards for commercial support.

Appropriate acknowledgement of all supporting organizations is made in the section **Recognition, Acknowledgements & Industry Support** of this book and on the congress website.

The background of the slide is a deep blue gradient. Overlaid on this are numerous thin, glowing blue lines that sweep across the frame in various directions, creating a sense of motion and energy. A faint, semi-transparent grid pattern is also visible, particularly in the upper half of the image, adding a technical or scientific feel to the design.

Scientific Programme

Programme at a Glance



eEANS2021
Neurosurgery
in Translation

Sunday, October 3

	Room 1	Room 2
08:30 - 12:30	JOINT EANS/ESSFN Symposium	Joint Spine Societies Symposium
12:40 - 15:45	Research in Neurosurgery: How, when, on what and why?	
15:00		JOINT EANS/ESPN Symposium
17:00 - 18:00	EANS Research Grants & Awards	
18:30		

Programme at a Glance

Monday, October 4

	Room 1	Room 2	Room 3
08:30 - 08:40	Opening Ceremony		
08:40 - 09:10	50 th EANS Anniversary		
09:15 - 10:55	Spine	Vascular	
	Coffee Break		
11:10 - 12:40	Degenerative Spinal Disease	Aneurysm/SAH	Diversity in Neurosurgery
12:40 - 13:10	Lunch Break (Visit sponsors and grab a sandwich session)	12:45 - 13:00 Industry Sponsored Session	
13:10 - 14:25	Treatment of Spinal Metastatic Disease (Masterclass)	Tips & Tricks Session (Masterclass)	Ethics of budget versus Benefit (Masterclass)
14:40 - 15:20	Spinal Tumors	Vascular malformations/ ICH	
16:20	Coffee Break		
16:30 - 18:00	Spine	Treatment of AVMs today (Masterclass)	IONM (Masterclass)
18:00 - 18:30	The Executive Board and Section Chairs "Picks of the Day", LIVE from Studio		

eEANS2021 Thematic Reference

Vascular Neurosurgery

General

Spinal Neurosurgery

Pediatric Neurosurgery



Room 4	Room 5	Oral ePoster Presentations
		Oral ePoster Presentations (on demand)
Neuro-Oncology		
Neuro-Oncology on Brain Mapping (Masterclass)		
Neuro-Oncology & Radiosurgery		
Complex Care Pathways		

Neuro-Oncology

Functional Neurosurgery

Neurotrauma & Critical Care

Multidisciplinary

Other

Programme at a Glance

Tuesday, October 5

	Room 1	Room 2	Room 3
08:00 - 09:40	EANS/WFNS		Neuro-Oncology
	Coffee Break		
09:50 - 10:25	Lifetime AA and European Lecture		
10:35 - 11:35	Spine & Pediatric (Masterclass)	Clip/Coil	Complications in Neurosurgery
12:05 - 13:35	Lunch Break (Visit sponsors and grab a sandwich session)	12:10 - 12:25 Industry Sponsored Session	
13:35 - 14:05	Free Topics	Vascular	Skull Base
14:15 - 15:45	Spine & Pediatric	Clipping of Aneurysms	Skull Base (Masterclass)
15:55 - 17:25	Spinal Trauma	Peripheral Nerve Surgery (Masterclass)	Skull Base
17:25 - 18:00	The Executive Board and Section Chairs "Picks of the Day", LIVE from Studio		

eEANS2021 Thematic Reference

Vascular Neurosurgery

Spinal Neurosurgery

General

Pediatric Neurosurgery



Room 4	Room 5	Oral ePoster Presentations
		Oral ePoster Presentations (on demand)
Neuro-Oncology	Q&A: Vascular & Neuro-Oncology (Oral Flash)	
Neuro-Oncology & Pediatric (Masterclass)	Q&A: Spine & Trauma (Oral Flash)	
Neuro-Oncology	Q&A: Radiosurgery, Functional, PNS, IONM, History & Ethics, New Technology, Research & Outcomes (Oral Flash)	
Oncology Research	Q&A: Skull Base, Pediatric, CSF (Oral Flash)	

Neuro-Oncology

Functional Neurosurgery

Neurotrauma & Critical Care

Multidisciplinary

Other

Programme at a Glance

Wednesday, October 6

	Room 1	Room 2	Room 3
08:00	Brain & Spine Launch		Skull Base
09:00			
09:40	Industry Sponsored Session		
09:50 - 11:20	Trauma	PNS - Tumors, Basic and Innovative	Skull Base
	Industry Sponsored Session		
11:30 - 13:00	Trauma		Skull Base
	Industry Sponsored Session		
13:00 - 13:30	Industry Sponsored Session	13:05 - 13:20 Industry Sponsored Session	
13:30	Trauma (Masterclass)	PNS - Trauma 1 & 2	Skull Base & Radiosurgery (Masterclass)
14:45			
15:00	Industry Sponsored Session		
15:10	Trauma		Skull Base & Radiosurgery (Masterclass)
16:10			
16:30			
16:40 - 17:10	The Executive Board and Section Chairs "Picks of the Day", LIVE from Studio		
17:10 - 18:10	Industry Sponsored Session	Industry Sponsored Session	Industry Sponsored Session

eEANS2021 Thematic Reference

Vascular Neurosurgery

General

Spinal Neurosurgery

Pediatric Neurosurgery



Room 4	Room 5	Oral ePoster Presentations
		Oral ePoster Presentations (on demand)
CSF & Pediatric (Masterclass)	Epilepsysurgery / Pain	
CSF	Epilepsy; minimal invasive therapy (Masterclass)	
(Visit sponsors and grab a sandwich session)		
Endoscopy and CSF	Epilepsysurgery	
New Tech, Research and Outcomes	Functional & Radiosurgery	
Industry Sponsored Session		

Neuro-Oncology

Functional Neurosurgery

Neurotrauma & Critical Care

Multidisciplinary

Other

Programme at a Glance

Thursday, October 7

	Room 1	Room 2	Room 3
08:00 - 09:40	Trauma		Education & Training
09:50 - 11:20	Trauma	Research (Masterclass)	Young Neurosurgeons
11:30 - 12:30	Trauma & Pediatric (Masterclass)	New Technology & Research Spine	Young Neurosurgeons
13:00 - 13:30	Closing Ceremony		

Room 4	Room 5	Oral ePoster Presentations
		Oral ePoster Presentations (on demand)
	DBS in translation (Masterclass)	
	DBS	

Neuro-Oncology

Multidisciplinary

Functional Neurosurgery

Other

Neurotrauma & Critical Care

Acknowledgement to the Abstract Reviewers

Great thanks to the eEANS2021 Abstract Reviewers

François Alesch
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Gregor Antoniadis
Naci Balak
Lorenzo Bello
Moncef Berhouma
Ciaran Bolger
Michaël Bruneau
Andras Buki
Luigi Cavallo
Athanasios Chatzisotiriou
Hans Clusmann
Jan Frederic Cornelius
Marcus Czabanka
Roy Thomas Daniel
Gleb Danilov
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Marianne Juhler
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Joachim Krauss
Thomas Kretschmer
Sandro Krieg
Aki Laakso
Jesus Lafuente
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Torstein Meling
Mahmoud Messerer
Martina Messing-Jünger
Wouter Moojen
Mika Niemelä
Viola Olesen
Dimitris Paraskevopoulos
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Aurelia Peraud
Wilco Peul
Piero Picozzi
Alexander Potapov
Andreas Raabe
Katrin Rabiei
Lukas Rasulic
Jean Regis
Florian Ringel
Pierre Robe
Radoslaw Rola
Damianos Sakas
Francesco Sala
Kita Sallabanda
Martin Sames
Adib Sasan
Karl Schaller
Henry Schröder
Gerrit Alexander Schubert
Michael Schwake
Christian Senft
Francesco Signorelli
Andrey Sitnikov
Martin Stienen
Claudius Thomé
Jörg Tonn
Parmenion Tsitsopoulos
Eberhard Uhl
Andreas Unterberg
Peter Vajkoczy
Jan Willem Berkelbach van der Sprenkel
Johannes van Loon
Dirk Van Roost
Miroslav Vukic
Peter Whitfield
Idoya Zazpe

Scientific Programme

Sunday, October 3

08:30 – 12:30 **JOINT EANS/ESSFN Symposium** Room 1

Chair: Dirk van Roost (Ghent, Belgium)
Chair: Olaf Schijns (Maastricht, The Netherlands)
Chair: António José Gonçalves Ferreira (Portugal)

08:30 – 09:30 **Psychiatric neurosurgery: past and present**
Patric Blomstedt (Sweden)

09:30 – 10:00 **New Developments in Pain Treatment**
Tipu Aziz (Oxford, United Kingdom)

10:00 – 10:30 **The role of functional neuroimaging in deep brain stimulation for psychiatric disorders**
Dejan Georgiev (Ljubljana, Slovenia)

10:30 – 11:00 **Break**

11:00 – 11:30 **Psychosurgery for OCD**
Bart Nuttin (Leuven, Belgium)

11:30 – 12:00 **Translational Developments in Psychosurgery**
Stephan Chabardes (Grenoble, France)

12:00 – 12:30 **New developments in DBS for movement disorders**
Olga Parras (United Kingdom)

08:30 – 12:30 **Joint Spine Societies Symposium** Room 2

Chair: Andreas K. Demetriades (Edinburgh, United Kingdom)
Chair: John Duff (Genolier, Switzerland)

08:30 – 08:30 **Opening of Symposium**

08:30 – 08:35 **Welcome & Introduction**
Andreas K. Demetriades (Edinburgh, United Kingdom)

08:35 **Part I- Intradural pathology: EANS**

08:35 – 08:50 **Surgical management of intramedullary cavernomas**
Marcel Ivanov (Sheffield, United Kingdom)

08:50 – 09:05 **Image guided intradural tumour surgery**
John Duff (Genolier, Switzerland)

- 09:05 – 09:20 **Tips and tricks on intradural extramedullary spinal cord tumours**
Nikolay Konovalov (Moscow, Russian Federation)
- 09:20 – 09:35 **The DISCUS randomised controlled trial for spinal cord injury**
Samira Saadoun (London, United Kingdom)
- 09:35 **Part II- Metastatic spine disease: AO SPINE**
- 09:35 – 09:50 **Spinal metastasis – Interdisciplinary approach of treatment: What is needed**
Bastian Storzer (Munich, Germany)
- 09:50 – 10:05 **Indications for surgery in metastatic spine**
Matti Scholz (Frankfurt, Germany)
- 10:05 – 10:20 **New therapeutic options, less is more?**
Florian Ringel (Mainz, Germany)
- 10:20 – 10:35 **Spinal metastasis: what can we learn from wrong decisions?**
Marc Dreimann (Hamburg, Germany)
- 10:35 **Part III- Cranio-vertebral junction: WFNS & AANS**
- 10:35 – 10:50 **360 degrees approaches to the Cranio-Vertebral Junction**
Massimiliano Visochi (Roma, Italy)
- 10:50 – 11:05 **The 270° Circumferential Microsurgical Decompression of the Foramen Magnum in Adult Chiari Malformation Type I with Syringomyelia**
Kenan Arnautovic (Memphis, TN, United States)
- 11:05 – 11:20 **Osteobiologics- Classification and Guidelines for use in ACDF procedures**
Zorica Buser (Los Angeles, United States)
- 11:20 **Part IV- Degenerative: EUROSPINE**
- 11:20 – 11:35 **Sagittal balance considerations in the elderly**
Jörg Franke (Magdeburg, Germany)
- 11:35 – 11:50 **Management of lumbar stenosis in degenerative scoliosis**
Dominique Rothenfluh (Oxford, United Kingdom)
- 11:50 – 12:05 **How can registries help us improve the outcomes of spinal surgery?**
Everard Munting (Ottignies, Belgium)
- 12:05 – 12:30 **Part V- Discussion and Close of session**

12:40 – 15:45 Research in Neurosurgery: How, when, on what and why?
Room 1

Chair: Manfred Westphal (Hamburg, Germany)
Chair: Aki Laakso (Oulu, Finland)

12:40 – 12:50 Introduction: Research and the Neurosurgeon
Manfred Westphal (Hamburg, Germany)

12:50 – 13:10 Consortional Research in Neurooncology: The German Glioma Network
Michael Weller (Zurich, Switzerland)

13:10 – 13:30 Molecular Research in Neuro-Oncology
Rolf Bjerkvig (Norway)

13:30 – 13:50 Consortional Research in Clinical Neurovascular Surgery
Peter Vajkoczy (Berlin, Germany)

13:50 – 14:10 Research in Neuro-Trauma
Peter Hutchinson (Cambridge, United Kingdom)

14:10 – 14:30 Epilepsy: A Broad Research Topic
Olaf Schijns (Maastricht, The Netherlands)

14:30 – 14:50 Clinical Trials in Spinal Neurosurgery
Wilco Peul (Leiden & The Hague, The Netherlands)

14:50 – 15:10 Deep Brain Stimulation and Connectomics
Philippe De Vloo (Leuven, Belgium)

15:10 – 15:30 Can't See the Wood for the Trees? Science with Medical Data
Frank Ueckert (Hamburg, Germany)

15:30 – 15:45 Live Close-out at EANS Studio

15:00 – 18:30 JOINT EANS/ESPN Symposium
Room 2

Chair: Marianne Juhler (Copenhagen, Denmark)
Chair: Gianpiero Tamburrini (Rome, Italy)
Chair: Henry Schroeder (Greifswald, Germany)

15:00 – 15:00 PINEAL REGION TUMORS: the different background, diagnostic work-up and multidisciplinary management in adults and children

15:00 PART I

15:00 – 15:10 Pineal Region Tumors: the different histological background and their clinical implications in children
Alexandre Vasiljevic (France)

- 15:10 – 15:20 **Pineal Region Tumors: the different histological background and their clinical implications in adults**
Marco Gessi (Rome, Italy)
- 15:20 – 15:30 **Discussion**
Sergey Gorelyshev (Moscow, Russian Federation)
Spyros Sgouros (Greece)
- 15:30 – 15:40 **Radiological Diagnostic work-up in adults and children**
Felice D'Arco (United Kingdom)
- 15:40 – 15:50 **Discussion**
Gianpiero Tamburrini (Rome, Italy)
Ulrich-Wilhelm Thomale (Berlin, Germany)
- 15:50 – 16:00 **Multidisciplinary management principles: adults vs children**
Didier Frappaz (France)
- 16:00 – 16:10 **Discussion**
Marianne Juhler (Copenhagen, Denmark)
Veronica Biassoni (Italy)
Radek Fric (Oslo, Norway)
- 16:10 – 16:20 **Endoscopic management: is it mainly a pediatric interest? (Tips, tricks and surgical pitfalls)**
Ulrich-Wilhelm Thomale (Berlin, Germany)
- 16:20 – 16:30 **Discussion**
Shlomi Constantini (Italy)
Gianpiero Tamburrini (Rome, Italy)
Henry Schroeder (Greifswald, Germany)
Federico diRocco (France)
- 16:30 – 16:40 **Break**
- 16:40 **PART II**
- 16:40 – 16:50 **Surgical Approaches: Transcallosal**
Atul Tyagi (United Kingdom)
- 16:50 – 17:00 **Surgical Approaches: Transtentorial**
Carmine Mottolese (France)
- 17:00 – 17:10 **Surgical Approaches: Supracerebellar**
Sergey Gorelyshev (Moscow, Russian Federation)
- 17:10 – 17:30 **Discussion**
Martina Messing-Jünger (Sankt Augustin, Germany)
Spyros Sgouros (Greece)
Gianpiero Tamburrini (Rome, Italy)

17:30 Outcome and results in children vs adults

17:30 – 17:45 Children

Veronica Biassoni (Italy)

17:45 – 18:00 Adults

Manfred Westphal (Hamburg, Germany)

18:00 – 18:10 Discussion

Didier Frappaz (France)

Miroslav Gjurasin (Zagreb, Croatia)

Francesco Sala (Verona, Italy)

18:10 – 18:15 Conclusions

Federico diRocco (France)

Francesco Sala (Verona, Italy)

Gianpiero Tamburrini (Rome, Italy)

17:00 – 18:00 EANS Research Grants & Awards

Room 1

17:00 – 17:09 EANS Research Fund - Overview

Peter Hutchinson (Cambridge, United Kingdom)

17:09 – 17:12 Exploring new biomarkers for therapy-response and clinical outcome in brain metastases patients by in-depth characterization of the tumor microenvironment and the blood-tumor- barrier using state-of-the-art imaging mass cytometry

Stefanos Voglis (Zurich, Switzerland)

17:12 – 17:15 Electrophysiomics of Seizures – Characterization of Electrophysiological Network-Properties in Epileptogenic Brain Lesions using ECoG and High-dimensional Micro-electrode Tissue Arrays

Jonas Ort (Aachen, Germany)

17:15 – 17:18 Database of Spinal Cord Injury on Recovery and Evaluation of Timing (D-SCIRET)

Valerie ter Wengel (The Hague, The Netherlands)

17:18 – 17:21 Screening for Degenerative Cervical Myelopathy (SCREEN- DCM) in Patients Based on Signs, Symptoms and Known Risk Factors

Aria Nouri (Geneva, Switzerland)

17:21 – 17:24 Glutamate excitotoxicity in brain metastases from lung, breast and melanoma treated with stereotactic radiosurgery

Francesca Roncelli (Milan, Italy)

17:24 – 17:27 Temporal change of mitochondrial dysfunction in a SAH rat model

Jesper Bomers (Copenhagen, Denmark)

- 17:27 – 17:30 **Determination of SARS-CoV-2 neuroinvasion in humans**
Alfio Spina (Milan, Italy)
- 17:30 – 17:33 **Automated intraoperative anatomical recognition using machine vision:
Improving navigation and safety in microsurgery**
Victor E. Staartjes (Zurich, Switzerland)
- 17:33 – 17:36 **Use of non-invasive optical analysis in Neurosurgery – A pilot study**
Giulio Anichini (London, United Kingdom)
- 17:36 – 17:39 **Cerebrospinal fluid drives subarachnoid hemorrhage related secondary
brain injury**
Kevin Akeret (Zurich, Switzerland)
- 17:39 – 17:42 **Patterns of Neointima Formation After Coil or Stent Treatment in a Rat
Saccular Sidewall Aneurysm Model**
Basil Erwin Grüter (Aarau, Switzerland)

Monday, October 4

.....

08:30 – 08:40 **Opening Ceremony** Room 1

Chair: Andreas K. Demetriades (Edinburgh, United Kingdom)
Chair: Carlo Schaller (Genève, Switzerland)

08:40 – 09:10 **50th EANS Anniversary**
Chair: Andreas K. Demetriades (Edinburgh, United Kingdom)
Chair: Carlo Schaller (Genève, Switzerland)

08:40 – 08:55 **Presentation**
André Grotenhuis (Nijmegen, The Netherlands)

08:55 – 08:58 **History of EANS**
Ken Lindsay (United Kingdom)

08:58 – 09:01 **History of EANS**
Johannes Schramm (Germany)

09:01 – 09:06 **History of EANS**
Vladimir Benes (Czech Republic)

09:06 – 09:16 **History of EANS**
Jesus Lafuente (Barcelona, Spain)
Carlo Schaller (Genève, Switzerland)
André Grotenhuis (Nijmegen, The Netherlands)

09:15 – 10:55 **Spine** Room 1

Chair: John Duff (Genolier, Switzerland)
Chair: Florian Ringel (Mainz, Germany)

09:15 – 09:30 **State of the art treatment of cervical spondylotic myelopathy**
Giuseppe Barbagallo (Catania, Italy)

09:30 – 09:35 **Discussion**

09:35 – 09:50 **Spinal Vascular Pathology**
Wouter Moojen (The Hague, The Netherlands)

09:50 – 09:55 **Discussion**

09:55 – 10:10 **Low grade infections**
Bernhard Meyer (München, Germany)

10:10 – 10:15 **Discussion**

- 10:15 – 10:30 **Robotics and navigation**
John Duff (Genolier, Switzerland)
- 10:30 – 10:35 **Discussion**
- 10:35 – 10:55 **The risk and time trends for reoperations after surgery for degenerative cervical spine disease between 1999 and 2015 in Finland**
Anna Kotkansalo (Turku, Finland)

09:15 – 10:55 **Vascular Plenary Session**
Room 2

Chair: Andreas Raabe (Bern, Switzerland)
Chair: Daniel Hänggi (Düsseldorf, Germany)

- 09:15 – 09:30 **Intracerebral hemorrhage: when and how to operate**
Jürgen Beck (Freiburg, Germany)
- 09:30 – 09:35 **Discussion**
- 09:35 – 09:50 **Incidental cerebral aneurysms: What is new?**
Timo Koivisto (Kuopio, Finland)
- 09:50 – 09:55 **Discussion**
- 09:55 – 10:15 **Results of the ULTRA trial**
Rene Post (Amsterdam, The Netherlands)
- 10:15 – 10:35 **ASPECT – a new clinically useful hydrocephalus classification**
Marianne Juhler (Copenhagen, Denmark)
- 10:35 – 10:55 **Discussion**

11:10 – 12:40 **Degenerative Spinal Disease**
Room 1

Chair: Enrico Tessitore (Geneva, Switzerland)
Chair: Avelino Parajon (Madrid, Spain)

- 11:10 – 11:20 **Annular Closure Device. What is the evidence?**
Claudius Thomé (Innsbruck, Austria)
- 11:20 – 11:21 **Discussion**
- 11:21 – 11:29 **Full-endoscopic versus open discectomy for Sciatica: A randomized controlled trial**
Pravesh Gadhradj (Rotterdam, The Netherlands)
- 11:29 – 11:37 **Clinical efficiency of operating room-based sliding gantry CT compared to mobile cone-beam CT-based navigated pedicle screw placement – A study on 853 patients and 6733 screws**
Sebastian Ille (Munich, Germany)

- 11:37 – 11:45 **Overweight and smoking are associated with reoperation for recurrent lumbar disc herniation**
Anita M Klukowska (Nottingham, United Kingdom)
- 11:45 – 11:53 **A comparative review of bone growth stimulation technologies in patients undergoing cervical and lumbar fusion**
Kaushik Das (White Plains, United States)
- 11:53 – 12:01 **Placebo effect of sham spine procedures in chronic low back pain: A systematic review**
Ammer M. Jamjoom (Leeds, United Kingdom)
- 12:01 – 12:09 **Epidural steroid injections for lumbar radiculopathy are superior on the short and medium-term compared to epidural placebo injections**
Eduard Verheijen (Leiden, The Netherlands)
- 12:09 – 12:17 **Intermodal comparison of supine magnetic resonance imaging (MRI) and computed tomography (CT) versus functional radiographs to determine dynamic instability in patients with lumbar degenerative spondylolisthesis**
Harald Krenzlín (Mainz, Germany)
- 12:17 – 12:40 **Discussion**

11:10 – 12:40 **Aneurysm/SAH**
Room 2

Chair: Andreas Gruber (Linz, Austria)

- 11:10 – 11:20 **SAH and DCI – are standardized imaging protocols necessary?**
Dorothee Mielke (Göttingen, Germany)
- 11:20 – 11:21 **Discussion**
- 11:21 – 11:31 **Aneurysmal subarachnoid hemorrhage and cerebral vasospasm: The tightest connection?**
Djula Djilvesi (Novi Sad, Serbia)
- 11:31 – 11:32 **Discussion**
- 11:32 – 11:40 **Improvement of outcome prediction in poor grade aneurysmal subarachnoid hemorrhage, the herniation WFNS score – an international prospective multicenter study**
Christian Fung (Freiburg, Germany)
- 11:40 – 11:48 **Cerebrospinal fluid hemoglobin drives subarachnoid hemorrhage-related secondary brain injury**
Kevin Akeret (Zurich, Switzerland)
- 11:48 – 11:56 **Microvasospasm in the early phase after subarachnoid hemorrhage is independent of pericytes**
Julian Schwarting (Munich, Germany)

11:56 – 12:40 **Discussion**

11:10 – 12:40 **Diversity in Neurosurgery**
Room 3

Chair: Marike Broekman (The Netherlands)

11:10 – 11:22 **Parenthood and Neurosurgery – Challenges for Fathers and Initiatives for Improvement**
Uri Handelsberg (Jerusalem, Israel)

11:22 – 11:25 **Discussion**

11:25 – 11:37 **Parenthood and Neurosurgery – Challenges for Mothers and Initiatives for Improvement**
Pia Vayssiere (Geneva, Switzerland)

11:37 – 11:40 **Discussion**

11:40 – 11:52 **Women Role in Neurosurgical Research – Is the Gender Gap Improving?**
Ana Rodríguez Hernández (Barcelona, Spain)

11:52 – 11:55 **Discussion**

11:55 – 12:07 **Sexual harrassment in German Neurosurgery – Fact or Fiction?**
Yu-Mi Ryang (Berlin, Germany)

12:07 – 12:10 **Discussion**

12:10 – 12:22 **People of color and minorities in European neurosurgery**
Andrew Alalade (Preston, United Kingdom)

12:22 – 12:40 **Discussion**

11:10 – 12:40 **Neuro-Oncology**
Room 4

Chair: Christian Senft (Jena, Germany)

Chair: Nicolas Foroglou (Thessaloniki, Greece)

11:10 – 11:20 **Immune therapy/current treatment novelties for glioblastoma**
Johnny Duerinck (Brussels, Belgium)

11:20 – 11:21 **Discussion**

11:21 – 11:31 **Epigenetic perspectives in diagnostics and treatment in neurooncology**
Anna-Maria Barciszewska (Poznań, Poland)

11:31 – 11:32 **Discussion**

- 11:32 – 11:42 **Updated neurosurgical role in CNS lymphoma**
Nicolas Foroglou (Thessaloniki, Greece)
- 11:42 – 11:43 **Discussion**
- 11:43 – 11:51 **A call to arms: the immune response to biopsy in glioma**
Thomas Sebastiaan van Solinge (Charlestown, United States)
- 11:51 – 11:59 **Data-driven surgical decision-making – the prediction of resectability in patients with glioblastoma using machine learning**
Julius Maximilian Kernbach (Aachen, Germany)
- 11:59 – 12:07 **The clinical course of IDH1/2-wildtype astrocytomas**
Naureen Keric (Mainz, Germany)
- 12:07 – 12:15 **Intra-operative microdialysis for tumor biomarker discovery – A candidate platform for accelerated pharmacodynamic feedback**
Terry Burns (Rochester, United States)
- 12:15 – 12:23 **Middle frontal gyrus and area 55b: perioperative mapping and language outcomes**
Mariam Awan (London, United Kingdom)
- 12:23 – 12:31 **Tractography for subcortical resection of gliomas is highly accurate for motor and language function: ioMRI-based elastic fusion disproves the severity of brain shift**
Sebastian Ille (Munich, Germany)
- 12:31 – 12:40 **Discussion**

12:45 – 12:55 **Industry sponsored Session**
Room 2

Chair: Olaf Haase (Germany)

13:10 – 14:10 **Treatment of Spinal Metastatic Disease (Masterclass)**
Room 1

Chair: Jesus Lafuente (Barcelona, Spain)
Chair: Peter Vajkoczy (10117 Berlin, Germany)

- 13:10 – 13:25 **MIS in spinal metastatic disease – why, when and how?**
Jesus Lafuente (Barcelona, Spain)
- 13:25 – 13:40 **Separation surgery**
Peter Vajkoczy (Berlin, Germany)
- 13:40 – 14:10 **Discussion**

13:10 – 14:40 **Tips & Tricks Session (Masterclass)**
Room 2

Chair: Andreas Raabe (Bern, Switzerland)

13:10 – 13:25 **Cranial DAVF**
Luca Regli (Zurich, Switzerland)

13:25 – 13:40 **Cranial AVMs**
Marco Cenzato (Milano, Italy)

13:40 – 13:55 **Bypass**
Jacques Morcos (Miami, United States)

13:55 – 14:40 **Discussion**

13:10 – 14:25 **Ethics of budget versus Benefit (Masterclass)**
Room 3

Chair: Marike Broekman (The Netherlands)
Chair: Olaf Schijns (Maastricht, The Netherlands)

13:10 – 13:25 **Novel treatments. The ethical problem of benefit versus cost in tumour treatment**
Marike Broekman (The Netherlands)

13:25 – 13:40 **Ethics of cost containment in delivering neurosurgical services**
Tiit Mathiesen (Copenhagen, Denmark)

13:40 – 13:55 **Ethics in Hospital Management**
Naci Balak (Istanbul, Turkey)

13:55 – 14:25 **Discussion**

13:10 – 14:10 **Neuro-Oncology on Brain Mapping (Masterclass)**
Room 4

Chair: Francesco Sala (Verona, Italy)

13:10 – 13:25 **Synchronous cortical stimulation and task presentation during speech mapping in resection of intrinsic brain lesions**
David Colle (Gent, Belgium)

13:25 – 13:40 **Dynamic subcortical stimulation in brain tumor surgery**
Olga Herasymenko (Ukraine)

13:40 – 14:10 **Discussion**

14:50 – 16:20 **Spinal Tumors**
Room 1

Chair: Nikolay Konovalov (Moscow, Russian Federation)

- 14:50 – 15:00 **Complex Tumor Surgery of the Craniovertebral Junction**
Massimiliano Visocchi (Roma, Italy)
- 15:00 – 15:01 **Discussion**
- 15:01 – 15:17 **Surgical strategies for intramedullary spinal cord tumors: experience of more than 900 cases**
Nikolay Konovalov (Moscow, Russian Federation)
- 15:17 – 15:18 **Discussion**
- 15:18 – 15:26 **Transtubular image-guided surgery for spinal lesions: techniques, results and complications in a consecutive series of 60 cases**
Rodolfo Maduri (Genolier, Switzerland)
- 15:26 – 15:34 **Maximal resection of chordomas at a specialist centre is safe and improves survival**
Inga Usher (London, United Kingdom)
- 15:34 – 15:42 **Identifying new predictive factors for survival after surgery for spinal metastases: an exploratory in-depth retrospective analysis**
Steven Smeijers (Leuven, Belgium)
- 15:42 – 15:50 **En bloc resection of grade II intramedullary ependymomas is associated with superior gross total resection (GTR) rates and functional outcome at 3 months**
Vincent Healy (Dublin, Ireland)
- 15:50 – 15:58 **Surgical intervention for patients with acute spinal cord injury due to spinal metastases: timing and functional outcome**
Hanno Sebastian Meyer (Munich, Germany)
- 15:58 – 16:06 **Comparison of the efficacy and safety of the posterior and paramedian minimally invasive approaches to ventral and ventro-lateral intradural extramedullary tumors**
Dmitry Asyutin (Moscow, Russian Federation)
- 16:06 – 16:20 **Discussion**

14:50 – 16:20 **Vascular malformations/ICH**
Room 2

Chair: Torstein Meling (Genève, Switzerland)
Chair: Volodymyr Smolanka (Uzhhorod, Ukraine)

14:50 – 15:00 **AVM and quality of life**
Aki Laakso (Oulu, Finland)

15:00 – 15:01 **Discussion**

15:01 – 15:11 **Pathophysiology and surgical incidence of ICH in Sweden.**
Lovisa Tobieson (Linköping, Sweden)

15:11 – 15:12 **Discussion**

15:12 – 15:20 **Cigarette smoking is more prevalent in patients with brain arteriovenous malformations compared to general population: a cross-sectional population-based study**
Anni Pohjola (Helsinki, Finland)

15:20 – 15:28 **Early venous sacrifice technique for AVM resection: a prospective institutional study**
Solay Farhat (Beirut, Lebanon)

15:28 – 15:36 **Cerebral hyperperfusion syndrome after ECIC bypass surgeries. Prognostic formula for its risk assessment**
Alexander Nemirovskiy (Kazan, Russian Federation)

15:36 – 15:44 **Complications of cerebral revascularization surgery**
Vahan Dalibaldyan (Moscow, Russian Federation)

15:44 – 15:52 **Quantification of vessel wall contrast enhancement to monitor disease progression in Moyamoya disease**
Sophie Shih-Yüing Wang (Tuebingen, Germany)

15:52 – 16:00 **Aneurysm forecast – a tool for clinical use**
Christian Doenitz (Regensburg, Germany)

16:00 – 16:20 **Discussion**

14:50 – 16:20 **Neuro-Oncology & Radiosurgery**
Room 4

Chair: Bodo Lippitz (Hamburg, Germany)
Chair: Andray Golanov (Moscow, Russian Federation)

14:50 – 15:00 **Quantitative UHF MRI techniques as potential biomarkers of response in patients treated with SRS for metastatic brain tumors – preliminary results**
Radoslaw Rola (Lublin, Poland)

15:00 – 15:01 **Discussion**

- 15:01 – 15:11 **Minimally Invasive Surgery & Radiosurgery for Cerebral Metastases**
Vincent Lubrano (Saint Jean, France)
- 15:11 – 15:12 **Discussion**
- 15:12 – 15:22 **Radiosurgery & Immunology of Metastases**
Bodo Lippitz (Hamburg, Germany)
- 15:22 – 15:23 **Discussion**
- 15:23 – 15:31 **Gamma Knife radiosurgery for brain metastases in non-small cell lung cancer patients treated with immunotherapy or targeted therapy**
Anna Cho (Vienna, Austria)
- 15:31 – 15:39 **Neutrophil-to-lymphocyte ratio is superior as a prognostic predictor in radiosurgically treated non-small cell lung cancer brain metastases patients under immunotherapy or targeted therapy**
Anna Cho (Vienna, Austria)
- 15:39 – 15:47 **Long term results of Gamma Knife radiosurgery for deep-seated cavernous malformations**
Goktug Akyoldas (Istanbul, Turkey)
- 15:47 – 15:55 **Stereotactic radiosurgery for cerebral cavernous malformation: Comparison of hemorrhage rates before and after stereotactic radiosurgery**
Beste Gulsuna (Ankara, Turkey)
- 15:55 – 16:03 **MRI evaluation of nidus occlusion after Gamma Knife radiosurgery of intracranial arteriovenous malformations. a prospective preliminary study**
Dorian Hirschmann (Vienna, Austria)
- 16:03 – 16:20 **Discussion**
- 16:30 – 18:00 **Spine**
Room 1

Chair: Veit Rohde (Germany)

- 16:30 – 16:38 **Unilateral approaches for posterior spinal canal decompression in cervical spondylotic myelopathy**
Sebastian Siller (Munich, Germany)
- 16:38 – 16:46 **Clinical adjacent segment pathology after anterior cervical decompression surgery for cervical degenerative disc disease: a single center retrospective cohort study with long-term follow-up**
Valérie Schuermans (Heerlen, The Netherlands)
- 16:46 – 16:54 **Cortical volume reductions as a sign of secondary cerebral and cerebellar impairment in patients with degenerative cervical myelopathy**
Christian Blume (Aachen, Germany)

- 16:54 – 17:02 **Full Endoscopic Thoracic Discectomy (FETD)**
Yasuhiko Nishimura (Wakayama, Japan)
- 17:02 – 17:10 **Body image and cosmesis after percutaneous transforaminal endoscopic discectomy versus conventional open microdiscectomy for sciatica caused by lumbar disk herniation: results of a randomized controlled trial**
Pravesh Gadhradj (Rotterdam, The Netherlands)
- 17:10 – 17:18 **Exploring macrophage differentiation in herniated disc tissue in patients with radiculopathy; is this associated with Modic Changes?**
Niek Djuric (Leiden, The Netherlands)
- 17:18 – 17:26 **Foraminal stenoses and far lateral disc herniations at L5/S1: Radiographic risk factors for therapeutic failure**
Nikolaus Kögl (Innsbruck, Austria)
- 17:26 – 17:34 **Comparative analysis of surgical effectiveness between minimal invasive decompression and transforaminal lumbar interbody fusion in lumbar stenosis treatment**
Evgeny Brinyuk (Moscow, Russian Federation)
- 17:34 – 17:42 **Effect of body mass index on perioperative outcomes in minimally invasive Trans-Kambin posterior oblique lateral lumbar interbody fusion versus open fusions: a multivariate analysis**
Hamid Abbasi (Burnsville, United States)
- 17:42 – 17:50 **Sagittal deformity correction with expandable cages with large endplates for thoracolumbar vertebral body replacement**
Stefan Motov (Augsburg, Germany)
- 17:50 – 18:00 **Discussion**
- 16:30 – 17:30 **Treatment of AVMs today (Masterclass)**
Room 2
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- Chair: Bodo Lippitz (Hamburg, Germany)
Chair: Daniel Hänggi (Düsseldorf, Germany)
- 16:30 – 16:45 **News on AVMs: The surgical perspective**
Manfred Westphal (Hamburg, Germany)
David Bervini (Bern, Switzerland)
- 16:45 – 17:00 **News on AVMs: The hybrid perspective**
Adnan Siddiqui (United States)
- 17:00 – 17:15 **Stereotactic Radiosurgery for Cerebral AVM: Clinical Data in from 3 Decades**
Bodo Lippitz (Hamburg, Germany)
- 17:15 – 17:30 **Discussion**

16:30 – 18:00 IONM (Masterclass)
Room 3

Chair: Vincenzo Esposito (Pozzilli, Italy)

- 16:30 – 16:45 Updates in intraoperative language mapping awake**
Andreu Gabarrós (Barcelona, Spain)
- 16:45 – 17:00 Updates in intraoperative motor mapping awake**
Hugues Duffau (Montpellier, France)
- 17:00 – 17:15 Updates in intraoperative language and motor mapping asleep**
Francesco Sala (Verona, Italy)
- 17:15 – 17:23 Neurophysiological monitoring of the laryngeal adductor reflex correlate with sensorimotor laryngeal outcome in skull-base and brainstem surgery**
Kathleen Seidel (Bern, Switzerland)
- 17:23 – 17:31 Feasibility of cerebello-cortical stimulation for intraoperative neurophysiological monitoring of cerebellar mutism**
Davide Giampiccolo (Verona, Italy)
- 17:31 – 18:00 Discussion**

16:30 – 18:00 Complex Care Pathways
Room 4

Chair: Philippe Schucht (Bern, Switzerland)
Chair: André Grotenhuis (Nijmegen, The Netherlands)

- 16:30 – 16:40 Surgery of brain stem tumors**
Volodymyr Smolanka (Uzhhorod, Ukraine)
- 16:40 – 16:41 Discussion**
- 16:41 – 16:51 Endoscopic biopsy of ventricular tumors, rare tumors: pinealis**
Rishi Nandoe Tewarie (The Hague, The Netherlands)
- 16:51 – 16:52 Discussion**
- 16:52 – 17:02 Neurosurgery in Pediatric Neuro-Oncology; Opportunities within our National Comprehensive Childhood Cancer Center**
Eelco Hoving (Utrecht, The Netherlands)
- 17:02 – 17:03 Discussion**
- 17:03 – 17:11 Developing a standardized grading for awake surgeries based on preoperative language abilities and language eloquence classification**
Leonie Kram (Munich, Germany)

- 17:11 – 17:19 **The Clinical Frailty Scale as predictor of overall survival in high-grade glioma patients**
Julia Klingenschmid (Innsbruck, Austria)
- 17:19 – 17:27 **Augmented reality high-definition fiber tractography and fluorescein for high-grade gliomas of the primary motor area**
Sabino Luzzi (Pavia, Italy)
- 17:27 – 17:35 **Cerebral glioma alters the peripheral CD4+ T helper cell phenotype**
Malte Mohme (Hamburg, Germany)
- 17:35 – 17:43 **Risk factors for postoperative communicating hydrocephalus in glioma resection surgery**
Lisa S. Hoenigl (Munich, Germany)
- 17:43 – 17:51 **Threedimensional reconstruction of individual brain anatomy in patients with glioblastoma**
Katharina Hense (Regensburg, Germany)
- 17:51 – 17:59 **Lower grade gliomas: a preliminary retrospective analysis on a single centre series**
Chiara Benedetta Rui (Milano, Italy)
- 17:59 – 18:00 **Discussion**
- 18:00 – 18:30 **The Executive Board and Section Chairs "Picks of the Day",
Room 1 LIVE from Studio**
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Tuesday, October 5

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08:00 – 09:40 **EANS/WFNS**

Room 1

Chair: Jesus Lafuente (Barcelona, Spain)

08:00 – 08:06 **Obituary**

08:06 – 08:18 **Pandemic and humanitarian Neurosurgery: The role of the WFNS**
Miguel Angel Arraez (Malaga, Spain)

08:18 – 08:30 **Collaborations: How Neurosurgeons are working with other disciplines to advance global surgery**
Gail Rosseau (Washington DC, United States)

08:30 – 08:42 **Neurosurgery and covid: clinical and educational implications**
Anil Nanda (United States)

08:42 – 08:54 **International neurosurgical outreach: The guide to development of a sustainable service**
Ian Vlok (Cape Town, South Africa)

08:54 – 09:06 **How can EANS support humanitarian initiatives?**
Marcel Ivanov (Sheffield, United Kingdom)

09:06 – 09:26 **Global surgery, pandemics, mass casualties: How do we achieve the UN healthcare-related Sustainable Development Goals for 2030?**
Russell Andrews (Los Gatos, United States)

09:26 – 09:40 **Discussion**

08:00 – 09:40 **Neuro-Oncology**

Room 3

Chair: Joerg Tonn (Munich, Germany)

08:00 – 08:15 **New 2021 EANO Guidelines – Meningioma (Neurooncology+QM)**
Roland Goldbrunner (Cologne, Germany)

08:15 – 08:20 **Discussion**

08:20 – 08:35 **Dissecting (immune) prognosticators and mechanism of truly long-term survivors in GBM**
Steven De Vleeschouwer (Leuven, Belgium)

08:35 – 08:40 **Discussion**

08:40 – 08:55	Immune checkpoint inhibition for glioblastoma – an update Michael Weller (Zurich, Switzerland)
08:55 – 09:00	Discussion
09:00 – 09:15	The OR as a Lab – where research starts in modern neurosurgical oncology Oliver Schnell (Freiburg im Breisgau, Germany)
09:15 – 09:20	Discussion
09:20 – 09:40	The navigated transcranial magnetic stimulation improving the investigation of structural connectome in glioma induced aphasia Haosu Zhang (Munich, Germany)
09:50 – 10:25 Room 1	European Lecture and Lifetime Achievement Award

09:50 – 09:52	Introduction Carlo Schaller (Genève, Switzerland)
09:52 – 10:17	Hodolgy, Forging new pathways for Functional Neurosurgery Jean Regis (France)
10:17 – 10:17	Lifetime Achievement Award: Prof. Volker Seifert, Frankfurt-Germany
10:17 – 10:20	Introduction Manfred Westphal (Hamburg, Germany)
10:20 – 10:25	Refining Aneurysm Surgery Volker Seifert (Germany)
10:25 – 10:25	Medal of Honour: Nicolas de Tribolet, Geneva/Lausane
10:25 – 10:28	Presentation of the Medal of Honour for Nicolas de Tribolet Carlo Schaller (Genève, Switzerland)
10:35 – 11:25 Room 1	Spine & Pediatric (Masterclass)

Chair: Marianne Juhler (Copenhagen, Denmark)
Chair: Maria Luisa Gandia Gonzalez (Madrid, Spain)

10:35 – 10:50	Mucopolysaccharide storage diseases and the craniocervical junction in children Bart Depreitere (Leuven, Belgium)
10:50 – 11:05	Adolescent Idiopathic Scoliosis Massimo Balsano (Italy)
11:05 – 11:25	Discussion

10:35 – 11:06 **Clip/Coil**
Room 2

Chair: David Netuka (Prague, Czech Republic)

10:35 – 10:45 **Clipping vs. coiling for MCA aneurysms. Single-centre experience and literature review**
Ryszard Czepko (Kraków, Poland)

10:45 – 10:46 **Discussion**
10:46 – 10:56 **Surgical Treatment of Anterior Communicating Artery Aneurysms in the Post ISAT Era**
Domingos Nunes Coiteiro (Lisboa, Portugal)

10:56 – 11:06 **Discussion**

10:35 – 12:05 **Complications in Neurosurgery**
Room 3

Chair: Nicolas Foroglou (Thessaloniki, Greece)
Chair: André Grotenhuis (Nijmegen, The Netherlands)

10:35 – 10:50 **Brain Surgery**
Nicolas Foroglou (Thessaloniki, Greece)

10:50 – 11:05 **Skull Base Surgery**
Sebastien Froelich (Paris, France)

11:05 – 11:20 **Neuroendoscopy**
André Grotenhuis (Nijmegen, The Netherlands)

11:20 – 11:35 **Vascular Surgery and Endovascular Techniques**
Nikolay Velinov (Sofia, Bulgaria)

11:35 – 11:50 **Spine Surgery**
Wilco Peul (Leiden & The Hague, The Netherlands)

10:35 – 12:05 **Neuro-Oncology**
Room 4

Chair: Francesco DiMeco (Milan, Italy)
Chair: Sandro Krieg (Munich, Germany)

10:35 – 10:45 **Laser ablation: an emerging new technique in neurosurgery**
Oliver Bozinov (St.Gallen, Switzerland)

10:45 – 10:46 **Discussion**

10:46 – 10:56 **Translating Ultrasound in Neurosurgery**
Francesco DiMeco (Milan, Italy)

- 10:56 – 10:57 **Discussion**
- 10:57 – 11:05 **Genome-wide association study across pediatric CNS tumors implicates shared predisposition and points to 1q25.2 (PAPPA2) and 11p12 (LRRC4C) as novel candidate susceptibility loci**
Jon Foss-Skiftesvik (Copenhagen, Denmark)
- 11:05 – 11:13 **Spatiotemporal heterogeneity of glioblastoma is dictated by microenvironmental interference**
Dieter Henrik Heiland (Freiburg, Germany)
- 11:13 – 11:21 **Feasibility, safety and impact on overall survival of awake resection for newly diagnosed supratentorial IDH-wildtype glioblastomas in adults**
Alessandro Moiraghi (Paris, France)
- 11:21 – 11:29 **Awake craniotomy for tumor resection: patient experience and perception in an Asian population**
Chin Lik Tan (Singapore, Singapore)
- 11:29 – 11:37 **Fear of progression in patients with new diagnosed brain tumours and their caregivers**
Marion Rapp (Duesseldorf, Germany)
- 11:37 – 11:45 **Intraoperative ultrasound plane wave Doppler imaging allows better definition of gliomal infiltration**
Guillaume Lacoïn (Tours, France)
- 11:45 – 11:53 **Clinical features at presentation for glioblastoma patients impact survival predictions in a machine learning model**
Alistair Lawrence (Cambridge, United Kingdom)
- 11:53 – 12:05 **Discussion**

12:10 – 12:25 **Industry sponsored Session**
Room 2

Chair: Olaf Haase (Germany)

- 12:10 – 12:25 **Industry sponsored Talk**
Julia Onken (Germany)

12:35 – 14:05 **Free Topics**
Room 1

Chair: Massimiliano Visocchi (Roma, Italy)

- 12:35 – 12:45 **Navigation and augmented reality in spinal surgery: Current status and future prospects**
Piero Scarone (Switzerland)

- 12:45 – 12:46 **Discussion**
- 12:46 – 12:56 **Enhanced recovery after spine surgery – integration and value of a new concept**
Bertrand Debono (France)
- 12:56 – 12:57 **Discussion**
- 12:57 – 13:07 **Surgical Management of SPINAL intradural AVM/AVF**
Marcel Ivanov (Sheffield, United Kingdom)
- 13:07 – 13:08 **Discussion**
- 13:08 – 13:16 **Investigation of the relationship between head position and cervical spine alignment in Chiari malformation patients**
Ali Dalgic (Ankara, Turkey)
- 13:16 – 13:24 **The importance of measuring craniovertebral junction angles for diagnosis and treatment of type 1 Chiari and complex Chiari malformations**
Ali Dalgic (Ankara, Turkey)
- 13:24 – 13:32 **Pulsatile cerebrospinal fluid dynamics in Chiari I malformation syringomyelia: Predictive value in posterior fossa decompression and insights into the syringogenesis**
Alice Giotta Lucifero (Pavia, Italy)
- 13:32 – 13:40 **Home intravenous antibiotic therapy in neurosurgical patients: A feasibility study**
Vicki Marie Butenschoen (Munich, Germany)
- 13:40 – 13:48 **A scoring system for the preoperative evaluation of prognosis in spinal infection: the MSI-20 score**
Sara Lener (Innsbruck, Austria)
- 13:48 – 13:56 **Infectious spondylodiscitis of the lumbar spine: conservative antibiotic therapy vs. antibiotic therapy with surgery, and the time of surgery**
Christoph Hohenberger (Regensburg, Germany)
- 13:56 – 14:05 **Discussion**

12:35 – 14:05 **Vascular**
Room 2

Chair: David Bervini (Bern, Switzerland)
Chair: Daniel Hänggi (Düsseldorf, Germany)

- 12:35 – 12:45 **Decision making in unruptured aneurysms**
Stefan Florian (Cluj-Napoca, Romania)

- 12:45 – 12:55 **Remote cerebellar hemorrhage after microsurgical treatment of unruptured anterior circulation aneurysms: a single centre 10-year experience and unanswered questions**
Andrej Porčnik (Ljubljana, Slovenia)
- 12:55 – 12:56 **Discussion**
- 12:56 – 13:04 **Does early intravenous magnesium sulfate contribute to less cerebral vasospasm and delayed cerebral ischemia in aneurysmal subarachnoid hemorrhage? Results of a retrospective cohort study**
Björn Sommer (Augsburg, Germany)
- 13:04 – 13:12 **Incremental versus immediate induction of hypertension in the treatment of delayed cerebral ischemia after subarachnoid hemorrhage**
Michael Veldeman (Aachen, Germany)
- 13:12 – 13:20 **Leptomeningeal collateral activation indicates severely impaired cerebrovascular reserve capacity in patients with symptomatic unilateral carotid artery occlusion**
Martina Sebök (Zurich, Switzerland)
- 13:20 – 13:28 **Ability of BOLD cerebrovascular reactivity to quantitatively classify vascular territories of symptomatic stroke patients into different hemodynamic failure stages**
Martina Sebök (Zurich, Switzerland)
- 13:28 – 13:36 **Patients receiving EC-IC bypass for atherosclerotic vessel occlusion today differ significantly from the COSS population**
Nils Hecht (Berlin, Germany)
- 13:36 – 14:05 **Discussion**
- 12:35 – 13:35 **Skull Base**
Room 3
-
- Chair: Torstein Meling (Genève, Switzerland)
Chair: Idoia Zazpe Cenoz (Pamplona, Spain)
- 12:35 – 12:45 **Acoustic schwannoma: the perfect approaches**
Domenico D'Avella (Padova, Italy)
- 12:45 – 12:46 **Discussion**
- 12:46 – 12:54 **Extradural opening of the cisterna magna in retrosigmoid craniotomy: A novel technique for efficient and safe posterior fossa relaxation**
Dieter Thijs (Edegem, Belgium)
- 12:54 – 13:02 **Prediction factors of growth in sporadic vestibular schwannomas**
Daniela Stastna (Cambridge, United Kingdom)

13:02 – 13:10 **Anterolateral approach for retrostyloid superior parapharyngeal space schwannomas involving the jugular foramen area: a 20-year experience**
Sabino Luzzi (Pavia, Italy)

13:10 – 13:18 **Microsurgical anatomy of posterolateral approaches to middle and lower clivus**
Sabino Luzzi (Pavia, Italy)

13:18 – 13:35 **Discussion**

12:35 – 14:05 **Neuro-Oncology & Pediatric (Masterclass)**
Room 4

Chair: Martina Messing-Jünger (Sankt Augustin, Germany)

12:35 – 12:50 **Does molecular pathology change our neurosurgical strategies in malignant pediatric brain tumors?**
Sergey Gorelyshev (Moscow, Russian Federation)

12:50 – 13:05 **The spectrum of pediatric low grade glioma**
Eelco Hoving (Utrecht, The Netherlands)

13:05 – 13:20 **Adult MB trial**
Martin McCabe (Manchester, United Kingdom)

13:20 – 13:35 **Adult and paediatric brain tumour treatment: for all the same?**
Maximilian Ruge (Cologne, Germany)

13:35 – 14:05 **Discussion**

14:15 – 15:45 **Spine & Pediatric**
Room 1

Chair: Francesco Sala (Verona, Italy)
Chair: Marianne Juhler (Copenhagen, Denmark)

14:15 – 14:25 **Treatment of Chiari at all ages**
Tomaz Smigoc (Maribor, Slovenia)

14:25 – 14:26 **Discussion**

14:26 – 14:36 **Spinal Ependymoma in Children**
Radek Fric (Oslo, Norway)

14:36 – 14:37 **Discussion**

14:37 – 14:45 **Myelomeningocele – Chiari II malformation – neurological predictability based on fetal and postnatal magnetic resonance imaging**
Farjad Khalaveh (Wien, Austria)

- 14:45 – 14:53 **Comparison of short and long-term outcomes in Chiari malformation I patients undergoing posterior fossa decompression and duraplasty with or without tonsillectomy: A multicenter study**
Lukasz Antkowiak (Katowice, Poland)
- 14:53 – 15:01 **Radiofrequency ablation and vertebral augmentation for the management of spinal bone metastases. A retrospective single-center case series**
Roberta Costanzo (Palermo, Italy)
- 15:01 – 15:09 **Intraoperative blood loss in oncological spine surgery**
Theresa Krätzig (Hamburg, Germany)
- 15:09 – 15:45 **Discussion**
- 14:15 – 15:45 **Clipping of aneurysms**
Room 2
-
- Chair: Jeroen Boogaarts (The Netherlands)
Chair: Philippe Bijlenga (Geneva, Switzerland)
- 14:15 – 14:25 **Predictive outcome factors (Open Micro Surgery) in intracranial aneurysms (IA). An experience of 1092 cases**
Alexandru Vlad Ciurea (Bucharest, Romania)
- 14:25 – 14:26 **Discussion**
- 14:26 – 14:34 **The importance of psychosocial factors in the management of small unruptured intracranial aneurysms**
Rosemary E. Clarke (London, United Kingdom)
- 14:34 – 14:42 **Aneurysm healing following treatment with bioresorbable embolization materials: assessment in a rat sidewall aneurysm model**
Jeannine Kuemin-Rey (Aarau, Switzerland)
- 14:42 – 14:50 **The value of three-dimensional digital subtraction angiography for detection and classification of intracranial aneurysm remnants after clipping**
Basil Erwin Grüter (Aarau, Switzerland)
- 14:50 – 14:58 **Outcomes after aneurysms surgical treatment in the Russian Federation (RAST)**
Taras Shatokhin (Moscow, Russian Federation)
- 14:58 – 15:06 **Parent artery-initiated and stent-mediated neointima formation in a rat saccular side wall model**
Jeannine Kuemin-Rey (Aarau, Switzerland)
- 15:06 – 15:14 **Rescue therapy with local intraarterial administration of nimodipine might positively affect clinical outcome in patients with aneurysmatic subarachnoid hemorrhage and delayed cerebral ischemia**
Johannes Walter (Heidelberg, Germany)
- 15:14 – 15:45 **Discussion**

14:15 – 15:45 Skull Base (Masterclass)
Room 3

Chair: Henry Schroeder (Greifswald, Germany)
Chair: Roy Daniel (Lausanne 1011, Switzerland)

- 14:15 – 14:30 Transbasal resections**
Torstein Meling (Genève, Switzerland)
- 14:30 – 14:45 Endonasal resection of chordomas**
Henry Schroeder (Greifswald, Germany)
- 14:45 – 15:00 Update in surgical management of Cushing's Disease**
Idoya Zazpe Cenoz (Pamplona, Spain)
- 15:00 – 15:15 Craniopharyngiomas: stalk sacrifice or not**
Henry Schroeder (Greifswald, Germany)
- 15:15 – 15:30 Endonasal endoscopic surgery for pituitary tumors: technical remarks and lessons learned**
Patricia Polonia (Porto, Portugal)
- 15:30 – 15:45 Discussion**

14:15 – 15:45 Neuro-Oncology
Room 4

Chair: Nils Ole Schmidt (Germany)

- 14:15 – 14:25 Patient-derived xenografts of brain metastases – a tool for translational medicine**
Cláudia Faria (Lisbon, Portugal)
- 14:25 – 14:26 Discussion**
- 14:26 – 14:36 Brain Shift during Removal of Brain Tumours. Is it predictable?**
Theofilos Palaologos (Athens, Greece)
- 14:36 – 14:37 Discussion**
- 14:37 – 14:45 Data-driven prediction of postoperative clinical outcome using the Neurologic Assessment in Neuro-Oncology (NANO) score in glioblastoma patients – the clinical usefulness of a black-box model**
Julius Maximilian Kernbach (Aachen, Germany)
- 14:45 – 14:53 Patients' perspective on awake craniotomy using the awake-awake-awake protocol**
Tomasz Dziedzic (Warsaw, Poland)

- 14:53 – 15:01 **Tumor treating fields with the TERT-inhibitor eribulin have synergistic antiproliferative effects on human glioblastoma cells**
Hanna Gött (Giessen, Germany)
- 15:01 – 15:09 **Local and global effects of F-18-fluorethyltyrosin (FET) positive brain tumors on language associated B(lood)O(xygen)L(evel)D(ependent) signal**
Katharina Rosengarth (Regensburg, Germany)
- 15:09 – 15:17 **Semi-sitting position is associated with worse outcome and longer hospitalisation than prone or supine position for resection of brain metastases located in the posterior fossa**
Stefan Motov (Augsburg, Germany)
- 15:17 – 15:25 **Immunophenotyping of tumor-infiltrating T cells in primary CNS lymphoma**
Malte Mohme (Hamburg, Germany)
- 15:25 – 15:33 **Application of Tumor Treating Fields (TTFields) to open the blood brain barrier (BBB) as future CNS drug delivery strategy**
Carsten Hagemann (Würzburg, Germany)
- 15:33 – 15:45 **Discussion**
- 15:55 – 17:14 **Spinal Trauma**
Room 1

Chair: Andreas K. Demetriades (Edinburgh, United Kingdom)
Chair: Maria Luisa Gandia Gonzalez (Madrid, Spain)

- 15:55 – 16:05 **Current evidence in the treatment of central cord syndrome**
Florian Ringel (Mainz, Germany)
- 16:05 – 16:06 **Discussion**
- 16:06 – 16:16 **The DISCUS randomised controlled trial for spinal cord injury**
Marios Papadopoulos (London, United Kingdom)
- 16:16 – 16:17 **Discussion**
- 16:17 – 16:25 **Long term PROMs (patient reported outcome measures) in the non-operative management of odontoid peg fractures in the elderly**
Henry Searle (Edinburgh, United Kingdom)
- 16:25 – 16:33 **In vitro biomechanical comparison of facet versus laminar screws for C2 vertebra**
Alexandre Meynard (Bron, France)
- 16:33 – 16:41 **Global Neurotrauma Outcomes Study Spine: an international, multi-centre, prospective cohort study on the injury profile, management and outcomes of traumatic spinal injury**
Saniya Mediratta (Cambridge, United Kingdom)

- 16:41 – 16:49 **When giants talk; robotic dialog during thoracolumbar and sacral surgery**
Saadit Sarah Hourri (Jerusalem, Israel)
- 16:49 – 16:57 **Validation of the Cauda scale (TCS) for the assessment of acute referrals with suspected cauda equina syndrome**
Mohamed Youssef (Newcastle Upon Tyne, United Kingdom)
- 16:57 – 17:05 **Intraoperative fluid management in complex lumbar spine surgery**
Anto Abramovic (Innsbruck, Austria)
- 17:05 – 17:14 **Discussion**

15:55 – 17:25 **Peripheral Nerve Surgery (Masterclass)**
Room 2

Chair: Lukas Rasulic (Belgrade, Serbia)
Chair: Christian Heinen (Quakenbrück, Germany)

- 15:55 – 16:07 **Neurolysis, nerve graft, conduits, re-implantation & repair – Peripheral nerve surgery in 2021 and beyond**
Lukas Rasulic (Belgrade, Serbia)
- 16:07 – 16:19 **Surgical approaches for the resection of the peripheral nerve sheath tumors of the pelvis and sciatic notch**
Christian Heinen (Quakenbrück, Germany)
- 16:19 – 16:31 **Treatment of the post-traumatic foot drop: diagnosis, surgery and rehabilitation**
Stefano Ferraresi (Rovigo, Italy)
- 16:31 – 16:43 **Entrapment syndromes: some controversial points**
Annie Dubuisson (Liège, Belgium)
- 16:43 – 16:55 **Research opportunities in peripheral nerve surgery – Brain plasticity and more after nerve trauma following repair**
Thomas Kretschmer (Klagenfurt, Austria)
- 16:55 – 17:25 **Discussion**

15:55 – 17:25 **Skull Base**
Room 3

Chair: Luigi Cavallo (Naples, Italy)
Chair: Sebastien Froelich (Paris, France)

- 15:55 – 16:05 **Skull base repair options in endoscopic endonasal approach for sellar/suprasellar pathologies**
Artur Xhumari (Tirane, Albania)
- 16:05 – 16:06 **Discussion**

- 16:06 – 16:16 **CSF leakage and new preventive technology**
Tristan van Doormaal (Zurich, Switzerland)
- 16:16 – 16:17 **Discussion**
- 16:17 – 16:25 **Low preoperative prealbumin levels are a strong independent predictor of postoperative cerebrospinal fluid leak following endoscopic endonasal skull base surgery**
Georgios Zenonos (Pittsburgh, United States)
- 16:25 – 16:33 **Evolution and Innovation of reconstructive technique in endoscopic endonasal skull base surgery**
Domenico Solari (Naples, Italy)
- 16:33 – 16:41 **Skull base repair following endonasal pituitary and skull base tumour resection – a systematic review**
Ahmad M.S. Ali (Liverpool, United Kingdom)
- 16:41 – 16:49 **Risk factors for postoperative intracranial infections during endoscopic endonasal skull base surgery and the role of antibiotic prophylaxis**
Paul Gardner (Pittsburgh, United States)
- 16:49 – 16:57 **Facial nerve decompression in traumatic facial nerve paralysis: Systematic review and meta-analysis of outcomes**
Amani Belouaer (Lausanne, Switzerland)
- 16:57 – 17:05 **Endoscopic endonasal carotid injury: case series and review of the modern literature with lessons learned**
Paul Gardner (Pittsburgh, United States)
- 17:05 – 17:13 **An institutional review of clinical outcomes for skull base chordoma: An analysis of 268 cases over 19 years**
Georgios Zenonos (Pittsburgh, United States)
- 17:13 – 17:25 **Discussion**

15:55 – 17:25 **Oncology Research**
Room 4

Chair: Malte Mohme (Hamburg, Germany)

- 15:55 – 16:03 **Expression of TSPO in murine glioblastoma as rationale for new PET-imaging strategies**
Sabrina V. Kirchleitner (Munich, Germany)
- 16:03 – 16:11 **Spatiotemporal diversity of cell communication in glioblastoma aids in transcriptional plasticity**
Kevin Joseph (Freiburg, Germany)
- 16:11 – 16:19 **A novel glioblastoma invasion model using human brain slice cultures**
Vidhya M. Ravi (Freiburg, Germany)

- 16:19 – 16:27 **A deep learning model for preoperative differentiation between glioblastoma, central nervous system lymphoma and brain metastasis**
Leonardo Tariciotti (Milan, Italy)
- 16:27 – 16:35 **Targeted gene-expression analysis during malignant transformation in primary and secondary malignant meningioma**
Andrea Daniela Maier (Copenhagen, Denmark)
- 16:35 – 16:43 **Dexamethasone treatment limits efficacy of radiation, but does not interfere with glioma cell death induced by Tumor Treating Fields**
Daniel Dubinski (Germany)
- 16:43 – 16:51 **Cancer cell permeability is increased after Tumor Treating Fields (TTFields) application**
Bella Koltun (Haifa, Israel)
- 16:51 – 16:59 **Metastatic extracranial meningiomas: a review of the literature**
Konstantinos Marios Liosis (Heraklion, Crete, Greece)
- 16:59 – 17:25 **Discussion**
- 17:25 – 18:00 **The Executive Board and Section Chairs "Picks of the Day",**
Room 1 **LIVE from Studio**
-

Wednesday, October 6

08:00 – 09:00 **Brain & Spine Launch** Room 1

Chair: Carlo Schaller (Genève, Switzerland)
Chair: Wilco Peul (Leiden & The Hague, The Netherlands)

08:00 – 08:10 **The Art of Brain Research**

Carlo Schaller (Genève, Switzerland)

08:10 – 08:20 **The genesis and launch of a shared project**

Everard Munting (Ottignies, Belgium)

08:20 – 08:40 **High Impact Publishing Brain and Spine Research**

Wilco Peul (Leiden & The Hague, The Netherlands)

08:40 – 08:50 **The Art of Brain Research**

Aisling Murphy (United Kingdom)

08:50 – 09:00 **Discussion**

08:00 – 09:40 **Skull Base** Room 3

Chair: Michael Bruneau (Brussels, Belgium)
Chair: Henry Schroeder (Greifswald, Germany)

08:00 – 08:15 **CPA angle meningiomas: a new classification and impact on the outcome after surgery**

Tony Van Havenbergh (Antwerpen, Belgium)

08:15 – 08:20 **Discussion**

08:20 – 08:35 **Update on the Treatment of Skull Base Chordoma**

Paul Gardner (Pittsburgh, United States)

08:35 – 08:40 **Discussion**

08:40 – 08:55 **Endoscopic management of craniopharyngiomas with intraventricular extension**

Luigi Cavallo (Naples, Italy)

08:55 – 09:00 **Discussion**

09:00 – 09:15 **Metaanalysis on Foramen magnum meningiomas**

Torstein Meling (Genève, Switzerland)

09:15 – 09:20 **Discussion**

09:20 – 09:40 **Clinical application of the “sellar barrier's concept” for predicting intraoperative CSF leak in endoscopic endonasal surgery for pituitary adenomas with a machine learning analysis**
Domenico Solari (Naples, Italy)

09:40 – 09:50 **Industry sponsored Session**
Room 1

09:50 – 11:20 **Trauma**
Room 1

Chair: Andras Buki (Pécs, Hungary)
Chair: Parmenion Tsitsopoulos (Thessaloniki, Greece)

09:50 – 10:00 **The diagnostic and prognostic value of biomarkers in traumatic brain injury – A CENTER TBI study**
Andras Buki (Pécs, Hungary)

10:00 – 10:01 **Discussion**

10:01 – 10:11 **Serum lipids and metabolites – a new avenue in the diagnostics of mild traumatic brain injury**
Posti Jussi (Turku, Finland)

10:11 – 10:12 **Discussion**

10:12 – 10:22 **Biomarkers in SCI**
Tsitsopoulos Parmenion (Thessaloniki, Greece)

10:22 – 10:23 **Discussion**

10:23 – 10:31 **RIP1 and RIP3 mediate iron toxicity and affect long-term outcome after traumatic brain injury**
Antonia Wehn (Munich, Germany)

10:31 – 10:39 **Mortality and functional outcome predictors in combat-related penetrating brain injury treatment in a specialty civilian medical institution. Our experience of treatment of 121 wounded people**
Andrii Sirko (Dnipro, Ukraine)

10:39 – 10:47 **What is the incidence of post-traumatic hydrocephalus in traumatic brain injury patients that underwent DC versus those that were managed conservatively: lessons from a meta-analysis**
Georgios Mavrovounis (Larissa, Greece)

10:47 – 10:55 **The levels of neurofilament light at admission and development of axonal pathology in mild traumatic brain injury**
Iftakher Hossain (Turku, Finland)

- 10:55 – 11:03 **Intracranial pressure monitoring in TBI patients: extension of the recommendations and the effect on outcome by propensity-score matching**
Ana M Castaño-Leon (Madrid, Spain)
- 11:03 – 11:11 **A neurokinin-1 receptor antagonist modulates the blood-spinal cord barrier and improves functional recovery after thoracic SCI**
Alexander Younsi (Heidelberg, Germany)
- 11:11 – 11:19 **Lipid peroxidation, antioxidant depletion and acute brain injury in children**
Luca Massimi (Rome, Italy)
- 11:19 – 11:20 **Discussion**

09:50 – 11:20 **PNS- Tumors, Basic and Innovative**
Room 2

Chair: Stefano Ferraresi (Rovigo, Italy)
Chair: Thomas Kretschmer (Klagenfurt, Austria)

- 09:50 – 10:00 **Intraneural hemangiomas**
Debora Garozzo (Dubai, United Arab Emirates)
- 10:00 – 10:01 **Discussion**
- 10:01 – 10:11 **Neuropathy in Nerve Tumors**
Cordula Matthies (Würzburg, Germany)
- 10:11 – 10:12 **Discussion**
- 10:12 – 10:22 **Evidence based medicine in peripheral nerve surgery – nice or need?**
Nora Dengler (Berlin, Germany)
- 10:22 – 10:23 **Discussion**
- 10:23 – 10:33 **Biohybrid neural interfaces: merging neuroprosthetics and stem cell technology**
Damiano Barone (Cambridge, United Kingdom)
- 10:33 – 10:34 **Discussion**
- 10:34 – 10:42 **Mapping of motor neuroplasticity after successful surgical brachial plexus reconstruction using navigated transcranial magnetic stimulation (nTMS) – presentation of preliminary results**
Gregor Durner (Ulm, Germany)
- 10:42 – 10:50 **MRI-based radiomics and deep learning for pre-operative classification of peripheral nerve sheath tumors**
Marga Serafimova (Tel Aviv, Israel)

10:50 – 10:58 **Neuropathy in neurofibromatosis types 1, 2 and 3: a study protocol to address a neglected feature**
Cordula Matthies (Würzburg, Germany)

10:58 – 11:20 **Discussion**

09:50 – 11:20 **Skull Base**
Room 3

Chair: Marcos Tatagiba (Tübingen, Germany)

Chair: Idoia Zazpe Cenoz (Pamplona, Spain)

09:50 – 10:00 **Multidisciplinary approach in skull base surgery**
Andriy Smolanka (Uzhhorod, Ukraine)

10:00 – 10:01 **Discussion**

10:01 – 10:11 **Extended Endoscopic Endonasal Approaches to Skull Base**
Racheli Grossman (Tel-Aviv, Israel)

10:11 – 10:12 **Discussion**

10:12 – 10:22 **Critique of Endonasal endoscopic approaches for anterior skull base meningiomas**
Jacques Morcos (Miami, United States)

10:22 – 10:23 **Discussion**

10:23 – 10:31 **Reported outcomes in transsphenoidal pituitary adenoma surgery: A systematic review**
Ryan Loh (Cambridge, United Kingdom)

10:31 – 10:39 **Changing paradigm in surgical resection of Clivus chordomas – from midfacial degloving to endoscopic approaches**
Klaus Zweckberger (Heidelberg, Germany)

10:39 – 10:47 **Indocyanine green endoscopy for pituitary adenomas invading the cavernous sinus: results from a preliminary case series**
Francesco Corrivetti (Benevento, Italy)

10:47 – 10:55 **Automated operative workflow analysis of endoscopic pituitary surgery using machine learning: development and preclinical evaluation (IDEAL stage 0)**
Danyal Zaman Khan (London, United Kingdom)

10:55 – 11:03 **Technical aspects, outcomes and complications in surgery for pituitary adenomas – endoscopic versus microscopic approaches**
Julius Höhne (Regensburg, Germany)

11:03 – 11:11 **What do we know about pineal apoplexy? A case series and review of the literature**
Martin Majovsky (Praha, Czech Republic)

11:11 – 11:19 **Endoscopic transcortical-transventricular approach in treating third ventricular craniopharyngiomas: technical note and literature review**
Loay Shoubash (Greifswald, Germany)

11:19 – 11:20 **Discussion**

09:50 – 11:20 **CSF & Pediatric (Masterclass)**
Room 4

Chair: Mansoor Foroughi (Brighton, United Kingdom)
Chair: Marianne Juhler (Copenhagen, Denmark)

09:50 – 10:05 **Hydrocephalus in infants**
Ulrich-Wilhelm Thomale (Berlin, Germany)

10:05 – 10:20 **Hydrocephalus in children**
Martin Schuhmann (Tuebingen, Germany)

10:20 – 10:35 **Hydrocephalus in transition from child to adult**
Sergey Gorelyshev (Moscow, Russian Federation)

10:35 – 10:50 **Hydrocephalus in adults**
Laurence Watkins (London, United Kingdom)

10:50 – 11:05 **Hydrocephalus in old age**
Uwe Kehler (Hamburg, Germany)

11:05 – 11:20 **Discussion**

09:50 – 11:20 **Epilepsy surgery / Pain**
Room 5

Chair: Tipu Aziz (Oxford, United Kingdom)
Chair: Tom Theys (Leuven, Belgium)

09:50 – 10:00 **Mesial temporal lobe epilepsy surgery: seizure outcome after 10 years follow-up (TBC)**
Tomislav Sajko (Croatia)

10:00 – 10:01 **Discussion**

10:01 – 10:11 **Preoperative predictability of neurovascular conflicts in trigeminal neuralgia**
Andrei Brinzeu (Timisoara, Romania)

10:11 – 10:12 **Discussion**

10:12 – 10:20 **Anterior nucleus of the thalamus deep brain stimulation with concomitant vagus nerve stimulation for drug resistant epilepsy**
Veronica Parisi (Pozzilli, Italy)

- 10:20 – 10:28 **The effect of common neurosurgical medications on cortical excitability measured with transcranial magnetic stimulation (TMS)**
Felipe Monte Santo (Berlin, Germany)
- 10:28 – 10:36 **Epidemiology of post-craniotomy headache (EPoCH): A multicenter retrospective study**
Yasushi Shibata (Mito, Japan)
- 10:36 – 10:44 **Long-term seizure outcome after resective temporal lobe surgery in a pediatric cohort: a single-center retrospective study**
Matthias Tomschik (Vienna, Austria)
- 10:44 – 10:52 **Delirium in neurosurgery: a large retrospective cohort study**
P.R. Kappen (Rotterdam, The Netherlands)
- 10:52 – 11:20 **Discussion**

11:20 – 11:30 **Industry sponsored Session**
Room 1

11:30 – 13:00 **Trauma**
Room 1

- Chair: Bart Depreitere (Leuven, Belgium)
Chair: Teemu Luoto (Tampere, Finland)
- 11:30 – 11:40 **Chronic traumatic encephalopathy for the neurosurgeon**
Teemu Luoto (Tampere, Finland)
- 11:40 – 11:41 **Discussion**
- 11:41 – 11:51 **Doubts & Clinical Equipoise in Randomizing Elderly with TBI**
Wilco Peul (Leiden & The Hague, The Netherlands)
- 11:51 – 11:52 **Discussion**
- 11:52 – 12:02 **Cranioplasty updates- when, what, in whom?**
Alexander Younsi (Heidelberg, Germany)
- 12:02 – 12:03 **Discussion**
- 12:03 – 12:11 **Four-quadrant decompressive craniotomy (FoQ) for surgical management of traumatic brain injury in adults**
Siddharth Vankipuram (Lucknow, India)
- 12:11 – 12:19 **The management of depressed skull fractures in adults: An international survey**
Amir Suliman (Newcastle, United Kingdom)

- 12:19 – 12:27 **Factors associated with morbidity and mortality outcomes following first cranioplasty**
Mohammad A Mustafa (Liverpool, United Kingdom)
- 12:27 – 12:35 **Long-term follow-up of cranioplasty in adult patients: A multicenter European study. Can we trust self-reported complications?**
Ismail Zaed (Rozzano, Italy)
- 12:35 – 12:43 **Floating decompressive craniotomy as an alternative to decompressive craniectomy**
Jan Mracek (Pilsen, Czech Republic)
- 12:43 – 12:51 **Predictive factors for cranioplasty complications – a decade experience**
Ana Ferreira (Oporto, Portugal)
- 12:51 – 13:00 **Discussion**

11:30 – 13:00 **Skull Base**
Room 3

Chair: Torstein Meling (Genève, Switzerland)

- 11:30 – 11:38 **Histological transformation in recurrent WHO grade 1 meningiomas**
Marco Corniola (Geneva, Switzerland)
- 11:38 – 11:46 **Meningiomas of the posterior petrous bone: surgical anatomy and postoperative results of 130 consecutive patients**
Carmine Antonio Donofrio (Cremona, Italy)
- 11:46 – 11:54 **Design and validation of a new tool to investigate the quality of life of patients harboring meningioma and guide their personalized care: the M-QoL**
Vincent Lubrano (Saint Jean, France)
- 11:54 – 12:02 **How common are sick-leave and prescription of antidepressant and sedative drugs after VS surgery? Results from a Swedish registry-based matched cohort study**
Erik Thurin (Gothenburg, Sweden)
- 12:02 – 12:10 **Predictors of postoperative remission and relapse of hemifacial spasm following Microvascular decompression**
Ahmed AL Menabbawy (Greifswald, Germany)
- 12:10 – 12:18 **Neurofibromatosis Type 2 – phenotypic classification by the Würzburg Severity Score**
Maria Breun (Würzburg, Germany)
- 12:18 – 12:26 **The “Sagittal Crest”: definition, stepwise dissection and clinical implications from a transorbital perspective**
Francesco Corrivetti (Benevento, Italy)

12:26 – 12:34	A personalized management paradigm for skull base chordoma based on surgical outcome and a genetic panel consisting of 1p36 and 9p21(p16) deletions Georgios Zenonos (Pittsburgh, United States)
12:34 – 13:00	Discussion
11:30 – 13:00 Room 4	CSF
	Chair: Mansoor Foroughi (Brighton, United Kingdom) Chair: Giorgio Palandri (Bologna, Italy)
11:30 – 11:40	Diagnosis & investigations in Chiari 1 malformation in adults Marcus Stoodley (North Ryde, Australia)
11:40 – 11:41	Discussion
11:41 – 11:51	Syringomyelia: management and controversies Andrew Brodbelt (Liverpool, United Kingdom)
11:51 – 11:52	Discussion
11:52 – 12:02	CSF diversion for Idiopathic Intracranial Hypertension Ahmed Toma (London, United Kingdom)
12:02 – 12:03	Discussion
12:03 – 12:11	Cerebrospinal fluid diversions in the biliary tract – systematic review of current literature Cezar Octavian Morosanu (Liverpool, United Kingdom)
12:11 – 12:19	Myelomeningocele related Hydrocephalus: early vs late treatment Taimoor Ali (Peshawar, Pakistan)
12:19 – 12:27	Risk factors promoting external ventricular drain infections at the intensive care unit Farjad Khalaveh (Wien, Austria)
12:27 – 12:35	Time is money – a quality improvement project on improved surgical times using pre-made Bolt EVD packs Ashish Jhala (London, United Kingdom)
12:35 – 12:43	Cerebrospinal fluid production rate in various pathological conditions: A preliminary study Kanza Tariq (London, United Kingdom)
12:43 – 12:51	The buoyant brain Mohamed Abdalla (London, United Kingdom)

12:51 – 12:59 **Valve pressure adjustment of cerebrospinalfluid shunt – longitudinal analysis of 891 patients**
Victoria Schön (Innsbruck, Austria)

12:59 – 13:07 **The Sensor Reservoir – does it change management?**
Anna Bjornson (Sheffield, United Kingdom)

13:07 – 13:15 **Complication rates of two common programmable differential pressure hydrocephalus shunt devices – a single center experience**
Obada T Alhalabi (Heidelberg, Germany)

11:30 – 13:00 **Epilepsy; minimal invasive therapy (Masterclass)**
Room 5

Chair: Dirk van Roost (Ghent, Belgium)
Chair: Daniël Delev (Aachen, Germany)

11:30 – 11:45 **Functional neuroimaging of the amygdala: What have we learned?**
Christian Büchel (Hamburg, Germany)

11:45 – 12:00 **S-EEG RFTC in candidates for epilepsy surgery & periventricular heterotopia**
Olaf Schijns (Maastricht, The Netherlands)

12:00 – 12:15 **Laser Interstitial thermal therapy in the management of medically intractable epilepsy**
Kostas Fountas (Larisa, Greece)

12:15 – 12:30 **Laser Interstitial thermal therapy in patients with epilepsy & tuberous sclerosis**
Karl Rössler (Wien, Austria)

12:30 – 13:00 **Discussion**

13:05 – 13:20 **Industry sponsored Session**
Room 2

Chair: Olaf Haase (Germany)

13:30 – 14:45 **Trauma (Masterclass)**
Room 1

Chair: Peter Hutchinson (Cambridge, United Kingdom)
Chair: Elham Rostami (Uppsala, Sweden)

13:30 – 13:45 **Monitoring from the injury site after spinal cord injury**
Marios Papadopoulos (London, United Kingdom)

13:45 – 14:00 **Should PbtO₂ and microdialysis be implemented routine management for severe TBI?**
Péter József Tóth (Pecs, Hungary)

14:00 – 14:15 **Assessment of Autoregulation and CBF**
Bart Depreitere (Leuven, Belgium)

14:15 – 14:45 **Discussion**

13:30 – 15:00 **PNS – Trauma 1 & 2**
Room 2

Chair: Annie Dubuisson (Liège, Belgium)
Chair: Nora Dengler (Berlin, Germany)
Chair: Debora Garozzo (Dubai, United Arab Emirates)

13:30 – 13:40 **Value of Long term clinical follow-up in unveiling entrapped or halted regeneration in distal anatomical tunnels after peripheral nerve repair**
Ridvan Alimehmeti (Tirana, Albania)

13:40 – 13:41 **Discussion**

13:41 – 13:51 **Iatrogenic injury of the peripheral nerve**
Amitendu Sekhar (Udaipur, India)

13:51 – 13:52 **Discussion**

13:52 – 14:02 **Late surgery for birth brachial plexus palsy**
Ridvan Alimehmeti (Tirana, Albania)

14:02 – 14:03 **Discussion**

14:03 – 14:13 **High resolution neurosonography in traumatic nerve lesions!**
Christian Heinen (Quakenbrück, Germany)

14:13 – 14:14 **Discussion**

14:14 – 14:24 **Intraneural ganglia**
Ivan Humhej (Ústí nad Labem, Czech Republic)

14:24 – 14:25 **Discussion**

14:25 – 14:33 **The musculocutaneous nerve as a recipient of nerve repair in restoration of biceps function – a retrospective review of 146 brachial plexus operations**
Gregor Durner (Ulm, Germany)

14:33 – 14:41 **Prevalence and inpatient treatment of obstetric brachial plexus injury in Germany between 2005 and 2018**
Tarik Alp Sargut (Berlin, Germany)

14:41 – 14:49 **End-to-end hypoglossal-facial nerve anastomosis – surgical video**
Ana Ferreira (Oporto, Portugal)

14:49 – 15:00 **Discussion**

3:30 – 15:00 Skull Base & Radiosurgery (Masterclass)
Room 3

Chair: Dimitris Paraskevopoulos (London, United Kingdom)

- 13:30 – 13:45 Spheno-orbital meningiomas**
Michael Bruneau (Brussels, Belgium)
- 13:45 – 14:00 Anterior clinoid meningiomas**
Oliver Bozinov (St.Gallen, Switzerland)
- 14:00 – 14:15 Combined endonasal and open surgical approach to petroclival meningiomas**
Samy Youssef (Aurora, United States)
- 14:15 – 14:30 Preserving normal facial nerve function and improving hearing outcome in large vestibular schwannomas with a combined approach: planned subtotal resection followed by gamma knife radiosurgery**
Roy Daniel (Lausanne, Switzerland)
- 14:30 – 15:00 Stereotactic Radiosurgery for intracanalicular Acoustic Neuroma**
Constantin Tuleasca (Lausanne, Switzerland)

13:30 – 15:00 Endoscopy and CSF
Room 4

Chair: Laurence Watkins (London, United Kingdom)

- 13:30 – 13:40 Beyond the Pillars of Hercules: the navigation of the cerebral aqueduct**
Alberto Feletti (Verona, Italy)
- 13:40 – 13:48 Endoscopic third ventriculostomy compared to Ventriculoperitoneal shunt as a first line treatment for long standing overt ventriculomegaly in adults (LOVA): which treatment should be offered?**
Conor S. Gillespie (Liverpool, United Kingdom)
- 13:48 – 13:56 Endoscopic and endoscopically-assisted resection of intra- and extraventricular lesions using a neuroendoscopic ultrasonic aspirator**
Florian Ebel (Basel, Switzerland)
- 13:56 – 14:04 Telemetric intracranial pressure monitoring after neuroendoscopic treatment of hydrocephalus: a valuable tool to recognise treatment failure**
Mehdi Khan (London, United Kingdom)
- 14:04 – 14:12 Happy-ICP: single-centre cohort of 184 telemetric intracranial pressure monitors**
Ptolemy Banks (London, United Kingdom)
- 14:12 – 14:20 Comparative retrospective analysis of patients with normal pressure hydrocephalus and aquaductal web-associated aquaductal stenosis**
Pinar Eser Ocak (Bursa, Turkey)

- 14:20 – 14:28 **Bariatric surgery versus community weight management intervention for the treatment of idiopathic intracranial hypertension (IIH:WT): A randomized controlled trial**
Susan Mollan (Birmingham, United Kingdom)
- 14:28 – 14:36 **Negative impact of COVID-19 lockdown on papilloedema and idiopathic intracranial hypertension**
Susan Mollan (Birmingham, United Kingdom)
- 14:36 – 14:44 **Minimally invasive surgery for spinal CSF-leaks in spontaneous intracranial hypotension**
Jürgen Beck (Freiburg, Germany)
- 14:44 – 14:52 **Role of DESH, Callosal angle and Cingulate sulcus sign in prediction of gait responsiveness after shunting in iNPH patients**
Petr Skalický (Prague, Czech Republic)
- 14:52 – 15:00 **Cranioplasty following ventriculoperitoneal shunting: lessons learned**
Dorian Hirschmann (Vienna, Austria)

13:35 – 15:05 **Epilepsysurgery**
Room 5

Chair: Olaf Schijns (Maastricht, The Netherlands)
Chair: Tom Theys (Leuven, Belgium)

- 13:35 – 13:36 **Discussion**
- 13:36 – 13:46 **EEG Source Imaging in Refractory Epilepsy**
Dirk van Roost (Ghent, Belgium)
- 13:46 – 13:47 **Discussion**
- 13:47 – 13:57 **Long-term epilepsy associated tumors (LEATs) – epileptological and oncological aspects**
Daniël Delev (Aachen, Germany)
- 13:57 – 13:58 **Discussion**
- 13:58 – 14:08 **Second surgery after vertical paramedian hemispherotomy for epilepsy recurrence**
Christian Raftopoulos (Belgium)
Cédric Baltus (Belgium)
- 14:08 – 14:09 **Discussion**
- 14:09 – 14:17 **Adopting MR-guided stereotactic laser ablations for epileptic lesions: Initial clinical experience and lessons learned**
Ido Strauss (Tel Aviv, Israel)

14:17 – 14:25 **Disconnective surgery in posterior quadrant epilepsy: experience in a consecutive series of 12 patients**
Hiria Limpo Alonso (Madrid, Spain)

14:25 – 14:33 **Spike pattern detection and evaluation in epileptogenic human brain tissue – on the hunt for micro-circuit network anomalies**
Jonas Ort (Aachen, Germany)

14:33 – 14:41 **Intraoperative assessment of the cerebrovascular glycocalyx and microcirculation in temporal lobe epilepsy**
Rick H G J van Lanen (Maastricht, The Netherlands)

14:41 – 15:05 **Discussion**

15:00 – 15:10 **Industry sponsored Session**
Room 1

15:10 – 16:40 **Trauma**
Room 1

Chair: Antonio Belli (Birmingham, United Kingdom)

15:10 – 15:20 **Current role for non-invasive diagnostics (MRI, ICP) in mTBI**
Iftakher Hossain (Turku, Finland)

15:20 – 15:21 **Discussion**

15:21 – 15:31 **Current research in neurotrauma**
Niklas Marklund (Lund, Sweden)

15:31 – 15:32 **Discussion**

15:32 – 15:40 **Burr hole craniostomy versus minicraniotomy in chronic subdural hematoma:
A comparative cohort study**
Shaian Zolfaghari (Lund, Sweden)

15:40 – 15:48 **Intracranial lesion patterns on brain computed tomography and their association with full recovery in adolescents and young people with mild traumatic brain injury**
Alexander Younsi (Heidelberg, Germany)

15:48 – 15:56 **The German National TBI-Registry: conception, implementation and first results**
Alexander Younsi (Heidelberg, Germany)

15:56 – 16:04 **Impact of early intervention on the cognitive outcome of chronic subdural haematoma**
Kanza Tariq (London, United Kingdom)

16:04 – 16:12 **Supervised valsalva maneuver after Burr hole evacuation of chronic subdural hematoma: A prospective cohort study**
Sae-Yeon Won (Rostock, Germany)

16:12 – 16:20 **Clinical prediction models performance in pediatric brain trauma**
Georgios Kougentakis (Samos, Greece)

16:20 – 16:40 **Discussion**

15:10 – 16:40 **Skull Base & Radiosurgery**
Room 3

Chair: Jan Cornelius (Düsseldorf, Germany)

Chair: Michael Bruneau (Brussels, Belgium)

15:10 – 15:20 **Vestibular schwannomas: the surgeon perspective**
Marcos Tatagiba (Tübingen, Germany)

15:20 – 15:21 **Discussion**

15:21 – 15:31 **Petroclival meningiomas: the surgeon perspective**
Pierre-Hugues Roche (France)

15:31 – 15:32 **Discussion**

15:32 – 15:42 **Cavernous sinus meningiomas: the surgeon perspective**
Sebastien Froelich (Paris, France)

15:42 – 15:43 **Discussion**

15:43 – 15:53 **Skull base surgery after stereotactic radiosurgery failure**
Dimitris Paraskevopoulos (London, United Kingdom)

15:53 – 15:54 **Discussion**

15:54 – 16:04 **A Retrospective Cohort Study of Longitudinal Audiologic Assessment in Single and Fractionated Stereotactic Radiosurgery for Vestibular Schwannoma**
Constantin Tuleasca (Lausanne, Switzerland)

16:04 – 16:05 **Discussion**

16:05 – 16:15 **Normofractionated stereotactic radiotherapy versus CyberKnife-based hypofractionation in skull base meningioma: a German and Italian pooled cohort analysis**
Alfredo Conti (Bologna, Italy)

16:15 – 16:40 **Discussion**

15:10 – 16:40 New Tech, Research and Outcomes
Room 4

Chair: Aki Laakso (Oulu, Finland)
Chair: Naureen Keric (Mainz, Germany)

- 15:10 – 15:18 Artificial intelligence-enhanced intraoperative neurosurgical workflow: State of the art and future perspectives**
Leonardo Tariciotti (Milan, Italy)
- 15:18 – 15:26 The combination of virtual surgical planning and the use of a mixed reality viewer and patient-specific 3D-models for patient consultation in complex craniofacial cases**
Malte Ottenhausen (Mainz, Germany)
- 15:26 – 15:34 Virtual reality to reduce pain intensity and anxiety during intrathecal pump refills in children with cerebral palsy**
Maarten Moens (Brussels, Belgium)
- 15:34 – 15:42 Evaluation of the effect of standard neuronavigation and augmented reality on the integrity of the perifocal structures during a neurosurgical approach: the safety task**
Julien Haemmerli (Geneva, Switzerland)
- 15:42 – 15:50 Evaluation of 3D robotic-guided exoscopic visualization in microneurosurgery**
Elena Kurz (Mainz, Germany)
- 15:50 – 15:58 Redefining penumbra imaging to save brain tissue after ischemic stroke: A novel tissue viability mapping using fMRI BOLD with CO₂ vasoreactivity**
Martina Sebök (Zurich, Switzerland)
- 15:58 – 16:06 Evaluating the fluorescent tracer 800CW-TATE for molecular fluorescence guided surgery in meningiomas**
Bianca Marguerithe Dijkstra (Groningen, The Netherlands)
- 16:06 – 16:14 Cerebrospinal fluid leakage costs after craniotomy and health economic effect of incidence reduction**
Emma M.H. Slot (Utrecht, The Netherlands)
- 16:14 – 16:22 Neuro-POMS: validation of a dedicated tool for the assessment of early postoperative morbidity in neurosurgery**
Eleanor Moncur (London, United Kingdom)
- 16:22 – 16:30 The value of Charlson comorbidity index for prediction of functional outcome deterioration after meningioma resection**
Darius Kalasauskas (Mainz, Germany)
- 16:30 – 16:38 Inadequate quality of statistical reporting in neurosurgery**
Duranka Perera (London, United Kingdom)

16:38 – 16:46 **The incidence and nature of adverse events and their association with human error in neurosurgery: a prospective observational study**
Hanno Sebastian Meyer (Munich, Germany)

16:46 – 16:48 **Discussion**

15:10 – 16:10 **Functional & Radiosurgery**
Room 5

Chair: Bodo Lippitz (Hamburg, Germany)
Chair: Karl Rössler (Wien, Austria)

15:10 – 15:20 **Treatment of Hamartoma and MTLE**
Jean Regis (France)

15:20 – 15:21 **Discussion**

15:21 – 15:31 **Why epilepsy surgery should be performed in specialized neurosurgical centres?**
Vincenzo Esposito (Pozzilli, Italy)

15:31 – 16:00 **Discussion**

16:40 – 17:10 **The Executive Board and Section Chairs "Picks of the Day",**
Room 1 **LIVE from Studio**

17:10 – 17:55 **Industry sponsored Session**
Room 1

17:10 – 18:10 **Industry sponsored Session**
Room 2

17:10 – 18:10 **Industry sponsored Session**
Room 3

17:10 – 18:10 **Industry sponsored Session**
Room 4

Thursday, October 7

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08:00 – 09:40 **Trauma** Room 1

Chair: Niklas Marklund (Lund, Sweden)
Chair: Wilco Peul (Leiden & The Hague, The Netherlands)

08:00 – 08:08 **Neurotrauma care in Russia – A Tribute to Prof Potapov**
Andrew Maas (Edegem, Belgium)
Yaroslav Latyshev (Russian Federation)

08:08 – 08:23 **Lessons and results of recent TBI trials**
Andreas Unterberg (Heidelberg, Germany)

08:23 – 08:26 **Discussion**

08:26 – 08:41 **TBI in low and middle income countries**
Peter Hutchinson (Cambridge, United Kingdom)

08:41 – 08:44 **Discussion**

08:44 – 08:59 **Chronic subdural hematomas – novel treatments for a common neurosurgical disease**
Nicole Terpolilli (Germany)

08:59 – 09:02 **Discussion**

09:02 – 09:17 **Multimodal Neurocrit Care – what to use and in which patients?**
Elham Rostami (Uppsala, Sweden)

09:17 – 09:20 **Discussion**

09:20 – 09:40 **Dexamethasone versus burr-hole craniostomy for chronic subdural hematoma; the DECSA trial**
Dana C. Holl (Rotterdam, The Netherlands)

08:00 – 09:40 **Education & Training** Room 3

Chair: Andreas K. Demetriades (Edinburgh, United Kingdom)
Chair: Torstein Meling (Genève, Switzerland)

08:00 – 08:15 **Neurosurgical training: curriculum and assessment strategy**
Peter Whitfield (United Kingdom)

08:15 – 08:30 **Postgraduate CME/CPD: sense and nonsense**
Johannes Van Loon (Leuven, Belgium)

08:30 – 08:45	UEMS -EANS formal curriculum ETR Wilco Peul (Leiden & The Hague, The Netherlands)
08:45 – 09:00	“Boomers” AND “Dreamers”: A generation contract for training Carlo Schaller (Genève, Switzerland)
09:00 – 09:15	The future of neurosurgical training: Deliberate practice and virtual reality? Vakis Papanastassiou (Nicosia, Cyprus)
09:15 – 09:40	Discussion
09:50 – 11:20 Room 1	Trauma
	Chair: Laura Lippa (Livorno, Italy) Chair: Alfonso Lagares (Madrid, Spain)
09:50 – 10:00	Tranexamic acid and coagulation in TBI Antonio Belli (Birmingham, United Kingdom)
10:00 – 10:01	Discussion
10:01 – 10:11	Is there an upper age limit in the treatment of severe TBI? Ana M Castaño-Leon (Madrid, Spain)
10:11 – 10:12	Discussion
10:12 – 10:22	Indications and concerns of decompressive craniectomy in TBI Laura Lippa (Livorno, Italy)
10:22 – 10:30	The changing face of the neurosurgical referral Zoe James (Cardiff, United Kingdom)
10:30 – 10:38	Spinal cord tissue oxygen guided treatment for patients with acute, severe traumatic spinal cord injuries Ravindran Visagan (London, United Kingdom)
10:38 – 10:46	Craniotomies following acute traumatic brain injury in Finland – A national study between 1997 and 2018 Nea Nevalainen (Tampere, Finland)
10:46 – 10:54	Impact of an early mobilization protocol on the reduction of medical complications after surgery for chronic subdural hematoma – GET-UP Trial interim analysis Vasco Pinto (Porto, Portugal)
10:54 – 11:02	Mortality of surgically treated neurotrauma in elderly patients and the development of a prediction score Ladina Greuter (Basel, Switzerland)

- 11:02 – 11:10 **Head trauma in low and middle income country: organization of neurotrauma care and role of regional centers**
Irgen Hodaj (Tirana, Albania)
- 11:10 – 11:18 **A matter of frailty, not age – subdural hematoma in the elderly**
Silvia Hernandez Duran (Göttingen, Germany)
- 11:18 – 11:26 **Impact of intracranial pressure monitoring on outcome of traumatic brain injury pediatric patients: A 15-year single centre experience and literature review**
Christos Tsitsipanis (Heraklion, Greece)

09:50 – 11:05 **Research (Masterclass)**
Room 2

Chair: Aki Laakso (Oulu, Finland)
Chair: Peter Hutchinson (Cambridge, United Kingdom)

- 09:50 – 10:05 **A survivor's guide to designing and managing an international randomized, controlled trial – how I did it?**
Peter Hutchinson (Cambridge, United Kingdom)
- 10:05 – 10:20 **From bench to bedside: Translational neurosurgical research**
Einar O. Vik-Mo (Oslo, Norway)
- 10:20 – 10:35 **Back to the future: Artificial Intelligence in neurosurgical research**
Gleb Danilov (Moscow, Russian Federation)
- 10:35 – 11:05 **Discussion**

09:50 – 10:50 **Young Neurosurgeons**
Room 3

Chair: Jiri Bartek (Stockholm, Sweden)

- 09:50 – 10:00 **Advantages of anterior and lateral approaches to the lumbar spine**
Maria Luisa Gandia Gonzalez (Madrid, Spain)
- 10:00 – 10:01 **Discussion**
- 10:01 – 10:11 **Minimally invasive spine surgery – the use of endoscopy and tubes**
Martin Stienen (St.Gallen, Switzerland)
- 10:11 – 10:12 **Discussion**
- 10:12 – 10:22 **Taylored invasiveness in spine surgery**
Sandro Krieg (Munich, Germany)
- 10:22 – 10:50 **Discussion**

09:50 – 11:20 **DBS in translation (Masterclass)**
Room 5

Chair: Yasin Temel (The Netherlands)
Chair: Volker Coenen (Freiburg, Germany)

09:50 – 10:05 **DBS in Alzheimer's disease: current status**
Veerle Visser-Vandewalle (Cologne, Germany)

10:05 – 10:20 **DBS for pain (TBC)**
Marie Krüger (Switzerland)

10:20 – 10:35 **DBS for Depression**
Volker Coenen (Freiburg, Germany)

10:35 – 11:20 **Discussion**

11:30 – 13:00 **Trauma & Pediatric (Masterclass)**
Room 1

Chair: Aurelia Peraud (Ulm, Germany)
Chair: Hans Delye (Belgium)

11:30 – 11:45 **Decompressive craniectomy in children**
Ulrich-Wilhelm Thomale (Berlin, Germany)

11:45 – 12:00 **Spine trauma/SCIWORA in children**
Mathieu Vinchon (France)
Federico diRocco (France)
Aurelia Peraud (Ulm, Germany)

12:00 – 12:15 **Management of Spinal Cord Injuries in adults**
Parmenion Tsitsopoulos (Thessaloniki, Greece)

12:15 – 12:30 **DC in adults for severe TBI**
Alfonso Lagares (Madrid, Spain)

12:30 – 13:00 **Discussion**

11:30 – 12:30 **New Technology & Research Spine**
Room 2

Chair: Radoslaw Rola (Lublin, Poland)
Chair: Angelos Kolias (United Kingdom)

11:30 – 11:38 **Cinnamaldehyde has ameliorative effects on rabbit spinal cord ischemia and reperfusion injury**
Pinar Kuru Bektaşoğlu (Istanbul, Turkey)

- 11:38 – 11:46 **Design of a wearable upper body rehabilitation modality based on kinematics & electromyography data, electrical muscle stimulation and serious game**
Alkinoos Athanasiou (Thessaloniki, Greece)
- 11:46 – 11:54 **Predicting adjacent segment disease with deep learning on pre-operative cervical MRI for patients undergoing surgery for cervical radiculopathy**
Caroline M.W. Goedmakers (Boston, United States)
- 11:54 – 12:30 **Discussion**

11:30 – 13:00 **Young Neurosurgeons**
Room 3

Chair: Laura Lippa (Livorno, Italy)
Chair: Christian Freyschlag (Innsbruck, Austria)

- 11:30 – 11:40 **IONM in intradural pathologies: evidence, false beliefs and personal experience**
Francesco Sala (Verona, Italy)
- 11:40 – 11:41 **Discussion**
- 11:41 – 11:51 **IONM in aneurysm clipping: indications, opportunities, limitations**
Kathleen Seidel (Bern, Switzerland)
- 11:51 – 11:52 **Discussion**
- 11:52 – 12:00 **The impact of the coronavirus pandemic on European neurosurgery trainees**
Christos Tzerefos (Larisa, Greece)
- 12:00 – 12:08 **Burnout among neurosurgeons and residents in neurosurgery: A worrying phenomenon**
Ismail Zaed (Rozzano, Italy)
- 12:08 – 12:16 **Advanced rehearsal for steeper the learning curve in skull base tumour (the 'stars-ct-made' study)**
Giovanni Carone (Milano, Italy)
- 12:16 – 13:00 **Discussion**

11:30 – 13:00 **DBS**
Room 5

Chair: Marie Krüger (Switzerland)
Chair: Josue Avecillas (Los Angeles, United States)

11:30 – 11:40 **Neuroanatomy-Guided DBS: Personalizing DBS using White Matter Tractography and Structural MRI**
Josue Avecillas (Los Angeles, United States)

11:40 – 11:41 **Discussion**

11:41 – 11:51 **Wireless and non-invasive deep brain stimulation: magnetic nanoparticles**
Yasin Temel (The Netherlands)

11:51 – 11:52 **Discussion**

11:52 – 12:00 **Structural changes in brains of patients with disorders of consciousness treated with deep brain stimulation**
Marina Raguž (Zagreb, Croatia)

12:00 – 12:08 **Selective modulation of human wakefulness – surgical targeting of brainstem arousal pathways**
Alceste Deli (Oxford, United Kingdom)

12:08 – 12:16 **White spot sign as predictor of clinical outcome after tcMRgFUS thalamotomy guided by 1.5T MRI for essential tremor**
Giuseppe Roberto Giammalva (Palermo, Italy)

12:16 – 12:24 **Intraoperative drowsiness may hamper the reliability of clinical testing in deep brain stimulation for Parkinson's disease: investigation on influencing factors**
Juergen Schlaier (Regensburg, Germany)

12:24 – 12:32 **Multicenter validation of preoperative motor outcome prediction for deep brain stimulation in Parkinson's disease**
Jeroen Habets (Maastricht, The Netherlands)

12:32 – 13:00 **Discussion**

13:00 – 13:30 **Closing Ceremony**
Room 1

13:00 – 13:10 **CLOSING REMARKS BY THE PAST PRESIDENTS**

13:10 – 13:17 **Join us in Belgrade, October 16 – 20, 2022**

13:17 – 13:25 **Closing Remarks – Adjourn the Meeting**





Oral ePoster Presentations

Oral ePoster Presentations

Vascular Neurosurgery

Clip/Coil

- EP01082** Surgical treatment for space-occupying cerebellar infarction: A clinical and computerized volumetric analysis
Speaker: Eric Goulin Lippi Fernandes (Bielefeld, Germany)
- EP01089** Longitudinal reproducibility of CO₂-triggered BOLD MRI for the hemodynamic evaluation of patients with Moyamoya Angiopathy
Speaker: Constantin Roder (Tuebingen, Germany)
- EP01097** 50 years of flow augmentation bypass surgery: history, current state-of-the-art and outlook
Speaker: Philippe Dodier (Vienna, Austria)
- EP01079** The role of decompressive hemicraniectomies in the treatment of ischemic stroke
Speaker: Ararat Minasyan (Chemnitz, Germany)
- EP01098** Decompressive craniectomy in malignant stroke after haemorrhagic transformation – much ado about nothing?
Speaker: Silvia Hernandez Duran (Göttingen, Germany)

Vascular Aneurysms

- EP01003** Value of inflammation markers in predicting cerebral vasospasm and outcome after aneurysmatic subarachnoid hemorrhage
Speaker: Yannick Fuchs (Munich, Germany)
- EP01038** Complications of microsurgical treatment for ruptured intracerebral aneurysms: a prospective nationwide cohort study on subarachnoid hemorrhage in Sweden
Speaker: Bryndís Baldvinsdóttir (Lund, Sweden)
- EP01008** Surgical treatment of unruptured middle cerebral artery bifurcation aneurysms: long-term retrospective single center study
Speaker: Matthias Gmeiner (Linz, Austria)
- EP01010** Clinical and radiological outcomes of wrapped aneurysms of the in the long term follow up. A retrospective single center analysis
Speaker: Christoph Hohenberger (Regensburg, Germany)
- EP01013** Pial vasospasms and leukocyte plugging contribute to microcirculation deficits in the early phase after SAH
Speaker: Julian Schwarting (Munich, Germany)

- EP01018 Mini pterional craniotomy for the treatment of multiple unruptured intracranial aneurysms. A single institution experience of 23 cases treated over a period of 2 years**
Speaker: Antonia Malli (Athens, Greece)
- EP01020 Combined microsurgical and endovascular intracranial aneurysm treatment: literature review and interdisciplinary experience with a true hybrid approach**
Speaker: Sabrina Ulmer (Aarau, Switzerland)
- EP01023 Postoperative mortality after endovascular and microsurgical treatment of patients with ruptured cerebral aneurysms**
Speaker: Taras Shatokhin (Moscow, Russian Federation)
- EP01032 Clinical impact of lamina terminalis opening in anterior communicating artery aneurysms following subarachnoid hemorrhage: a single center experience**
Speaker: Sergio Sousa (Porto, Portugal)
- EP01036 Influence of aneurysm location on the clinical course of subarachnoid hemorrhage**
Speaker: Jennifer Götsche (Hamburg, Germany)
- EP01037 Remote cerebellar hemorrhage after microsurgical treatment of anterior circulation aneurysms: a single centre 8-year experience**
Speaker: Andrej Porčnik (Ljubljana, Slovenia)
- EP01039 Ruptured cerebral aneurysm clipping in the older population: A single center experience**
Speaker: Armindo Picão Fernandes (Porto, Portugal)
- EP01040 Development and characterization of a dual saccular elastase digested aneurysms rabbit model**
Speaker: Gwendoline Boillat (Bern, Switzerland)
- EP01041 Imaging in non-aneurysmal subarachnoid haemorrhage**
Speaker: Declan Browne (Belfast, United Kingdom)
- EP01044 Quality metrics for the acute care of subarachnoid hemorrhage: the Hessian stroke project**
Speaker: Marco Stein (Giessen, Germany)
- EP01048 Neutrophils induce a blood brain barrier disruption in a murine model of subarachnoid hemorrhage**
Speaker: Axel Neulen (Mainz, Germany)
- EP01053 Evaluation of transcranial Doppler in comparison with computed tomography angiography in earlier detection of vasospasm: a systematic review and meta-analysis**
Speaker: Shreya Chawla (London, United Kingdom)
- EP01055 Preventive effect of Vitamin D in treatment management of intracranial aneurysm**
Speaker: Sepide Kashefiolasl (Frankfurt am Main, Germany)

- EP01007 Scavenging free iron reduces arteriolar microvasospasms after experimental subarachnoid hemorrhage**
Speaker: Julian Schwarting (Munich, Germany)
- EP01012 The association between gastrointestinal fluid losses and delayed ischaemic neurological deficit in aneurysmal subarachnoid haemorrhage**
Speaker: Melissa Bautista (Leeds, United Kingdom)
- EP01015 Neurosurgical clipping versus endovascular coiling for unruptured and ruptured distal anterior cerebral artery aneurysms: a systematic review and meta-analysis**
Speaker: Keng Siang Lee (Bristol, United Kingdom)
- EP01016 Mental health, neurocognitive function, resilience and brain morphological changes in patients successfully treated for aneurysmal subarachnoid hemorrhage**
Speaker: Malte Ottenhausen (Mainz, Germany)
- EP01019 Incidence and outcome of periinterventional vasospasm during endovascular or microsurgical treatment of unruptured intracranial aneurysms**
Speaker: Basil Erwin Grüter (Aarau, Switzerland)
- EP01026 Characterisation of serum biomarkers of angiographic cerebral vasospasm (ACV) and delayed cerebral ischemia (DCI) in aneurysmal subarachnoid haemorrhage**
Speaker: Michael Ita (Cork, Ireland)
- EP01029 Intracranial aneurysm rupture is predicted by abdominal aortic calcification index – a retrospective case-control study**
Speaker: Ville Rantasalo (Turku, Finland)
- EP01042 Timing of WFNS scoring for subarachnoid haemorrhage – a case for standardisation?**
Speaker: Sheikh Muktadir Bin Momin (London, United Kingdom)
- EP01043 Altered cerebral energy metabolism in the subacute stage of aneurysmal SAH – future predictor of neurological outcome? A prospective phosphorous MR-spectroscopy study**
Speaker: Alice Treichl (Innsbruck, Austria)

Vascular Aneurysms, Cavernomas and AVMs

- EP01047 Ruptured anterior communicating artery aneurysms – “Coil first policy”. Why and when?**
Speaker: Nikolay Velinov (Sofia, Bulgaria)
- EP01049 A potential protective role of bioactive adrenomedullin in cerebrospinal fluid against delayed cerebral ischemia in patients after aneurysmal subarachnoid hemorrhage: a prospective observational study**
Speaker: Michael Veldeman (Aachen, Germany)

- EP01051 Decompressive hemicraniectomy after subarachnoid haemorrhage – justifiable in light of long-term outcome?**
Speaker: Michael Veldeman (Aachen, Germany)
- EP01060 Spontaneous cerebral SAH by intranidal aneurysm rupture of cervical intramedullary glomus arteriovenous malformation: case report and review of the literature**
Speaker: Lara Brunasso (Palermo, Italy)
- EP01061 3D printing in brain AVM treatment**
Speaker: Mauro Campello (Reggio Calabria, Italy)
- EP01062 Spinal AVM: 10 years experience in a single centre**
Speaker: Marco Cenzato (Milano, Italy)
- EP01065 Ruptured proximal pontine artery aneurysm and association with cerebello-pontine angle cistern AVM fed by the same artery: a surgical challenge**
Speaker: Omar Porrini Prandini (Ancona, Italy)
- EP01064 External validation of brain arteriovenous malformation haemorrhage prediction and haemorrhage prognostication scores**
Speaker: Basel Taweel (Liverpool, United Kingdom)
- EP01066 Long-term outcome and quality of life after Cavernoma resection: Eloquent vs. Non-Eloquent areas**
Speaker: Loay Shoubash (Greifswald, Germany)
- EP01072 Multiple cerebral cavernous malformation with de novo formation after surgical treatment: a case report**
Speaker: Marinelle Castro (Pasig, Philippines)
- EP01068 Haemorrhagic brainstem cavernous malformation: early and long term functional outcomes after microsurgical resection**
Speaker: Carmine Antonio Donofrio (Cremona, Italy)
- EP12048 Perforating arteries of the lemniscal trigone: a microsurgical neuroanatomic description**
Speaker: Giuseppe Emmanuele Umana (Catania, Italy)

Vascular Fistulas and Spontaneous Hemorrhage

- EP01078 Development of a new index-based technique for Flow800-guided intraoperative identification of arterialized veins in the treatment of intracranial dural arteriovenous fistulas**
Speaker: Fateme Kasi Gharvir (Bari, Italy)
- EP01101 Ultrasound real-time evacuation of ICHs: an Italian two centers consecutive experience**
Speaker: Francesco Guerrini (Latina, Italy)
- EP01102 Oxidative stress is associated with poor neurological outcome after intracerebral hemorrhage**
Speaker: Elena Kurz (Mainz, Germany)

- EP01103 Non-traumatic subarachnoid hemorrhages without causal lesion evidenced by cerebral arteriography: about 81 cases**
Speaker: Christophe Joubert (Toulon, France)
- EP01106 Computer-aided analysis of intracerebral hemorrhage texture and its clinical significance**
Speaker: Roger M. Krzyżewski (Krakow, Poland)
- EP01100 Endoscopic surgery for supratentorial intracerebral haemorrhage: A systematic review and meta-analysis**
Speaker: Tim Hallenberger (Basel, Switzerland)
- EP01105 CSF augmented navigated evacuation of intracerebral haematomas: A safe and effective method**
Speaker: Dimitrios Seferis (Lünen, Germany)
- EP01111 Early carotid endarterectomy for symptomatic stenosis of internal carotid artery in the acute ischemic stroke**
Speaker: Adrian Bodiu (Chisinau, Moldova)
- EP01112 Do we know anything about atherosclerotic carotid plaques?**
Speaker: David Netuka (Prague, Czech Republic)

IONM

- EP11008 Synchronous cortical stimulation & task presentation during language mapping in resection of intrinsic brain lesions**
Speaker: David Colle (Gent, Belgium)
- EP11007 Passive sensorimotor intraoperative functional MRI for brain mapping and neuronavigation – first experience with three patients**
Speaker: Jonathan Wais (Vienna, Austria)
- EP11005 Monopolar and bipolar brain mapping during awake and asleep surgery beyond standard IONM settings**
Speaker: Franziska Staub-Bartelt (Düsseldorf, Germany)
- EP11003 Intraoperative neuromonitoring and cortical/subcortical brain mapping in patients with eloquent cerebral lesions of several localizations**
Speaker: Franziska Staub-Bartelt (Düsseldorf, Germany)

Trauma

Trauma Chronic Subdural and Traumatic SCI

- EP05030 Surgical significance of bilaterally fixed and dilated pupils and spontaneous regression in a case of non-traumatic acute subdural haemorrhage: report and literature review**
Speaker: Raunak Jain (London, United Kingdom)
- EP05038 Preoperative neutrophil to lymphocyte ratio as a predictor of chronic subdural hematoma recurrence**
Speaker: Omar Porrini Prandini (Ancona, Italy)
- EP05029 Surgical occlusion of middle meningeal artery in treatment of chronic subdural hematoma: anatomical and technical considerations**
Speaker: Thorbjørn Søren Rønn Jensen (Copenhagen, Denmark)
- EP05033 Middle meningeal artery embolization for the treatment of chronic subdural hematoma. A case series**
Speaker: Tillman Schrammel (Berlin, Germany)
- EP05035 The effect of steroids as an adjunct to surgical treatment in patients with chronic subdural hematoma**
Speaker: Roger Lodewijkx (Amsterdam, Netherlands)
- EP05036 A validation of the Kwon prognostic scoring system for chronic subdural haematoma**
Speaker: Sam Bader (Örebro, Sweden)
- EP05041 Systematic review of the impact of cannabinoids on neurobehavioural outcomes in preclinical models of traumatic and nontraumatic spinal cord injury**
Speaker: Faheem Bhatti (Cambridge, United Kingdom)
- EP05039 Prevalent yet preventable causes of traumatic brain injury in low-mid income countries & the role of law enforcement**
Speaker: Noor ul huda Maria (Lahore, Pakistan)
- EP05042 Rich-club functional sensorimotor networks after incomplete spinal cord injury**
Speaker: Alkinoos Athanasiou (Thessaloniki, Greece)
- EP05043 Complete burst fractures of the thoracolumbar junction with spinal cord injury: surgical management and clinical outcome in a case series of 27 patients**
Speaker: Vicki Marie Butenschoen (Munich, Germany)

Trauma TBI and Neurocritical Care

- EP05002 Neuroprotective effect of cinnamaldehyde in the rat model of mild traumatic brain injury**
Speaker: Pinar Kuru Bektaşoğlu (Istanbul, Turkey)

- EP05005 Are oral anticoagulants a risk factor for mild traumatic brain injury progression? A single-center experience focused on direct oral anticoagulants and vitamin K antagonists**
Speaker: Grazia Menna (Roma, Italy)
- EP05001 Long-term outcomes after brain surgery in elderly patients with traumatic brain injury**
Speaker: Rebeca Alejandra Gavrilă Laic (Leuven, Belgium)
- EP05011 Decrease number of deaths related to severe traumatic brain injury in intensive care unit during the first lockdown in Normandy**
Speaker: Frédérick Rault (Caen, France)
- EP05019 Quantitative assessment and localization of the hollowing of the temple after craniectomy and cranioplasty**
Speaker: Michael Kosterhon (Mainz, Germany)
- EP05009 Minimally-invasive endoscopy-assisted evacuation of acute subdural hematomas**
Speaker: Julia Eva Martín Colom (Cordoba, Spain)
- EP05012 Midline frontal depressed fractures: technical nuances in management**
Speaker: Siddharth Vankipuram (Lucknow, India)
- EP05014 Experience of surgical treatment of combat gunshot bihemispheric craniocerebral wounds in a specialized medical facility**
Speaker: Andrii Sirko (Dnipro, Ukraine)
- EP05015 Study on infection potential of explanted different cryostored skull flaps. Is storage at -80 °C better?**
Speaker: Rachit Agrawal (Lünen, Germany)
- EP05016 Predictive outcome indicators of patients with traumatic brain injury**
Speaker: Georgios Kougentakis (Samos, Greece)
- EP05017 Cranial bone swab cultures and associated risk of surgical site infection in patients with craniotomies or craniectomies**
Speaker: Klemen Krašovec (Ljubljana, Slovenia)
- EP05024 Diagnostic Subdural EEG Electrodes And Subdural hEmatoma (DISEASE): A study protocol for a prospective nonrandomized controlled trial**
Speaker: Sae-Yeon Won (Rostock, Germany)
- EP05054 Neurogenic dysphagia in subdural hematoma**
Speaker: Sae-Yeon Won (Rostock, Germany)
- EP05045 Direct oral anticoagulants vs. low-molecular-weight heparin for pulmonary embolism in patients with glioblastoma**
Speaker: Daniel Dubinski (Klinik für Neurochirurgie, Germany)
- EP05046 Estimation of intracranial pressure using fundoscopy**
Speaker: Mathias Just Nørtvig (Odense, Denmark)

- EP05050 Declining numbers of neurosurgical emergencies at a German University Medical Center during the coronavirus lockdown**
Speaker: Johannes Falter (Regensburg, Germany)
- EP05052 Extracorporeal membrane oxygenation in traumatic brain injury – A retrospective, multicenter cohort study**
Speaker: Patrick Czorlich (Hamburg, Germany)
- EP12047 How much monitoring is required after elective craniotomy?**
Speaker: Dominik M. A. Wesp (Mainz, Germany)
- EP05004 Patients costs and patient flow after implementation of S100B in Scandinavian head trauma guidelines**
Speaker: Thorbjørn Søren Rønn Jensen (Copenhagen, Denmark)
- EP05006 Craniospinal injuries related to kitesurfing – funsport or higher-risk sport**
Speaker: Jonas Müller (Greifswald, Germany)

Spine

Intra- and Extra-medullary spinal cord tumors

- EP02122 Effects of compressive lesions on intraoperative human spinal cord elasticity**
Speaker: Ghaida Alawaji (Riyadh, Saudi Arabia)
- EP02126 Autograft-derived spinal cord mucocoele following olfactory mucosal cell transplantation after spinal cord injury**
Speaker: Maria João Machado (Braga, Portugal)
- Immunoglobulin G4-related disease masquerading an epidural spinal cord tumor: a case report**
Speaker: Ebtesam Abdulla (Manama, Bahrain)
- EP02134 Neurological outcome following spinal intramedullary ependymoma ablation – A single center experience**
Speaker: Obada T Alhalabi (Heidelberg, Germany)
- EP02124 Surgery for spinal meningioma: postoperative quality of life assessment**
Speaker: Jenny Pettersson Segerlind (Stockholm, Sweden)
- EP02139 Management of spinal dumbbell tumors via a minimally-invasive posterolateral approach and carbon fiber reinforced PEEK instrumentation: technical note and surgical case series**
Speaker: Michael Schwake (Münster, Germany)
- EP02143 Spinal cord compression in relation to clinical symptoms in patients with spinal meningiomas**
Speaker: Alba Corell (Göteborg, Sweden)

EP02146 Spinal Arachnoid Web - a distinct entity of focal arachnopathy with favorable long-term outcome after surgical resection. Analysis of a multicenter patient population
Speaker: Stefanos Voglis (Zurich, Switzerland)

EP02147 Spinal meningiomas. Institutional experience
Speaker: Vladimír Přibáň (Plzeň, Czech Republic)

Spine Deformity, Infections, CVJ Anomalies

EP02061 Postoperative serum creatine kinase (CK) levels in patients treated with lumbar PSO
Speaker: Anto Abramovic (Innsbruck, Austria)

EP02060 Safety and efficacy of stand-alone anterior lumbar interbody fusion in L5-S1 isthmic spondylolisthesis
Speaker: Ralph T. Schär (Bern, Switzerland)

EP02104 Routine intraoperative smear testing for microbiological culturing in patients with reoperation due to recurrence after elective degenerative spine surgery – useful or negligible adjunct?
Speaker: Sebastian Siller (Munich, Germany)

EP02112 Postoperative thoracolumbar wound infection: single tertiary centre experience
Speaker: Frank Hamre Gil (Madrid, Spain)

EP02116 Surgical treatment in cervical spondylodiscitis
Speaker: Humberto Madrinan-Navia (Bogotá, Colombia)

EP02109 Treatment of spondylodiscitis: a new approach
Speaker: Pedro Abreu (Faro, Portugal)

EP02113 Retrospective analysis of long-term clinical and radiological outcome following surgical treatment of lumbar spondylodiscitis
Speaker: Björn Sommer (Augsburg, Germany)

EP02119 Transoral odontoidectomy: our experience in a limited resources set-up
Speaker: Muhammad Shaheer Akhtar (Peshawar, Pakistan)

EP02120 Anterior retropharyngeal release with posterior C1 C2 instrumented fusion: A report of four cases of neglected malunited type II odontoid fractures with a novel technique
Speaker: Muhammad Shaheer Akhtar (Peshawar, Pakistan)

EP02117 Surgical planning for craniovertebral junction anomalies using 3D printed patient-specific models: maybe we should use it more often
Speaker: Sara Nunes de Sequeira (Lisbon, Portugal)

Spine Degenerative Diseases

- EP02002 Duration of symptoms as a predictor of postoperative MacNaab level of well-being after lumbar disc herniation surgery**
Speaker: Milan Mladenovski (Pleven, Bulgaria)
- EP02007 Cost-effectiveness of open transforaminal lumbar interbody fusion (OTLIF) versus minimally invasive transforaminal lumbar interbody fusion (MITLIF): A systematic review**
Speaker: Ruud Droeghaag (Heerlen, Netherlands)
- EP02008 Physiologic decompression of lumbar spinal stenosis through anatomic restoration using Trans-Kambin Oblique Lateral Posterior Lumbar Interbody Fusion (OLLIF): a retrospective analysis**
Speaker: Hamid Abbasi (Burnsville, United States)
- EP02009 Transtubular anterior cervical foraminotomy for the treatment of compressive cervical radiculopathy: surgical results and complications in a consecutive series of cases**
Speaker: Rodolfo Maduri (Genolier, Switzerland)
- EP02011 Neurological outcome after anterior decompression surgery for degenerative cervical myelopathy: a systematic review**
Speaker: Valérie Schuermans (Heerlen, Netherlands)
- EP02022 Predictors of five-repetition sit-to-stand test performance in patients with lumbar degenerative disease**
Speaker: Anita M Klukowska (Nottingham, United Kingdom)
- EP02028 The fate of nonoperative management in patients with lytic spondylolisthesis**
Speaker: Siddharth Sinha (London, United Kingdom)
- EP02040 Does the extent of instrumentation influence clinical outcome in degenerative lumbar spine stenosis? A prospective case-control analysis**
Speaker: Parmenion Tsitsopoulos (Thessaloniki, Greece)
- EP02042 Incidence, risk factors, and treatment of incidental durotomy during lumbar decompression of the spinal canal**
Speaker: Fabian Winter (Vienna, Austria)
- EP02044 The using of peek rod in degenerative thoracolumbar spine diseases**
Speaker: Ali Dalgic (Ankara, Turkey)
- EP02050 What is the optimal timing for surgical intervention in Cauda Equina Syndrome (CES): lessons from a meta-analysis**
Speaker: Andreas K. Demetriades (Edinburgh, United Kingdom)
- EP02051 The level of the arthroplasty in hybrid cervical surgery and its effect on cervical range of motion**
Speaker: Matjaž Voršič (Maribor, Slovenia)
- EP02057 Preoperative anxiety is associated with postoperative dissatisfaction with the results of lumbar intervertebral discectomy**
Speaker: Liisa Kams (Tartu, Estonia)

- EP02026** **Vertebral artery injury during anterior cervical spine surgery**
Speaker: Sophie Nissen (Leeds, United Kingdom)
- EP02027** **Can general anesthesia prevent adverse effects during full-endoscopic spine surgery? Non-invasive intracranial pressure profile in 31 patients submitted to full-endoscopic spine surgery**
Speaker: Marcelo Campos Moraes Amato (São Paulo, Brazil)
- EP02030** **Role of pedicle screw augmentation in decreasing the reoperations rate following posterior lumbar interbody fusion**
Speaker: Pablo Mendivil (Salta, Argentina)
- EP02031** **Degenerative cervical myelopathy: the preoperative Nurick score as predictor of surgical outcomes**
Speaker: Carmine Antonio Donofrio (Cremona, Italy)
- EP02045** **The spectrum and prevalence of MRI pathologies of patients undergoing surgery for degenerative cervical myelopathy: preliminary analysis of an ongoing prospective study**
Speaker: Aria Nouri (Geneva, Switzerland)
- EP02047** **Prevalence of poor bone quality in patients undergoing spine surgery: A comprehensive approach**
Speaker: Ricardo Díaz-Romero (Las Palmas de Gran Canaria, Spain)

Spine Trauma and Vertebral Tumors

- EP02072** **Surgical site infections after minimally invasive versus open posterior instrumentation for patients with spinal metastases**
Speaker: Ann-Kathrin Joerger (Munich, Germany)
- EP02082** **What is a benign notochordal cell tumour? A systematic review of the literature**
Speaker: Inga Usher (London, United Kingdom)
- EP02067** **Clinical study on metastatic spinal tumor with ESCC scale 3**
Speaker: Kaoru Eguchi (Nagoya, Japan)
- EP02071** **Chordomas of the clivus and spine: an institutional experience**
Speaker: Mohamed Okasha (Newcastle upon Tyne, United Kingdom)
- EP02073** **3-D patient-specific monitored guidewire placement-guides: A safe@ technique**
Speaker: Carlos Magalhães Ribeiro (Vila Nova de Gaia, Portugal)
- EP02075** **Utility of the Spinal Instability Score in patients with spinal metastases: A single center study with 332 patients**
Speaker: Maximilian-Niklas Bonk (Augsburg, Germany)
- EP02079** **The prognosis of surgery in single vs multiple spinal metastases patients**
Speaker: Oula Al Ali (Kaiserslautern, Germany)

- EP02089** A pilot comparison and correlation of different patient reported outcome measures (PROMs) for the surgical management of thoracolumbar junction fractures
Speaker: Andreas K. Demetriades (Edinburgh, United Kingdom)
- EP02101** Thoracolumbar spine fractures, a review of cases treated in our service for 15 years
Speaker: Fatos Ollidashi (Tirana, Albania)
- EP02090** Occurrence of adjacent segment fractures after surgical treatment of an osteoporotic vertebral fracture – a comparison between two different treatment methods
Speaker: Nazeer Aboud (Jena, Germany)
- EP02091** Progression and new vertebral fractures rate after vertebral compression fracture: comparison between kyphoplasty/vertebroplasty and brace
Speaker: Raquel Gutierrez-Gonzalez (Madrid, Spain)

Skull Base

Skull Base Approaches and Reconstructive Techniques

- EP04059** Morphometric and computed tomography study of the olfactory fossa in a Greek population: clinical importance in skull base and endoscopic sinus surgery
Speaker: Theofilos S. Paleologos (Athens, Greece)
- EP04060** Surgical and dimensional anatomy of foramen magnum region as related to transcranial and endoscopic approaches
Speaker: Alice Giotta Lucifero (Pavia, Italy)
- EP04064** Surgical tactics of treatment craniofacial tumors, their intra-extracranial spread
Speaker: Dmytro Okonskyi (Kyiv, Ukraine)
- EP04070** Reconstructive phase in extended endoscopic endonasal approaches to the skull base and the anterior cranio-vertebral junction: from the operating room to the E.N.T. outpatient clinic
Speaker: Alessandra Putti (Ancona, Italy)
- EP04056** The evolution from the sitting to the semisitting position in the cerebellopontine angle surgery by the retrosigmoid approach: some historical and technical remarks
Speaker: Enrique Urculo (Donostia, Spain)
- EP04058** Endonasal trans sphenoidal endoscopic excision of pituitary adenoma with and without sellar floor reconstruction and nasal packing. A comparative study
Speaker: Asaad Zulfiqar (Dublin, Ireland)
- EP04063** The fate of autologous fat graft in skull base reconstruction after extended endoscopic endonasal approaches
Speaker: Francesca Vitulli (Naples, Italy)

- EP04065** **Anatomy of the cavernous sinus walls: an anatomical study of the dural layers**
Speaker: Arseniy Pichugin (Pittsburgh, United States)

Skull Base Meningiomas, Schwannomas, Pituitary, Endoscopy

- EP04003** **Neuropsychological outcomes after surgery for olfactory groove meningiomas**
Speaker: Paul Eugène Constanthin (Genève, Switzerland)
- EP04007** **Predictors of survival in atypical meningiomas**
Speaker: Michele Da Broi (Oslo, Norway)
- EP04012** **Extent of perifocal edema in meningioma patients is correlated with damage to whole brain connectivity as detected by resting-state functional MRI**
Speaker: Veit Stoecklein (Munich, Germany)
- EP04018** **Abrupt regression of multiples meningiomas after discontinuation of Cyproterone acetate (CA): a literature review and volumetric study**
Speaker: Amir El Rahal (Genève, Switzerland)
- EP04021** **Foramen magnum meningiomas: a systematic review and meta-analysis**
Speaker: Luca Paun (Geneva, Switzerland)
- EP04023** **Tuberculum sellae meningiomas: Pterional approach and postoperative outcomes**
Speaker: Martin Grutza (Heidelberg, Germany)
- EP04024** **A replacement method for local treatment studies on meningiomas – A meningioma xenograft model**
Speaker: Diana Freitag (Jena, Germany)
- EP04026** **Impact and risk factors of red blood cell transfusion on patients undergoing elective primary meningioma resection**
Speaker: Peter Baumgarten (Frankfurt Main, Germany)
- EP04008** **The supraorbital approach for resection of meningiomas of the anterior skull base: a large retrospective surgical and anatomical study**
Speaker: Lucas Serrano Sponton (Mainz, Germany)
- EP04009** **The Importance of surgical resection in the treatment of intracranial atypical meningiomas**
Speaker: Buket Sonmez (Bursa, Turkey)
- EP04017** **Predicting meningioma consistency and brain-meningioma interface with intraoperative strain ultrasound elastography**
Speaker: Grazia Menna (Roma, Italy)
- EP04031** **Neurofibromatosis Type 2 – indications and experiences with Bevacizumab**
Speaker: Maria Breun (Würzburg, Germany)

- EP04032 Vestibular schwannoma: Machine learning in prediction of the tumour growth**
Speaker: Daniela Stastna (Cambridge, United Kingdom)
- EP04039 A single-center experience of transsphenoidal endoscopic surgery for acromegaly in 73 patients: results and predictive factors for remission**
Speaker: Metehan Ozturk (Istanbul, Turkey)
- EP04040 3 Tesla intra-operative MRI as an adjunct to endoscopic pituitary surgery: An early assessment of clinical utility**
Speaker: Cathal John Hannan (Manchester, United Kingdom)
- EP04047 Deciphering the genetic and epigenetic background of silent and non-silent ACTH adenomas**
Speaker: Franz Ricklefs (Hamburg, Germany)
- EP04042 Characteristics and outcome after resection of functional pituitary adenomas with iMRI assisted transsphenoidal surgery**
Speaker: Andrej Pala (Günzburg, Germany)
- EP04074 Endoscopic assistance in the deep and narrow spaces of the brain – microscopic tumor surgery supported by the new micro-inspection tool QEVO®**
Speaker: Christian Doenitz (Regensburg, Germany)
- EP04075 Endoscopic-assisted microsurgical paramedian supracerebellar infratentorial approach to the posterior third ventricle. An anatomical morphometrical study and technical note with illustrative surgical cases**
Speaker: Lucas Serrano Sponton (Mainz, Germany)
- EP04073 Machine vision for real-time intraoperative anatomical guidance: A proof-of-concept study in endoscopic pituitary surgery**
Speaker: Victor E. Staartjes (Zurich, Switzerland)
- EP04078 Transorbital endoscopic approach for tumors of the sphenoid-orbital region: technique, feasibility, efficacy, and safety based on a consecutive case series**
Speaker: Cesare Zoia (Pavia, Italy)
- EP04002 The immunohistochemical expression of SSTR2A and 5 are independent prognostic factors in meningiomas**
Speaker: Felix Behling (Tübingen, Germany)

Peripheral Nerve Surgery

PNS-Basic and Innovative

- EP12003 Misconceptions about traumatic brain injuries in five sub-Saharan African countries: an e-survey**
Speaker: Chinedu Egu (Nottingham, United Kingdom)
- EP12028 Inventorying the management and outcomes of low-grade gliomas in Africa and suggestions for improvement: a scoping review**
Speaker: Setthasorn Zhi Yang Ooi (Cardiff, United Kingdom)
- EP12013 Management of patients undergoing elective craniotomy under antiplatelet or anticoagulation therapy: an international survey of practice**
Speaker: Ladina Greuter (Basel, Switzerland)
- EP12024 Scoping review of the existing funding sources for DCM research: opportunities and challenges for targeting the AO Spine RECODE DCM research priorities**
Speaker: Henry Bestwick (Cambridge, United Kingdom)
- EP12037 How do we treat the patients with penetrating traumatic brain injury – a multicentre study collaborating South Africa, Sweden, Finland and the UK**
Speaker: Iftakher Hossain (Turku, Finland)
- EP12001 The neurosurgical research potential in low- and middle- income countries: A reflexive thematic analysis**
Speaker: Charlotte J Whiffin (Cambridge, United Kingdom)
- EP12016 Emphasizing the role of neurosurgery within global health and national health systems: a call to action**
Speaker: Setthasorn Zhi Yang Ooi (Cardiff, United Kingdom)
- EP12031 Caliper navigation for craniotomy planning of convexity targets**
Speaker: Max Jägersberg (Mainz, Germany)
- EP12043 Diversity in neurosurgery**
Speaker: Andrea Klein (Washington DC, United States)
- EP12017 SARS-CoV-2 infection is an independent risk factor for intracranial haemorrhage**
Speaker: Sajjad Muhammad (Düsseldorf, Germany)
- EP12044 Need for ensuring care for neuro-emergencies – lessons learned from the COVID-19 pandemic**
Speaker: Nils Hecht (Berlin, Germany)
- EP12050 COVID neurosurgical Pan-impact**
Speaker: Antonio Francisco (Lisboa, Portugal)

- EP12040 The classification of PubMed neurosurgical abstracts using pretrained BERT model**
Speaker: Gleb Danilov (Moscow, Russian Federation)
- EP12005 A stitch in time saves nine: comparative analysis of dural tear repair surgery**
Speaker: Charles Taylor (Southampton, United Kingdom)

Pediatric

Pediatric

- EP06007 Epidemiological profile of patients undergoing correction of myelomeningocele in Brazilian public health system**
Speaker: Victor Bergsten Lopes (Salvador, Brazil)
- EP06002 Neuro-developmental outcomes of prenatally diagnosed ventriculomegaly over a ten year period**
Speaker: Suzanne Murphy (Dublin, Ireland)
- EP06005 Microsurgical ventriculocisternostomy is a valid alternative in obstructive hydrocephalus when ETV is not feasible**
Speaker: Viviana Aureli (Lausanne, Switzerland)
- EP06008 Minimally invasive endoscopically assisted remodeling (MEAR) of sagittal craniosynostosis: an alternative technique to open and endoscopic procedures with cranial orthosis time span reduction**
Speaker: Jakub Taborsky (Prague 5, Czech Republic)
- EP06010 Epidemiology of craniosynostosis in a Portuguese center: a case series review**
Speaker: Tiago Ribeiro da Costa (Porto, Portugal)
- EP06013 Management and outcome of symptomatic intracranial arachnoid cysts**
Speaker: Aurelia Peraud (Ulm, Germany)
- EP06012 Lambdoid sutures and Chiari I malformation in multisutural craniosynostosis**
Speaker: Luca Massimi (Rome, Italy)
- EP06014 Treatment of nonsyndromic craniosynostosis: a ten-year, single-center experience**
Speaker: Niko Njirić (Zagreb, Croatia)
- EP06015 The need for overcorrection - evaluation of computer-assisted virtually planned fronto-orbital advancement using postoperative 3D-photography**
Speaker: Nicole Frank (Basel, Switzerland)
- EP06016 Paediatric intracranial arachnoid cysts: long term follow up and outcomes**
Speaker: Ioannis Tsonis (Edinburgh, United Kingdom)

- EP06017 Management of anterior sacral meningoceles: our experience using the posterior approach. A case series**
Speaker: Muhammad Ahmad Kamal (Newcastle and Wear, United Kingdom)
- EP06018 Conus lipoma surgery in asymptomatic children: early results of total resection**
Speaker: Peter Spazzapan (Ljubljana, Slovenia)
- EP06022 Excellent functional and survival outcome in pediatric patients with thalamopeduncular low grade gliomas**
Speaker: Vladimír Beneš III (Prague, Czech Republic)
- EP06026 A 10 year retrospective observational study on the utility and prescription standards of Dexamethasone in pediatric neuro-oncosurgery in a tertiary care centre**
Speaker: Anutra Chumbala Na Ayudhaya (Edinburgh, United Kingdom)
- EP06027 Assessment of 5-aminolevulinic acid induced fluorescence during re-do surgery for paediatric CNS tumours and correlation with pre-operative MRI contrast enhancement with review of 11 cases**
Speaker: Simon Dockrell (Manchester, United Kingdom)
- EP06030 Dexamethasone use in paediatric central nervous system tumours: A review of current literature**
Speaker: Scott Morrison (Edinburgh, United Kingdom)
- EP06043 Closed reduction of ping-pong fracture by applying negative pressure**
Speaker: Julia Eva Martín Colom (Cordoba, Spain)
- EP06044 Torcular dural sinus malformations grading system (tDSM-GS)**
Speaker: Petr Liby (Prague, Czech Republic)
- EP06045 Complex surgical cranial remodelling for acquired meningoencephalocele after perinatal decompressive craniectomy**
Speaker: Miguel Saez Alegre (Madrid, Spain)
- EP06046 Natural course of cerebral cavernous malformations in children: A five-year follow-up study**
Speaker: Alejandro Santos (Essen, Germany)
- EP06023 Interhemispheric approaches for pediatric brain tumors resection**
Speaker: Hanna Salauyeva (Minsk, Belarus)

Other

Adult CSF Disorder

- EP09002 Clinical predictors of shunt responsiveness in the treatment of normal pressure hydrocephalus: a systematic review and meta-analysis**
Speaker: Santhosh G. Thavarajasingam (London, United Kingdom)
- EP09014 Frequency of abdominal pain relative to various types of shunt tubing**
Speaker: Kanza Tariq (London, United Kingdom)
- EP09016 Laparoscopic vs. open shunt placement: a two-year single centre experience**
Speaker: Kristy Kehoe (Newcastle Upon Tyne, United Kingdom)
- EP09003 Is there an expiry date for shunts in Normal Pressure Hydrocephalus?**
Speaker: Aida Kafai Golahmadi (London, United Kingdom)
- EP09004 The incidence of hydrocephalus in non-aneurysmal subarachnoid hemorrhage (NA-SAH)**
Speaker: Buket Sonmez (Bursa, Turkey)
- Three-dimensional versus two-dimensional endoscopic third ventriculostomy: surgical results of a preliminary comparative study**
Speaker: Francesco Corrivetti (Benevento, Italy)
- EP09013 Long term use of telemetric ICP measurement following endoscopic third ventriculostomy in adult hydrocephalus**
Speaker: Andrea Perera (Brighton, United Kingdom)
- EP09015 Determining the optimum time for assessing NPH patients following CSF drainage – QI study& the development of a patient satisfaction questionnaire – the Newcastle NPH questionnaire**
Speaker: Mohamed Eltayeb (Newcastle upon Tyne, United Kingdom)
- EP09017 Perioperative lumbar infusion testing in patients with spontaneous intracranial hypotension before and after microsurgery of spinal CSF leaks**
Speaker: Luisa Mona Kraus (Freiburg, Germany)
- EP09029 Neuroendoscopic treatment of very rare ventricular arachnoid cysts in adults**
Speaker: Piero Andrea Oppido (Roma, Italy)
- EP09032 Intracranial pressure is affected by sedation in the first 24 hours of monitoring**
Speaker: Melissa de Gouveia (London, United Kingdom)
- EP09033 Intracranial pressure determines headache morbidity in idiopathic intracranial hypertension**
Speaker: Olivia Grech (Birmingham, United Kingdom)
- EP09034 How much weight loss is required to reduce intracranial pressure in idiopathic intracranial hypertension?**
Speaker: Susan Mollan (Birmingham, United Kingdom)

- EP09037 Cerebrospinal fluid shunting protocol for idiopathic intracranial hypertension improves revision rate**
Speaker: Georgios Tsermoulas (Birmingham, United Kingdom)
- EP09038 Erenumab for headaches in idiopathic intracranial hypertension: A prospective open-label evaluation**
Speaker: Andreas Yiangou (Edgbaston, Birmingham, United Kingdom)
- EP09041 Obstructive sleep apnoea in idiopathic intracranial hypertension: findings from the Idiopathic Intracranial Hypertension Weight Trial (IIH:WT)**
Speaker: Andreas Yiangou (Edgbaston, Birmingham, United Kingdom)
- EP09044 Idiopathic intracranial hypertension: evaluation of admissions and emergency readmissions following primary shunt surgery through the United Kingdom hospital episode statistic dataset between 2002-2020**
Speaker: Olivia Grech (Birmingham, United Kingdom)
- EP13029 Risk factors and management of incisional cerebrospinal fluid leakage after craniotomy: preliminary results of a retrospective international multicenter study**
Speaker: Tristan P. van Doormaal (Utrecht, Netherlands)

Neurosurgery

- EP07006 Amino acid PET imaging in the follow-up of stereotactic irradiated meningiomas**
Speaker: Hanne-Rinck Jeltema (Groningen, Netherlands)
- EP07004 Pre-radiosurgery leucocyte ratios and modified glasgow prognostic score predict survival in non-small cell lung cancer brain metastases patients**
Speaker: Anna Cho (Vienna, Austria)
- EP07011 In situ real time dosimetric studies for spine radiation therapy in cadavers implanted with carbon fiber instrumentation**
Speaker: Miki Katzir (Omaha, United States)
- EP07014 Reporting and exploring the first case of crocodile tear syndrome following microvascular decompression of the trigeminal nerve**
Speaker: Mohammad Abul (Edinburgh, United Kingdom)
- EP07005 Evaluation of the endocrinological sequelae after particle radiotherapy on skull base lesions involving or adjacent to the pituitary gland in the adult population**
Speaker: Cesare Zoia (Pavia, Italy)
- Magnetic resonance imaging–based synthetic computed tomography of the lumbar spine for surgical planning: a clinical proof-of-concept**
Speaker: Victor E. Staartjes (Zurich, Switzerland)

New Technology

Translational and Emerging Technology

- EP13002** Transcortical approach to intraventricular and intra-axial tumour using image guided balloon dilatation technique and tubular retractor system
Speaker: Mohamed Okasha (Newcastle, United Kingdom)
- EP13003** Creation of a human central nervous system tumor bank using heterotopic xenografts
Speaker: Pierre Ferrer Pomares (Madrid, Spain)
- EP13011** An early warning system using machine learning for the detection of intracranial hematomas in the emergency trauma setting
Speaker: Tugrul Cem Unal (Istanbul, Turkey)
- EP13012** Spontaneous intracranial hypotension and Superficial Siderosis: closely linked diseases? A new concept of management
Speaker: Benedikt Haupt (Freiburg, Germany)
- EP13019** Prospective study of robot-assisted brain biopsies performed on 32 patients by using the RONNA G4 system
Speaker: Domagoj Dlaka (Zagreb, Croatia)
- Training in cerebral aneurysm clipping using self made 3 dimensional models including blood flow
Speaker: Manuel de Jesus Encarnacion Ramirez (Moscow, Russian Federation)
- EP13040** Inter-rater reliability of information extraction from clinical notes in neurosurgery: human expertise vs. machine learning
Speaker: Gleb Danilov (Moscow, Russian Federation)
- EP13042** The effect of augmented reality on the learning curve of external ventricular drain placement
Speaker: Frederick Van Gestel (Brussels, Belgium)
- EP13052** Multimodal simulation of a novel device for a safe and effective external ventricular drain placement
Speaker: Giuseppe Emmanuele Umana (Catania, Italy)
- EP13057** Supervised machine learning approaches applied in the diagnostic workup of spontaneous intracranial hypotension
Speaker: Luisa Mona Kraus (Freiburg, Germany)
- EP13059** Presence of Cutibacterium acnes in healthy bone specimens of the skull in cranial neurosurgery: pathogenic, contamination or colonization?
Speaker: Vicki Marie Butenschoen (Munich, Germany)
- EP12049** Feasibility and safety of titanium-enhanced biocompatible calcium-phosphate implants for cranioplasty
Speaker: Dominik M. A. Wesp (Mainz, Germany)

- EP13022 Lumen- versus wall-oriented treatment strategies for intracranial aneurysms: a systematic review of suggested therapeutical concepts in preclinical studies**
Speaker: Basil Erwin Grüter (Aarau, Switzerland)
- EP13038 Detection of peritumoral white matter damage using optical coherence tomography**
Speaker: Konstantin Yashin (Nizhny Novgorod, Russian Federation)
- EP13028 Digital Phenotypic Assessment in Neuro-Oncology (DANO): tracking changes in sociability in patients undergoing treatment for brain malignancies**
Speaker: Francesca Siddi (Boston, United States)
- EP13050 ⁶⁸Ga-DOTATOC PET/CT follow-up after single or hypofractionated Gamma Knife ICON radiosurgery for meningioma patients**
Speaker: Giuseppe Emmanuele Umana (Catania, Italy)
- EP13041 The impact of COVID-19 and governmental restrictions on neurosurgery referral patterns: experience of a tertiary neurosurgery centre in the United Kingdom using a data-science approach**
Speaker: Arif Hanafi Bin Jalal (London, United Kingdom)
- EP13046 Robotic navigated laser craniotomy for depth electrode implantation in epilepsy surgery: experiences in a cadaver lab and in-vivo non-recovery study**
Speaker: Fabian Winter (Vienna, Austria)
- EP13031 Glymphatic pathways in the gyrencephalic brain**
Speaker: Nagesh Shanbhag (Lund, Sweden)
- EP13045 The use of mixed reality for the treatment planning of unruptured intracranial aneurysms**
Speaker: Vito Stifano (Rome, Italy)
- EP13017 Neuroprotective effect of niacin in rabbit spinal cord ischemia/reperfusion injury**
Speaker: Pinar Kuru Bektaşoğlu (Istanbul, Turkey)
- EP13032 Guiding the use of electrical stimulation modes for post-injury rehabilitation and improvement of motor function**
Speaker: Alkinoos Athanasiou (Thessaloniki, Greece)
- EP13039 Radiation doses of sliding gantry CT-based as compared to mobile cone-beam CT-based navigated pedicle screw placement in a homogenous cohort**
Speaker: Maximilian Schwendner (Munich, Germany)
- EP13020 Machine learning tools for complication prediction in spine surgery**
Speaker: Urja Parekh (Mumbai, India)
- EP13007 Utilization of an automated sms-based electronic patient reported outcome tool in spinal surgery patients**
Speaker: Kaushik Das (White Plains, United States)

- EP13016 Rapid intraoperative confirmation of pathological tissues using fluorescein fluorescence in stereotactic biopsy of contrast enhancing brain lesions**
Speaker: Ady Thien (Bandar Seri Begawan, Brunei)

Neuro-Oncology

Oncology Advance Imaging-Monitoring

- EP03095 Management of periventricular glioblastomas in a projection of sensorimotor strip: surgical planning and functional outcomes**
Speaker: Artem Rozumenko (Kyiv, Ukraine)
- EP03097 Preoperative assessment of language dominance through combined resting-state and task-based functional magnetic resonance imaging**
Speaker: Christian Ott (Regensburg, Germany)
- EP03106 Mobile-health and neurocognitive domains evaluation through smartphones: A meta-analysis**
Speaker: Francesca Siddi (Boston, United States)
- EP03111 Neuronavigation based on intraoperative CT-scan: imaging protocol to increase navigation accuracy and reliability**
Speaker: Francesco Certo (Catania, Italy)
- EP03112 Glioblastoma treatment in elderly patients: is it different than in younger patients? A single-institution outcome analysis based on a surgical multimodal approach**
Speaker: Francesco Certo (Catania, Italy)
- EP03099 Association of altered peritumoral diffusivity with seizures in patients with glioblastoma**
Speaker: Daniel Deuter (Regensburg, Germany)
- EP03100 Development of radiomics-based progression model for intracranial meningioma**
Speaker: Darius Kalasauskas (Mainz, Germany)
- EP03103 Preoperative navigated TMS-DTI-based tracking of the optic radiation: A proof of concept**
Speaker: Karlijn Hakvoort (Aachen, Germany)
- EP03107 Subcortical motor ischemia can be detected by intraoperative MRI within one hour: a case-control study**
Speaker: Sebastian Ille (Munich, Germany)
- EP03109 Neuroinflammation, epilepsy and psychological morbidity in patients undergoing surgery for intracranial meningioma**
Speaker: Jeppe Haslund-Vinding (Copenhagen, Denmark)

Oncology Gliomas

- EP03007** TAMEP are brain tumor parenchymal cells controlling neoplastic angiogenesis and progression
Speaker: Roland Kälin (Munich, Germany)
- EP03008** Transylvian insular glioma surgery: new classification system, clinical outcome in a consecutive series of 79 cases
Speaker: Andrey Bykanov (Moscow, Russian Federation)
- EP03014** Is awake craniotomy safe in patients with psychiatric history?
Speaker: Howra Ktayan (Leeds, United Kingdom)
- EP03018** Orally administered 5-aminolevulinic acid for isolation and characterization of circulating tumor-derived extracellular vesicles in glioblastoma patients
Speaker: Thomas Sebastiaan van Solinge (Charlestown, United States)
- EP03019** Association of Isocitrate Dehydrogenase (IDH) status with edema to tumor ratio and its correlation with immune infiltration in glioblastoma
Speaker: Daniel Dubinski (Klinik für Neurochirurgie, Germany)
- Impact of primary or recurrent planned awake brain surgery on psychooncological status in neurooncological patients**
Speaker: Franziska Staub-Bartelt (Düsseldorf, Germany)
- EP03023** Irradiation and Tumor Treating Fields in human Glioblastoma cells: Has sequence of application an impact on cell survival?
Speaker: Hanna Gött (Giessen, Germany)
- EP03028** Extraneural metastases of glioblastoma multiforme: a systematic review
Speaker: Myrto Smyrni (Heraklion, Greece)
- EP03034** The utility of plasma circulating cell-free messenger RNA as a biomarker of glioma: a pilot study
Speaker: Michael Ita (Cork, Ireland)
- EP03037** Correlation of Clinical Frailty Scale with IDH mutation and MGMT methylation in high-grade glioma
Speaker: Julia Klingenschmid (Innsbruck, Austria)
- EP03006** Analysis of intraoperative ultrasound images of brain tumors using radiomics and artificial intelligence
Speaker: Santiago Cepeda (Valladolid, Spain)

Oncology Gliomas and Adjuvant therapies

- EP03043** Tumor-treating-fields therapy may influence the cerebrospinal fluid shunt valve settings in patients with high-grade glioma
Speaker: Ina Konietzko (Augsburg, Germany)
- EP03046** Intraventricular and brain stem tumors. Endoscopic possibilities
Speaker: Dmytro Teslenko (Kyiv, Ukraine)

- EP03048 Anti-CMV serostatus correlates with shortened progression free- and overall survival in patients with glioblastoma**
Speaker: Harald Krenzlin (Mainz, Germany)
- EP03050 Hydrocephalus in supratentorial glioblastoma: indications, risk factors for shunting and outcome**
Speaker: Amir El Rahal (Genève, Switzerland)
- EP03061 Glioblastoma multiforme after stereotactic radiosurgery treatment for arterio-venous malformation – case report and review of the literature**
Speaker: Saadit Sarah Houry (Jerusalem, Israel)
- EP03009 Evaluation of key prognostic factors for overall survival in 202 patients with lower-grade gliomas**
Speaker: Matthias Demetz (Innsbruck, Austria)
- EP03015 Analysis of tumor cell detection frequency at the resection borders of hemispheric gliomas and metastasis (prospective observation study)**
Speaker: Anton Ermolaev (Nizhniy Novgorod, Russian Federation)
- EP03017 The correlation between molecular genetic markers and MR features of Glioblastoma multiforme**
Speaker: Salah Layka (Bremen, Germany)
- EP03021 Quality indicators in neuro-oncology: modified Delphi process for the development of a quality indicator set for assessment of glioma care**
Speaker: Dimitri Vanhauwaert (Roeselare, Belgium)
- EP03025 Frailty are associated with increased post-operative morbidity and shortened overall survival in geriatric patients with glioblastoma**
Speaker: Dragan Jankovic (Mainz, Germany)
- EP03038 Impact of surgical delays on pre-operative complications in primary GBM patients – A 5-year study**
Speaker: Thaaqib Nazar (Cambridge, United Kingdom)
- EP03040 Shedding light on stereotactic laser ablation in neuro-oncology: A survey among European neurosurgeons**
Speaker: Ilaria Viozzi (Nijmegen, Netherlands)
- EP03042 Circulating extracellular vesicles as a novel tool for therapy monitoring of brain tumor patients**
Speaker: Franz Ricklefs (Hamburg, Germany)
- EP03044 Longitudinal analysis of T2-imaging pattern reflects clinical course of astrocytoma**
Speaker: Dieter Henrik Heiland (Freiburg, Germany)
- EP03049 Brain mapping-aided SupraTotal Resection (SpTR) of brain tumors: The role of brain connectivity**
Speaker: Giuseppe Roberto Giammalva (Palermo, Italy)

- EP03055** **⁶⁸Ga-PSMA-11 PET-CT vs. ¹⁸F-FDG PET-CT and MR perfusion-weighted imaging in preoperative cerebral gliomas diagnostics and histological grade prediction**
Speaker: Kacper Koczyk (Warsaw, Poland)
- EP03056** **Glioblastoma heterogeneity and cancer stem-like cells detection with advanced MRI in the non contrast enhancing tumor: time to personalized surgery and therapeutic paradigm shift?**
Speaker: Vincent Lubrano (Saint Jean, France)
- EP03070** **FLAIrectomy: a multimodal approach protocol in the surgical treatment of glioblastomas. Results from a single center study**
Speaker: Giuseppe Barbagallo (Catania, Italy)
- EP09021** **Neuroendoscopic challenges in ventricular tumors treatment**
Speaker: Piero Andrea Oppido (Roma, Italy)
- EP03120** **Synthesis of novel Thioridazine derivatives: in-vitro cytotoxicity and anticancer effect on glioblastoma**
Speaker: Stephanie Schwab (Bergen, Norway)
- EP03122** **Cortical representation of median and ulnar nerve suggests functional reorganization induced by motor-eloquent tumors**
Speaker: Wei Zhang (Munich, Germany)
- EP03119** **¹⁸F-FET PET imaging following immunotherapy with DC vaccination in glioblastoma patients**
Speaker: Marion Rapp (Duesseldorf, Germany)
- EP03121** **Safety and feasibility of resection combined with intraoperative radiotherapy of brain metastases: a single center experience with 42 cases**
Speaker: Maximilian-Niklas Bonk (Augsburg, Germany)
- EP03124** **Laser interstitial thermal therapy with intraoperative O-Arm® neuronavigation in malignant brain tumours – case series**
Speaker: Filipe Vaz da Silva (Porto, Portugal)

Oncology Secondary Tumors and Genetics

- EP03075** **The impact of EGFR and ALK mutations of NSCLC on clinical, morphological and prognostic characteristics of brain metastasis**
Speaker: Daniele Armocida (Roma, Italy)
- EP03078** **Smoking and survival in metastatic brain tumour patients: a systematic review and meta-analysis**
Speaker: Shreya Chalwa (London, United Kingdom)
- EP12036** **The behavior of 5-ALA in primary and histological subtypes of brain metastases: a systematic review and metaanalysis of the current literature**
Speaker: Gwendoline Boillat (Bern, Switzerland)

- EP03091 Clinical determinants impacting overall survival of patients with operable brain metastases from non-small cell lung cancer**
Speaker: Malte Mohme (Hamburg, Germany)
- EP03130 Genome-wide methylation profiling of glioblastoma extracellular vesicle DNA allows tumor classification**
Speaker: Franz Ricklefs (Hamburg, Germany)
- EP03138 Glucose stimulate metabolic reprogramming and tumor progressive processes in human meningioma cells**
Speaker: Diana Freitag (Jena, Germany)
- EP03128 Intraoperative DNA methylation classification of brain tumors impacts neurosurgical strategy**
Speaker: Einar O. Vik-Mo (Oslo, Norway)
- EP03139 Machine learning techniques application in glioma interactome study: A multicentric analysis of 100 patients**
Speaker: Maria Luisa Gandia Gonzalez (Madrid, Spain)
- EP03140 WHO 2016 classification and surgery for gliomas**
Speaker: Daniel Cahill (Boston, United States)

— Functional & Radiosurgery

Functional & Neurosurgery

- EP08013 Unfavourable course after hemispherotomy – management of complications and incomplete disconnection**
Speaker: Marec von Lehe (Neuruppin, Germany)
- EP08016 7 Tesla multi voxel spectroscopy (MRSI) may detect focal cortical dysplasia in intractable epilepsy patients as targets for epilepsy surgery**
Speaker: Jonathan Wais (Vienna, Austria)
- EP08020 Enlarged Suprameatal Tubercle as the primary cause of trigeminal neuralgia: Our 5-year experience of cases**
Speaker: Antonia Malli (Athens, Greece)
- EP08025 Psychological measures and their influence on outcome parameters of peripheral nerve field stimulation in patients with chronic low back pain**
Speaker: Frank Schwarm (Giessen, Germany)
- EP08026 Treating refractory pain through a novel approach of personalised, predictive electrophysiological modelling**
Speaker: Alceste Deli (Oxford, United Kingdom)
- EP08021 Exploration of the supraspinal hypothesis about spinal cord stimulation: A systematic review**
Speaker: Maarten Moens (Brussels, Belgium)

- EP08031** Investigation of the function of the sympathetic nervous system in patients with failed back surgery syndrome, treated with spinal cord stimulation
Speaker: Lisa Goudman (Brussels, Belgium)
- EP08030** The association between bodily functions and cognitive and emotional factors in chronic pain patients treated with neuromodulation: A systematic review
Speaker: Lisa Goudman (Brussels, Belgium)
- EP08029** Single and multilevel selective dorsal rhizotomy for spasticity in children
Speaker: Hanna Salauyeva (Minsk, Belarus)

Ethics & Integrity

History, Ethics and Education

- EP14001** 3D-printing our way to better neurosurgeons and better neurosurgical outcomes – where we are and where we could go?
Speaker: Harry Carr (Newcastle Upon Tyne, United Kingdom)
- EP14018** Ethical issues in neurosurgery: no raw data?
Speaker: Nikolaos Syrmos (Thessaloniki, Greece)
- Hospital survey on patient safety culture in neurosurgical departments from Republic of Moldova
Speaker: Silvia Danu (Chisinau, Moldova)
- EP14021** Tumor substitute models for neurosurgical trainees education – An initial experience
Speaker: Oliver Mueller (Dortmund, Germany)
- EP14023** The utility of mindfulness interventions in neurosurgical training
Speaker: Scott Morrison (Edinburgh, United Kingdom)
- EP14024** Female participation in academic European neurosurgery – A cross sectional analysis
Speaker: Karlijn Hakvoort (Aachen, Germany)
- EP14015** Full-immersive virtual reality platform for teaching and training of cerebrovascular anatomy: a randomized study
Speaker: Ladina Greuter (Basel, Switzerland)



ePosters

Vascular Neurosurgery

Aneurysms and Subarachnoid Hemorrhage Pathophysiology

- EP01002** Effect of valproic acid on vasospasm at experimental subarachnoidal hemorrhage model
C.Ö. Çakır, A. Koçak
- EP01004** Risk factors and outcome analysis of patients with intraoperative rupture (IOR) of ruptured cerebral aneurysm during microsurgical clipping
G. Sharma, S. Joshi
- EP01005** Could additional stent-retriever dilatation during continuous intraarterial nimodipin-application become a component in the management of a refractory, severe Vasospasm in aneurysmatic subarachnoid hemorrhage?
A. Knoll, G. Durner, M. Hlavac, M. Braun, B. Schmitz, C.R. Wirtz, R. König, A. Pala
- EP01006** Temporary occlusion of anterior circulation aneurysm, is it necessary?
N.u.H. Maria
- EP01009** Surgical outcome changes in elective anterior circulation aneurysm surgery over the last two decades due to technical improvements
S. Siller, P. Bernasconi, M. Kunz, J. Schwarting, J.-C. Tonn, C. Schichor, J. Thorsteinsdottir
- EP01011** Diagnostic pitfalls in patients with multiple intracranial aneurysms and subarachnoid hemorrhage: a case report
R. Bucpapaj, A. Feletti, P. Zampieri, F. Cozzi, F. Sala
- EP01014** The "Live Cadaver" an affordable and readily available training model for practicing neurovascular procedures
E. Aboud, C. Li
- EP01017** Multimodality treatment of giant basilar artery aneurysm. A case report of endoscopic transphenoidal transclival aneurysm sac and coils removal after craniotomy for trapping and bypass
A. Malli, D. Charitos, A. Andreou, K. Lagios, C.G. Zlatanos, N. Georgakoulis
- EP01021** Proximal wide-neck middle cerebral artery aneurysms with branch orifice from the aneurysm neck treated with a Pipeline flow diverter; safety outcomes and long-term imaging follow-up
J. Rinne, R. Rautio, M. Rahi, M. Sinisalo
- EP01022** Acute subdural hematoma due to ruptured middle cerebral artery aneurysm
C. Romero López, J. Ros de San Pedro, J. Torri, F.d.B. Arteaga Romero, A. López González, I. Martín Schrader

- EP01024 Anatomical variations of the neck structures and arteries of the New Zealand White Rabbit and its implication for the development of preclinical vascular models**
G. Boillat, T. Franssen, B. Grüter, S. Wanderer, L. Anderegg, S. Marbacher
- EP01025 Prevention of intraoperative complications ruptured aneurysms endovascular embolization in the acute period of subarachnoid hemorrhage**
O. Polkovnikov, N. Izbytska
- EP01027 Efficacy and safety of the dual-layer flow-diverting stent (FRED) for the treatment of cerebral aneurysms: single centre experience**
Y.C. Senol, Z.G. Sam, P. Ayanoglu Geliskan, B. Sayin, I. Akmanoglu, E. Daglioglu
- EP01028 Surgical tricks and their implication in giant paraclinoid aneurysm**
P. Singh, T. Pandey
- EP01030 Timing of treatment of aneurysmal subarachnoid haemorrhage: Are the goals set in international guidelines achievable?**
A. Choudhry, D. Murray, P. Corr, D. Nolan, D. Coffey, S. MacNally, A. O'Hare, S. Power, M. Crockett, J. Thornton, D. Rawluk, P. Brennan, M. Javadpour
- EP01031 Iatrogenic vascular injury in neurosurgery: complication avoidance and management**
A. Sharma, K. Bhaisora, S. Behari
- EP01033 A simple risk chart for accurate prediction of delayed cerebral infarction after subarachnoid hemorrhage**
I. Csók, C. Scheiwe, J. Grauvogel, J. Beck, P.C. Reinacher, R. Roelz
- EP01034 First-use of smart glasses on neurointerventional procedures: Evaluation during the COVID-19 pandemic**
C.A. Rodríguez-Arias, C. Sánchez Fernández, M. Schüler-Arteaga, J. Galvan-Fernández, M. Martínez-Galdámez
- EP01035 100 patients suffering from spontaneous subarachnoid hemorrhage: An eleven-year experience**
C. Wolfert, B. Sommer, C. Maurer, A. Berlis, E. Shiban
- EP01045 Internal carotid artery pseudoaneurysm as a cause of epistaxis: A case-based update**
J.P.P. Cunha, J.F. Cavalcante-Neto, G.E.P. Soares, A.B. Brandt, M.B.C. Monteiro, V.D.F. da Ponte, P.R.L. Leal
- EP01046 Functional and cognitive outcome after cerebral aneurysm microsurgery**
I. Shetova, V. Luk'yanchikov, T. Shatokhin, V. Shtadler, L. Belyakov, E. Grigor'eva, V. Krylov
- EP01050 Fenestrated anterior cerebral artery aneurysm: a case-based update**
S.T. de Oliveira, J.F. Cavalcante-Neto, J.V. Silva, A.E. Trés, J.A. Rodrigues-Filho, G. Cristino-Filho, P.R.L. Leal
- EP01052 Intraoperative flowmetry in incidental MCA aneurysms. Institutional experience**
V. Přibáň, J. Mraček, I. Holečková

EP01054 Diagnostics problems and choice of treatment methods for multiple anterior circulatory aneurysms

I. Bobryk, V. Kukharuk, S. Fetsiak, V. Andriichyshen

Prognosis of traumatic subarachnoid hemorrhage in relation with the molecular characterization of inflammatory markers among Sudanese patients
W. Elsalawi, T. Fadalla, M. Suliman, S. Aldaif

Pathognomonic bleeding pattern in aneurysms of the precallosal segment (P3) of the anterior cerebral artery

S.C. Yucetas, S. Kilinc

A giant aneurysm of the internal cavernous carotid artery miming a meningioma of the lesser wing of the sphenoid bone

M. Znazen, M. Borni, F. Kolsi, M.Z. Boudawara

Endovascular coiling embolization of cerebral aneurysms: a case series study

I. Preguza, G. Zapuhli, G. Davidov, A. Preguza, N. Ribac, A. Balan

AVM's

EP01056 Retrospective study and outcome predictor after microsurgical resection of cerebral arteriovenous malformations in Nepal

G. Sharma, P. Karki

EP01057 Pediatric arteriovenous malformations: clinical and surgical outcome of double center experience

W. Abouzeid, M. Shadad

EP01059 Unusual presentation of a frontal arteriovenous malformation

L. Benantar, K. Aniba

EP01063 Rare case of unruptured cerebral arteriovenous malformation mimicking pseudotumour cerebri

K.Z. Thant, W.-X. Chong, T. Scott, K. Patel

Cavernous Angiomas

EP01067 Cavernous angioma of the cauda equina: a case report

A. Mondelaers, T. Menovsky, E. De Smet

EP01069 The usefulness of the intraoperative MRI in the surgical treatment of cerebral cavernous malformations

T.E. Topczewski, R. Torne, J.A. Hoyos, A. Ferres Pijoan, A. Mosteiro Cadaval, G. Guizzardi, J. Enseñat

EP01070 Transorbital endovascular embolization of a dural carotid-cavernous fistula: An unusual approach

C. Sánchez Fernández, C.A. Rodríguez-Arias, M. Schüller Arteaga, J. Galván Fernández, M. Martínez-Galdámez

- EP01071 Pontine cavernous malformation surgical technique and management**
A. Sekhar
- EP01073 Midbrain cavernoma: video description of microsurgical resection**
F. Certo, R. Altieri, G. Barbagallo
- EP01074 Multimodal surgical management of supratentorial brain cavernous malformation: initial experience**
F. Certo, R. Altieri, G. Barbagallo

Cranial and Spinal Dural AV-Fistulas

- EP01075 Superior petrosal sinus dural arteriovenous fistulae complicated by a venous sinus thrombosis after surgical obliteration**
M. Abdo, A. Alomari, T. Alsindi, F. Nawaz, S. Alsaiani, F. Alghamdi
- EP01076 Transcranial embolization of a superficial dural arteriovenous fistula: An alternative technique after unsuccessful conventional approaches**
C. Sánchez Fernández, C.A. Rodríguez-Arias, J. Galván Fernández, M. Schüller Arteaga, M. Martínez-Galdámez
- EP01077 Spinal arteriovenous malformations, case series from a single institution in Bogotá, Colombia**
H. Madrinan-Navia, F. Perez, J.F. Abaunza-Camacho, D. Vergara-Garcia, J. Torres, A. Caballero, M. Riveros
- Spontaneous carotid cavernous fistula: a case report and review of literature**
M. Znazen, M. Borni, F. Kolsi, S. Abdelmoulah, M.Z. Boudawara
- Spinal dural arteriovenous fistula with arterial feeders from the external carotid artery: a rare case of cervical myelopathy**
S. Broekx, T. Daenekindt, E. Buelens, J. Deckers, K. Engelborghs, K. Joos, D. Peuskens, E. Cornips, J. Wuyts, F. Weyns
- Combined endovascular and open surgical approach for ruptured scalp cirroid aneurysms**
E. Ramírez-Ferrer, D. Vergara-Garcia, M. Riveros-Castilla, A. Caballero, J. Torres-Mancera

Cerebral Ischemia and Revascularization

- EP01080 Arnold Chiari malformation type I treatment with endovascular stent in patient with high intracranial pressure**
E. Moya Trillo, C. Doval Rosa, F.J. Dorado Capote, J.A. Escribano Mesa, J. Solivera Vela
- EP01081 Management of a false aneurysm combined with carotid-cavernous fistula in a patient with iatrogenic injury of the internal carotid artery relating to septoplasty**
A. Knoll, G. Durner, M. Hlavac, M. Scheithauer, M. Braun, B. Schmitz, R. König, C.R. Wirtz, A. Pala

- EP01084** Direct and combined revascularization versus indirect revascularization in the treatment of moyamoya disease: a systematic review and meta-analysis
K.S. Lee, M. Teo, J.J.Y. Zhang, G.K. Steinberg
- EP01085** Head protection after craniectomy: service evaluation and patient experience
P. Singhal, A.S. Pandit, V. Luoma, S. Ajina, A.K. Toma
- EP01086** Anterolateral approach for subaxial vertebral artery decompression in the treatment of rotational occlusion syndrome: results of a personal series
A. Giotta Lucifero, S. Luzzi, S. Marasco, A. Rampini, M. Del Maestro, G. Bellantoni, R. Galzio
- EP01087** Extracranial-intracranial bypass for treatment of cerebrovascular steno-occlusive disease: single-center experience
G. Mrak, N. Njirić, K. Brgić, H. Barić, V. Lupret, J. Nemir
- EP01088** Internal carotid artery dissection related to abnormalities of styloid process: Is it only a matter of length?
V. Tardivo, M. Bruzzo, A. Castaldi, G. Baldino, G. Siri, M. Del Sette, N. Romano
- EP01090** Neuronavigating transdural collaterals in Moyamoya disease surgery: Technical note
M. Costa, H. Lalgudi Srinivasan, D. Kozyrev, J. Roth
- EP01091** Efficacy of minimally invasive extra-intracranial bypass in patients with atherosclerotic steno-occlusive occlusive cerebrovascular diseases
V. Kaliuzhka, V. Piatykov, Y. Babalyan, K. Voronenko
- EP01092** Complication of bypass surgery: postoperative thrombosis of the A4-A4 side-to-side bypass after the "hybrid" treatment giant anterior communicating artery aneurysm
I. Tysh, V. Moroz, I. Skorohoda, I. Tsybaliuk
- EP01096** Experimental vascular microsurgery in rodents: tools for learning and training on side-to-side anastomosis
P. García Feijoo, C. Vivancos Sánchez, M. Sáez Alegre, V. Rodríguez Domínguez, J.M. Viñuela Prieto, M.L. Gandía González, F.E. Carceller Benito
- Development of the experimental high-flow bypass model in sheeps**
M. Staroverov, V. Krylov, E. Orlov, A. Veselkov, E. Galitskiy, A. Kudashev, V. Lukyanchikov, N. Polunina
- Complications of cerebral revascularization in patients with symptomatic atherosclerotic ICA occlusion**
I. Grigoriev, I. Senko, V. Krylov, O. Kordonskaia, I. Fumin, Z. Sermagambetova, G. Savenko
- Ultrasound navigation for the selection of an acceptor artery during surgical revascularization of the brain in patients with chronic cerebral ischemia**
A. Shulgina, V. Lukshin, D. Usachev

The using of radial artery in performing the alternative bypasses in brain revascularization

M. Staroverov, V. Krylov, V. Lukyanchikov, N. Polunina, V. Dalibaldiyan, V. Shtadler

North Atlanta external carotid-to-internal carotid artery bypass early experience: a retrospective case series

A. Grigorian, R. Gupta, B. Zussman, L. Beasley, A. Colon

Spontaneous Intracerebral Hemorrhages

EP01099 Neurosurgical treatment of hemorrhagic stroke

L. Novikova, A. Akopyan, M. Mustafin, K. Sharapova

EP01104 Spontaneous cerebellar hemorrhage and posterior fossa dimensions

C. Magalhães Ribeiro, A. Mota, R. Baggen Santos, P. Barros, T. Lima, M. Baptista

EP01107 Comparison of patients with probable cerebral amyloid angiopathy and mixed location haemorrhage: clinical presentation and imaging

C. Flüh, U. Jensen-Kondering, C. Weller, P. Langguth, G. Kuhlenbäumer, D. Berg, M. Synowitz, O. Jansen, N. Margraf

EP01109 Clinical and epidemiological profile of patients with ICH on a neurosurgical reference center at the Bahia state

V. Bergsten Lopes, A. Marianno, D. Dias, M.T. Calchi, J. Nunes, S. Cabral, F. Maia, W. Cruz, A. Vilas Boas, A. Pereira, K. Di Santo, L. Villas Boas, P. Soares, G. Alves, T. Jesuino, N. Nogueira, R. Teixeira, L. de Melo, I. Cardoso, J. Pontes, M. Paz, L. de Avellar

EP01110 Predictive factors for intraparenchymal stroke associated with subarachnoid hemorrhage

B. Noronha, W. Cruz, M.T. Calchi, A. Marianno, J. Nunes, S. Cabral, F. Maia, V. Bergsten, A. Tolentino, A. Vilas Boas, A. Pereira, K. Di Santo, L. Villas Boas, D. Dias, P. Soares, G. Alves, T. Jesuino, L. Cordeiro, I. Cardoso Silva, N. da Silva Nogueira, J. Pontes, L. De Avellar

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EP01113 A new additional surgical technique for operative correction of kinking and coiling of the carotid artery in the patients with hemiparesis or ischemic attack

M.E. Üstün, I.S. Daltaban, A. Coşar

EP01114 A new additional surgical technique for operative correction of kinking and coiling of the vertebral artery with vertebrobasilar insufficiency

M.E. Üstün, I.S. Daltaban

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- EP02005 Pediculo-body fixation in spondylolisthesis: an useful revision technique**
A. Veroni, G. Casero, A. Sinigaglia, A. Vesnaver, M. Sedia, R. Spinelli, S. Zironi, V. Dallolio, M. Ruini, N. Vitaliano
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- EP02012 Duration of symptoms as a predictor of postoperative patients' work ability after lumbar disc herniation surgery**
M. Mladenovski, M. Ovcharov, N. Vasilev, I. Mladenovski
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- EP02014 Economic performance of trans-kambin posterior oblique lateral lumbar interbody fusion (OLLIF) with a focus on hospital throughput efficiency**
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- EP02020** **Comparative safety and efficacy of four surgical techniques in three-level anterior cervical discectomy and fusion**
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- EP02023** **Percutaneous screws plus open laminectomy can be useful for unstable lumbar spine stenosis: a single center case series analysis**
F. Guerrini, C. De Simone, A. Pesce, G. Petrella, A. Pompucci
- EP02024** **A retrospective case-control study on treatment efficacy and patient reported outcome in single-level cervical discectomy followed by arthroplasty with disc prosthesis versus fusion with cage**
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T. Aoyama, N. Obara
- EP02029** **The outcome of transforaminal epidural injections in lumbar radiculopathy is independent of the presence of disc herniation on magnetic resonance imaging**
E. Verheijen, A. Munts, O. van Haagen, D. de Vries, C. Vleggeert-Lankamp
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P. Mendivil, G. Vergara, W. Velazquez, J.P. Sirena, S. Beltrame
- EP02033** **Two-level Cauda Equina syndrome**
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- EP02037** **Patients satisfaction following endoscopic radiofrequency in patients with predominant low back pain**
C. Wolfert, M.-N. Bonk, B. Stemmer, A. Edelmann, S. Motov, S. Ertl, A. Lang, E. Shiban
- EP02039** **Factors predicting early outcome after thoracoscopic discectomy**
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- EP02046** **Atlantoaxial joint synovial cyst: case report and literature review**
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- EP02048 Acute transient tetraplegia after posterior cervical decompression and fusion for chronic spinal cord compression the "White Cord Syndrome": A case report and review of the literature**
R. Díaz-Romero, S. Sánchez
- EP02052 Calcified thoracic disc herniation: minimally invasive modified costotransversectomy approaches**
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- EP02056 Pain outcome of lumbar decompressive surgery for degenerative lumbar spine disease using patient-reported pain outcome instruments**
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- Predominant lower limb involvement as a predictor of outcome following lumbar decompression for degenerative lumbar canal stenosis**
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A. Demirel, Y.S. Caglar

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- EP02064** Surgical treatment of complex C1-C2 deformity associated with rheumatoid arthritis – use of autologous bone graft of spinal process of C2 in intra-articular C1-C2 joint
M. Campos, S. Sequeira, L. Marques, C. Reizinho
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- EP02068** A case study of recurrent cervical chordoma: en bloc vs gross-total resection
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A. Nouri, G. Zegarek, E. Tessitore, E. Chaboudez, K. Schaller, R. Gondar
- EP02070** Surgical treatment for cervical spine metastases based on NOMS network
J. Mayorga-Corvacho, H. Madriñan-Navia, M. Riveros, L. Laverde
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R. Jabbar, J. Jankowski, A. Pawelczyk, M. Wojdyn, M. Radek
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G.F. Nicoletti, G. Scalia, S. Marrone, R. Costanzo, G.E. Umana, F. Graziano, M. Furnari, D.G. Iacopino
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A. Dalgic, R. Karadeniz, D. Divanlıoglu, O.M. Uckun, I. Gurpinar, A.D. Belen

EP02078 The spinal metastatic melanoma with scalp lesion presenting as radiculopathy
C. Kizmazoglu, M. Arslan, E. Ikizoğlu, F.O. Durak

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 M.T. Panadero Useros, G. Rodriguez-Boto Amago

EP02083 Tumors of C2: report of 7 cases
A. Dalgic, I. Gurpinar, G. Gunerhan, R. Karadeniz, Y.C. Senol, A.D. Belen

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M. Znazen, F. Kolsi, S. Abdelmoulah, M. Borni, M.Z. Boudawara

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A. Ben Nsir, M.A. Hadj Tayeb, R. Ben Fredj, A. El Mir, K. Belhadj Ali, K. Maamri,
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EP02085 Circumferential spinal reconstruction in 18 trauma cases: corpectomy and dorsal fixation
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EP02087 Navigated pedicle screws in a hybrid operative room: Our preliminary experience
A. Pompucci, F. Guerrini, A. Pietrantonio, A. Pesce, G. Petrella, M. Aloisi

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- EP03039 Systemic metastasis of Glioblastoma: a rare entity**
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G. Pang, S. Sinha, R. Gullan, F. Vergani, R. Bhango, K. Ashkan, J.P. Lavrador, King's Neuro Lab
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K. Papadopolou, D. Pagkou, A. Spiliotopoulos, I. Patsalas

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G. Alexiou, V. Zoi, E. Tsoumleka, N. Zacharopoulou, E. Vartholomatos, I. Leonardos, I. Chousidis, P. Tsekeris, A. Kyritsis, V. Galani

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EP04029 Functional results of vestibular schwannoma surgery: an eight-year single center case series

S. Sousa, V. Sá Pinto, J. Silva, A. Calheiros, R. Rangel

EP04030 Automated Koos classification of vestibular schwannoma with deep learning

N. Chokjrenwanit, A. Kujawa, R. Dorent, R. Bradford, N. Kitchen,
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EP04034 Management of vestibular schwannoma in the elderly – A matched-cohort study

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M. Okasha, J. Shapey, E. Maratos, N. Thomas, S. Barazi

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EP04037 Patient characteristics, clinical outcomes and predictors of tumor recurrence of single nostril endoscopic endonasal transsphenoidal surgery for pituitary macroadenomas at a Philippine tertiary center

J. Maala, M. Mariano, R. Casis, I. Sih, R. Torcuator, C. Barredo, E. Torio,
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EP04038 Primary osteosarcoma of the skull base: a rare case report

I. Zazpe Cenoz, D. De Frutos Marcos, A. Casajús Ortega, L. Ciércoles Ramírez,
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A. Pala, M. Hlavac, A. Knoll, G. Etzrodt-Walter, C.R. Wirtz
- EP04044 Pituitary adenoma surgery in the elderly**
M. Corniola, A. Lavé, B. Landis, S. Momjian, T. Meling
- EP04045 A 10-year retrospective analysis of non-functioning pituitary adenomas referred to a tertiary pituitary service with initial conservative management**
G. Pang, I. Ghani, M. Okasha, J. Gilbert, B. Whitelaw, S. Aylwin, E. Maratos, S. Barazi, N. Thomas, J. Shapey
- EP04046 Patient satisfaction with virtual appointments in multidisciplinary pituitary tumour clinics during COVID-19 pandemic**
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- EP04051 10 years + 2 years follow up of iMRI in sellar lesions**
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- EP04052 Primary ectopic orbital craniopharyngioma**
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- EP04054 Surgical management of pre-pontine neuroenteric cysts**
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- EP04068 First surgical experience of head and neck tumors in maxillofacial center: Neurosurgeon's viewpoint**
V. Lukianchikov, V. Krylov, T. Shatohin, D. Reshetov, I. Jakimenko,
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- EP04071 Retractor-free approach to middle cranial fossa: technical nuances**
F. Salvinelli, F. Bonifacio, F. Greco, F. Iafrati, P. Dorato, S.V. Lisi, R. Paracino,
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- EP04084 The “chameleon” sellar lesions: management of unexpected sellar masses**
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A. Almusa, S. Alromaih, F. Yaghmoor, I. Alarifi, S. Alsaleh, A. Alroqi, M. Aloulah, A. Ajlan, I. Sumaily
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A. Zamarron Perez, T. Kalantari Garcia, C. Ortega-Angulo, F. Hamre Gil, C. Cotúa Quintero, G. Rodriguez-Boto, R. Gutierrez-Gonzalez

Turmeric yields neuroprotective effects in model of repetitive traumatic brain injury via ERK/Nrf2 pathway

A.M.P. Siahaan, T. Tommy, M. Risfandi

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E. Zharova, V. Kiryanova

- EP05013** Comparative analysis of traumatic brain injuries epidemiology and outcomes in the Chechen Republic for 2001 – 2020 period

M. Yusupova, M. Idalov, M. Murdalova, Z. Idalov

- EP05020** Analysis of clinical prognostic factors in patients with acute subdural hematoma secondary to traumatic brain injury operated a 5 year experience

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- EP05021** Delayed bilateral, post-traumatic extra-subdural hematomas and convexity meningioma removal

A. Crea, G.E. Umana, L. Corbino, D. Franceschini, M. Fricia, F. Graziano, G.F. Nicoletti, S. Cicero, G. Scalia

- EP05022** Protocol for a multicenter, non-randomized, prospective study to compare PTH incidence in patients with severe TBI managed with DC versus those that are managed conservatively

G. Mavrovounis, A. Brotis, G. Alexiou, A. Büki, D. Dang, J. Ecklund, S. Florian, N. Foroglou, C. Gatos, A. Germanò, C. Iaccarino, A. Joannides, T. Khan, L. Rasulic, K. Rotim, A. Rubiano, B. Splavski, M. Tariq, M. Tomei, P. Tsitsopoulos, A. Demetriades, K. Fountas

- EP05023** Neutrophil to lymphocyte ratio to predict coagulopathy occurrence in traumatic brain injury

G. Alexiou, A. Sotiropoulos, A. Tzima, G. Lianos, J. Zika, D. Rizos, O. Ygropoulou, E.-S. Alexiou, S. Voulgaris

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M. Jovanović, M. Radović

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- EP05027** Mortality and outcome in patients undergoing burr-hole drainage of chronic subdural hematoma above the age of 80 years
A. Chiappini, L. Greuter, L. Mariani, R. Guzman, J. Soleman
- EP05028** A novel technique to reduce the amount of postoperative pneumocephalus after burr hole evacuation of chronic subdural hematoma
K.M. Ashour
- EP05031** Delayed brain re-expansion in schizophrenic patient affected by trabecular type chronic subdural hematoma
S. Marrone, G. Scalia, R. Costanzo, F. Graziano, G.E. Umana, C. Riolo, M. Furnari, D.G. Iacopino, G.F. Nicoletti
- EP05032** Bilateral post-traumatic hygromas in patient with fronto-temporal dementia
C. Riolo, G. Scalia, S. Marrone, R. Costanzo, G.E. Umana, F. Graziano, M. Furnari, D.G. Iacopino, G.F. Nicoletti
- EP05037** Optimal management of chronic subdural hematoma
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- EP05040** Cost-effectiveness of surgical management of cervical SCI in LMICs & the role of prehospital care
N.-u.-H. María

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M. Friedrich, M. Stein, J. Nagl, E. Uhl, M. Bender
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I. Abdalla
- EP05051** Management of dystonia in a case of acute epidural hematoma
K. Papadopoulos, D. Pagkou, S. Stamatiou, I. Balogiannis
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M. Borni, M. Znazen, F. Chaker, M.Z. Boudawara

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U. Haqqani
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K. Gretsikh, A. Tokarev, O. Evdokimova, V. Rak, A. Grin

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Brain radionecrosis after radiation therapy for atypical meningioma. An unexpected treatment outcome. A Case report

E. Abdulla, H. Luther, T. Shah, N. Chandran

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EP08007 MR-guided focused ultrasound versus DBS therapy for the treatment of tremor-dominant Parkinson's disease or essential tremor. An analysis on clinical efficacy, safety and cost-effectiveness

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- EP08008 Locating the ventral intermediate thalamic nucleus for deep brain stimulation surgery: Analysis of a case series comparing CT and MR targeting**
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J. Páscoa Pinheiro, D. Matos, J. Andrade, R. Pereira, M. Rito

Treatment of intractable midbrain tremor with a pedunculopontine nucleus radiofrequency lesion
A. Akay, M. Rükşen, B. Uludağ, S. İşlekel

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I. Zekja, V. Leka, R. Alimehmeti, F. Dashi, A. Rroji, J. Kruja

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- EP08017 10-year follow-up results of vagus nerve stimulation in refractory epilepsy – What happened to the patients?**
F. Vaz da Silva, V. Sá Pinto, S. Sousa, R. Rangel, J. Reis, A. Calheiros

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J. Kellenaers, K. Rijkers, G. van Mastricht, O. Schijns, G. Hoogland, J. Dings, S. van Kuijk, M. Vlooswijk, G. Wagner, S. Idema, E. van Straaten, J. Nelissen, H. Majoie

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- EP08023 Arterial hypertension independently predicts recurrence after surgery for trigeminal neuralgia: may a modifiable risk factor be a key component?**
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M. Solou, E.K. Papadopoulos, I. Ydreos, G. Savvanis, E.J. Boviatsis

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A. Dapaah, A. Edwards-Bailey, M. Sitaraman, R. Ashpole

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- EP09045 Outcome after surgical treatment of cerebrospinal fluid leaks in spontaneous intracranial hypotension – a matter of time**
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S. Lackermair, A. Müller, C. Peter
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F. Staub-Bartelt, B.B. Hofmann, M. Rapp, D. Hänggi, M. Kamp, M. Sabel
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E. Özgüray, M. Zileli, M.S. Bölük
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R. de Koning, A.C. Ciuculete, A. Egiz, J. Kotecha, S.Z.Y. Ooi, N.D.A. Bankole, J. Erhabor, M. Khan, D.U. Dalle, G. Higginbotham, D. Sichimba, S. Bandyopadhyay, U.S. Kanmounye
- EP12022** Nosocomial bloodstream infections with a high rate of drug-resistant microbes in neurosurgery patients: a 4-year analysis
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A. Theofanopoulos, D. Fermeli, S. Boulrieris, G. Kalantzis, Z. Kefalopoulou, V. Panagiotopoulos, D. Papadakis, S. Raftopoulos, C. Constantoyannis
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- EP12035 Untill the end: the role of hemostatic devices in neurosurgery**
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- EP12038 Glycation of benign meningioma cells leads to increased invasive potential**
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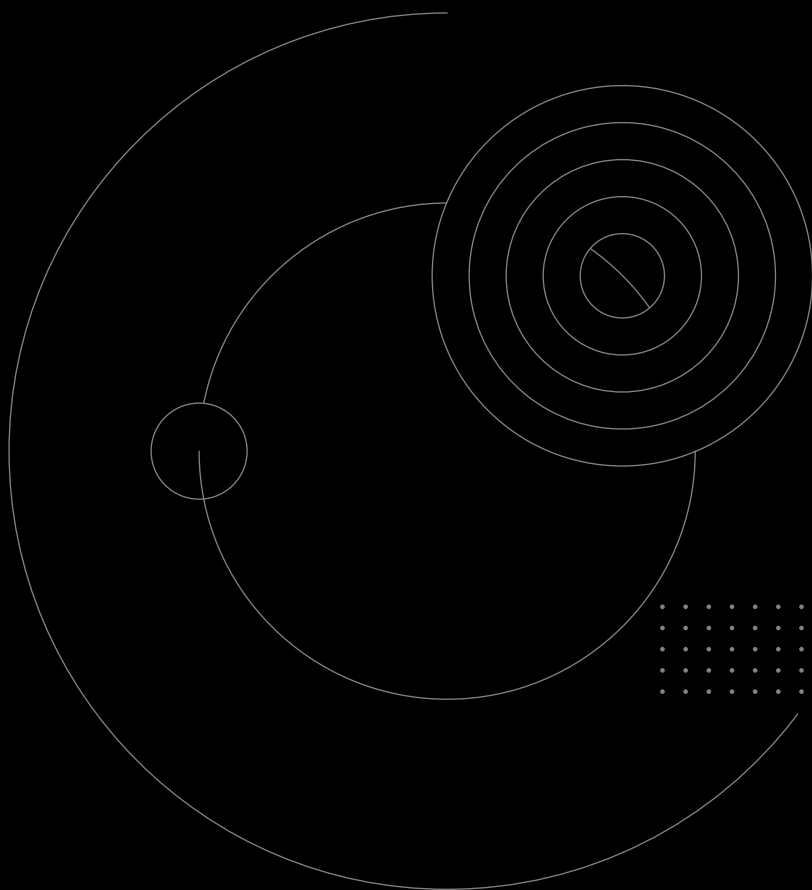
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MANAGEMENT OF AN ANEURYSMAL SUBARACHNOID HEMORRHAGE IN THE ICU
PATIENT JOURNEY STAGE 1

6.10.2021 **11:20 – 11:30** [Room 1](#)

MANAGEMENT OF AN ANEURYSMAL SUBARACHNOID HEMORRHAGE IN THE ICU
PATIENT JOURNEY STAGE 2

6.10.2021 **13:00 – 13:10** [Room 1](#)

CASE STUDY DISCUSSION: LOW GRADE GLIOMA RESECTION & AWAKE SURGERY

6.10.2021 **15:00 – 15:10** [Room 1](#)

CASE STUDY DISCUSSION: POST TUMOUR RESECTION CSF LEAK

6.10.2021 **17:10 – 17:55** [Room 1](#)

PROFESSOR CITERIO AND DR RAPP CASE STUDY SERIES ADDRESSING ASAH AND
TUMOUR RESECTION THROUGH PATIENTS' TREATMENT JOURNEYS

Sessions by



4.10.2021 **12:45 – 13:00**

[Room 2](#)

ORBEYE 4K3D EXOSCOPIC MICROSURGERY IN NEUROSURGICAL EMERGENCIES –
IS IT FEASIBLE? PART 1/3

5.10.2021 **12:10 – 12:25**

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ORBEYE 4K3D EXOSCOPIC MIRCORSURGERY: FEASIBILITY AND WORKFLOWS IN A
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6.10.2021 **13:05 – 13:20**

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MRI-GUIDED LASER ABLATION PROCEDURE AS A TREATMENT OPTION FOR
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TRANSFORMING THE CLINICAL WORKFLOW WITH POWERFUL SIMPLICITY

Session by



6.10.2021 **17:10 – 18:10**

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AWAKE SURGERY FOR LOW-GRADE GLIOMA, A CONNECTOME-BASED RESECTION:
HOW I DO IT.



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