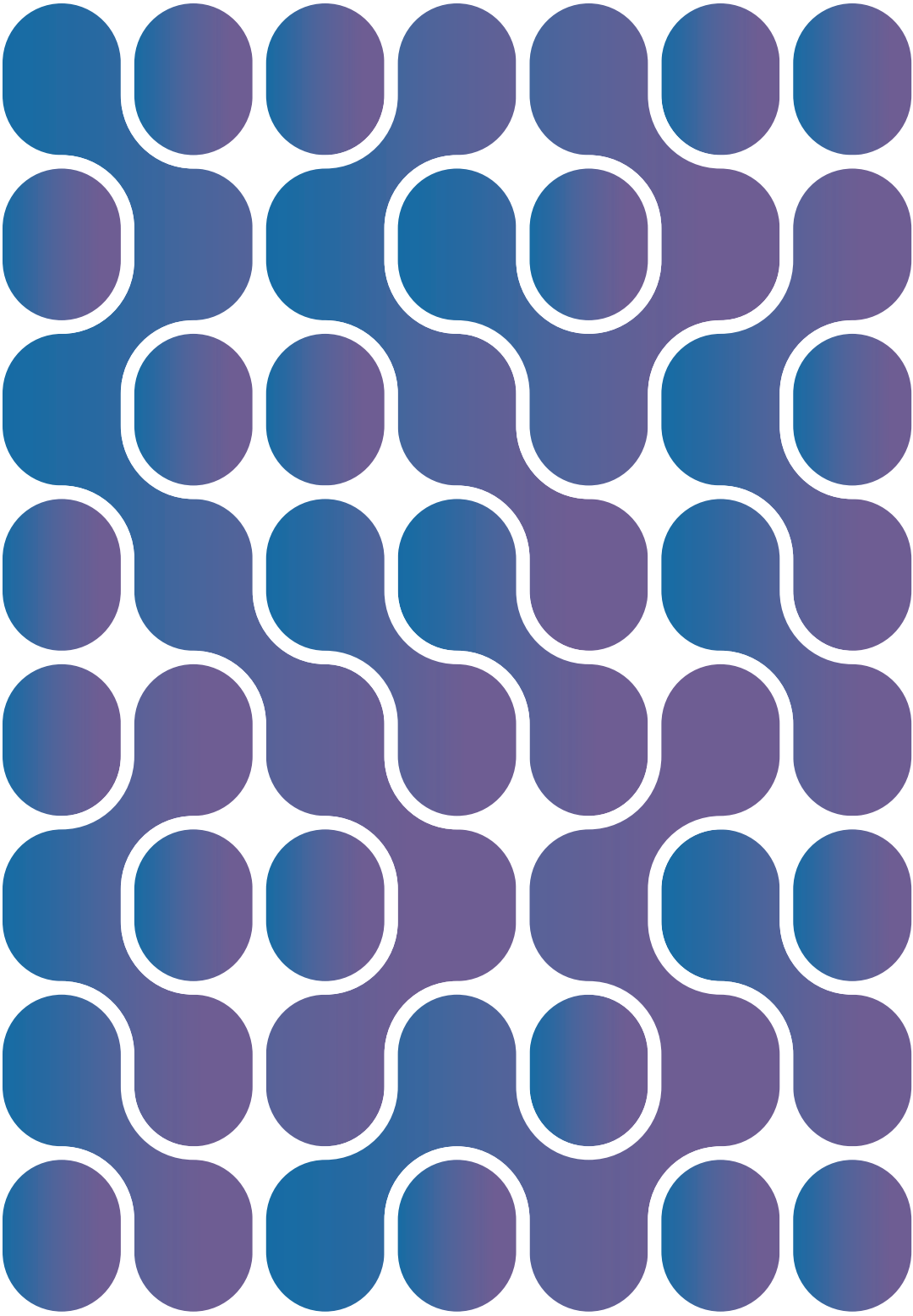
6th CROATIAN NEUROradiological MEETING 2025

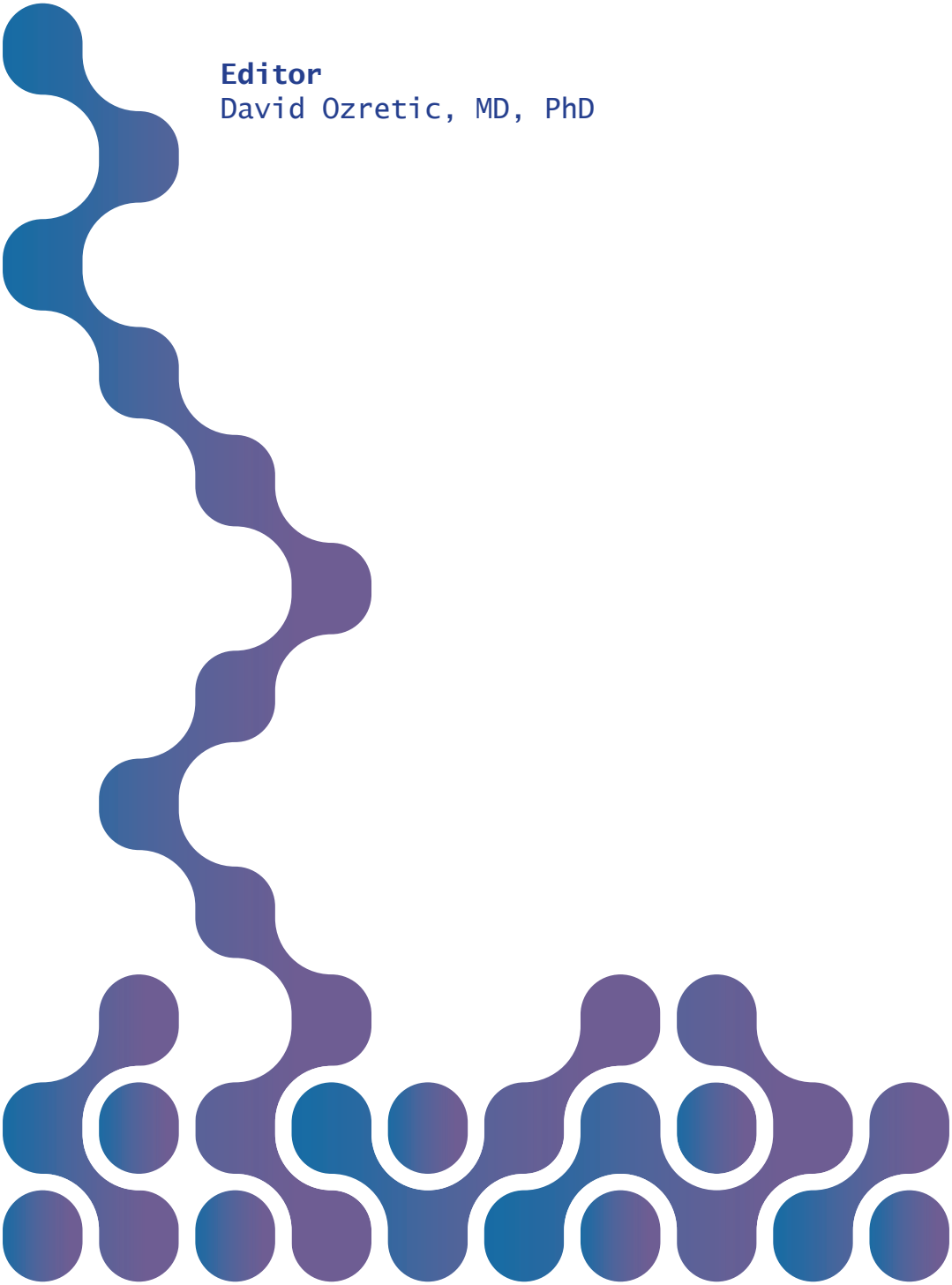
Book of Abstracts



6TH CROATIAN NEURORADIOLOGICAL MEETING

OCTOBER 17-19, 2025
ŠIBENIK, CROATIA

Editor
David Ozretic, MD, PhD



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WELCOME MESSAGE

Dear colleagues,

As was already announced, our 6th Croatian Neuroradiological meeting will take place in Amadria Park Hotel Ivan in Šibenik, on October 17th-19th, 2025.

We plan to repeat true and tested concept – invited lectures on various diagnostic and interventional topics, held by distinguished speakers, followed by shorter oral presentations, on October 18th and 19th. Again, everybody is invited to submit a title or an abstract, deadline is September 1st.

New addition to the program is a workshop on head & neck ultrasound, to be held on October 17th. Number of participants is limited to 20, so be quick to register.

I am sure that we will again achieve highest professional and scientific level as with our previous meetings, and will once more have good time exchanging experiences and discussing problems.
You are all invited to join us this autumn in Šibenik at the most important neuroradiological event in Croatia!

David Ozretic, MD, PhD
President of Croatian Neuroradiological Society

ORGANIZERS

HRVATSKO DRUŠTVO ZA DIJAGNOSTIČKU I INTERVENCIJSKU NEURORADIOLOGIJU
CROATIAN NEURORADIOLOGICAL SOCIETY - DIAGNOSTIC AND INTERVENTIONAL

The Croatian Society for Diagnostic and Interventional Neuroradiology is a body of the Croatian Medical Association, established by its members for professional and scientific work in the field of neuroradiology. The Society brings together experts in diagnostic and interventional neuroradiology, as well as in clinical and interventional radiology, who wish to contribute their experience, knowledge, and authority to the work of relevant bodies within the healthcare system of the Republic of Croatia on matters related to diagnostic and interventional neuroradiology.

Some of the Society's objectives include continuous professional and scientific advancement of its members through the organization of scientific and professional meetings, congresses, seminars, lectures, and courses–covering all forms of continuing medical education–collaboration with professional, scientific, and educational institutions, cooperation with the Ministry of Health of the Republic of Croatia in developing sub-specialization programs in neuroradiology and neuroradiology examination programs, providing expert opinions for the selection of Ministry of Health reference centers in the field of neuroradiology, and proposing scientific projects.

GENERAL INFORMATION

REGISTRATION DESK OPENING HOURS

Friday October 17, 2025	**16:00 – 18:00**
Saturday October 18, 2025	**08:00 – 18:00**
Sunday October 19, 2025	**08:00 – 13:00**

BADGES

All delegates and guests will receive a name badge at the registration desk.
The badge is the official meeting document and must be worn at all times.

CERTIFICATE OF CROATIAN MEDICAL CHAMBER CREDITS

An application for accreditation will be submitted to the Croatian Medical Chamber in due time.

EXHIBITION OPENING HOURS

- ***Friday October 17, 2025***
  Preparation of exhibition area from 14:00 o'clock
- ***Saturday October 18, 2025***
  Exhibition hours are 09:00 – 18:00
- ***Sunday October 19, 2025***
  Exhibition hours are 09:00 – 13:00

WEB PAGE

https://neurorad.hr/

CONTACT INFORMATION

Filida travel Agency
Dore Pfanove 7
10 000 Zagreb, Croatia
Mrs. Tatjana Mrzljak

VENUE

Amadria Park Hotel Ivan, a premier 4+ star beach front resort on Šibenik's Solaris peninsula, Croatia, offers 372 elegantly appointed rooms with sea or park views, air conditioning, Wi-Fi, and mini-bars, complemented by a Mediterranean Garden Spa featuring indoor pools, saunas, gym facilities, and wellness treatments. Nestled 55 km from Split Airport amid pine forests and Adriatic shores, it provides direct beach access, an outdoor saltwater pool, diverse dining at Restaurant Ivan, a vibrant nightclub, and proximity to attractions like Aqua park Dalmatia, ideal for scientific conference attendees seeking relaxation post-sessions. Guests praise its serene ambiance, exceptional breakfasts, and professional staff, making it a top choice for business events or unwinding during events such as the Croatian Neuroradiological Meeting.

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Martina Spero
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MEDICOM

KEYNOTE SPEAKERS

Cem Calli
(Izmir, TR)

Luigi Manfre
(Catania, IT)

Andrea Rossi
(Genoa, IT)

Zoran Rumboldt
(Rovinj, HR)

Katarina Surlan Popovic
(Ljubljana, SL)

Pia M. Sundgren
(Lund, SE)

Majda Thurnher
(Vienna, AT)

PROGRAMME

FRIDAY 17.10.2025.

12:30	**REGISTRATION AND COFFEE**
13:00 - 13:20	**Andrijana Jovic:** Introduction
13:20 - 13:40	**Martina Bukovac:** Ultrasound in Thyroid Gland Lesions and TI-RADS Classification
13:40 - 14:00	**Marin Stefancic:** Cervical Lymph Node Ultrasound: Recognizing the Red Flags
14:00 - 14:20	**Irena Ivkovic:** Salivary Glands Ultrasound
14:20 - 14:40	**COFFEE BREAK**
14:40 - 18:00	**Hands-on Session** (Including US-guided Interventions): · *Head and Neck US Anatomy, Knobology, and Systematic US Exam (Live Demonstration)* · *Fine-Needle Aspiration (FNA), Sample Smear on a Slide, Media for Immunophenotyping* · *Core Biopsy (Semi-automatic Core Biopsy)* · *Core Biopsy (Automatic Biopsy Gun)*
18:00	**Panel Discussion:** Where and How to Send the Samples

SATURDAY 18.10.2025.

08:45 – 09:00	**OPENING CEREMONY**
09:00 – 10:30	**SESSION 1**
	Andrea Rossi: Spine dysraphisms – a focus on the „tethered cord“
	Ana Tripalo Batos: Spine development through radiologist view
	Zoran Rumboldt: The craniocervical junction: more than just Chiari
	Naci Kocer: Spinal vascular malformations
10:30 – 11:00	**COFFEE BREAK**
11:00 – 12:30	**SESSION 2**
	Katarina Surlan Popovic: Orbital inflammatory and vascular lesions
	Jasmina Boban: Orbital tumors
	Zdravka Krivdic Dupan: Key points in Sinus Imaging: What Every Radiologist Should Know?
	Jasmina Plascak: MR in paranasal sinus imaging - when & how?
12:30 – 13:30	**LUNCH**
13:30 – 15:00	**SESSION 3**
	Martina Spero: Bone and bone marrow spinal tumors

	Kresimir Dolic: Brain lymphoma: yes or no? **Ana Hrkac Pustahija**: WHO 2021 glioma classification: role of neuroradiology in the era of molecular profiling of tumors **Majda Thurnher**: Therapy-associated CNS abnormalities in cancer patients
15:00 - 15:30	**COFFEE BREAK**
15:30 - 17:00	**YOUNG AND SENIOR RADIOLOGISTS - JOINT SESSION, PART ONE - ORAL PRESENTATIONS (15 min)**
15:30 - 15:40	**Danilo Gardijan**: ASPECTS score and hyperdense MCA sign in the diagnosis of acute ischemic stroke: preliminary results of a multicenter study
15:40 - 15:50	**Matea Prenc**: Middle Meningeal Artery Embolization as a Standalone Treatment for Primary and Recurrent Chronic Subdural Hematoma
15:50 - 16:00	**Sanja Lovric Kojundcic**: Outcome predictors in patients undergoing endovascular mechanical thrombectomy for acute ischemic major stroke
16:00 - 16:10	**Karlo Tadic**: Association between the T2W hypointense ring sign and molecular markers in gliomas - preliminary group

16:10 - 16:20	**Hrvoje Vavro**: Neuroradiology in preparation, navigation and follow-up of stereotactic radio-surgical thalamotomy in essential tremor
16:20 - 16:30	**Domagoj Lasic**: Class-Specific Maturation of the Preterm Neonatal Connectome at Term-Equivalent Age
16:30 - 16:50	**DISCUSSION**
18:30	**CONGRESS DINNER**

SUNDAY 19.10.2025.

09:00 - 10:30	**SESION 4** **Pia M. Sundgren:** Intramedullary tumors **Milos A. Lucic:** Back Pain MRI: The Good, The Bad and The Bulging Disc **Cem Calli:** Germ cell tumors and pineal tumors **Luigi Manfre:** Lumbar back pain treatment: what radiologist can do?
10:30 - 11:00	**COFFEE BREAK**
11:00 - 12:20	**YOUNG AND SENIOR RADIOLOGISTS - JOINT SESSION, PART TWO - ORAL PRESENTATIONS (15 min)**
11:00 - 11:10	**Dina Miletic Rigo**: Spontaneous Intra-cranial Hypotension - Case Report

11:10 - 11:20	**Nikolina Siljes**: Acute Toxic Extraocular Myositis Following Pesticide Exposure- Case Report
11:20 - 11:30	**Antonio Klemencic**: Imaging of Intraorbital Foreign Bodies: What Radiologist Should Know?
11:30 - 11:40	**Marija Juric Gunjaca**: Congenital Vallecular Cyst Presenting with Respiratory Distress in a Newborn: Case Report
11:40 - 11:50	**Martina Carev**: Dermoid Cyst in Infant with Facial Capillary Malformation: Differential Diagnosis of Sturge Weber Syndrome
11:50 - 12:00	**Igor Romcevic**: First reported case of glioblastoma with extracranial perineural spread and intracranial re-entery along the mandibular nerve
12:00 - 12:10	**Robert Semnic**: Pathology of posterior elements
12:10 - 12:20	**DISCUSSION**
12:20 - 12:50	**ANNOUNCEMENT OF THE BEST ORAL PRESENTATION CLOSING CEREMONY**
13:00	**FAREWELL LUNCH**

ABSTRACTS

ASPECTS score and hyperdense MCA sign in the diagnosis of acute ischemic stroke: preliminary results of a multicenter study

1

Danilo Gardijan[1]

1 Clinical hospital center Zagreb

Acute ischemic stroke caused by middle cerebral artery (MCA) occlusion represents one of the most urgent neurological conditions. Rapid and accurate diagnosis is crucial for selecting patients for reperfusion therapies, including intravenous thrombolysis and mechanical thrombectomy. On non-contrast CT, the most commonly used parameters are the Alberta Stroke Program Early CT Score (ASPECTS) and the hyperdense MCA sign (HMCAS). While ASPECTS has become the standardized tool for assessing early ischemic changes, HMCAS remains a specific but less sensitive sign still applied in clinical practice. Their comparative diagnostic value in contemporary stroke care is not fully established. To compare preliminary results on the diagnostic value of ASPECTS and HMCAS in detecting acute MCA occlusion in patients referred for mechanical thrombectomy. This retrospective multicenter study included patients with acute ischemic stroke who underwent mechanical thrombectomy between 2019-2025. Eligible patients had available non-contrast CT and CTA prior to intervention. Digital subtraction angiography (DSA) was used as the reference standard when available, while in patients who received intravenous thrombolysis, post-reperfusion vessel status was recorded. ASPECTS and HMCAS were independently evaluated by two blinded investigators. A total of 100 patients from several centers were analyzed. HMCAS demonstrated higher specificity but lower sensitivity compared to ASPECTS <10 in detecting MCA occlusion. ASPECTS showed superior overall diagnostic accuracy and better inter-rater reliability. Preliminary results suggest that ASPECTS outperforms HMCAS in diagnostic reliability, whereas HMCAS may retain a role as a rapid and specific visual marker in initial stroke assessment. Further patient inclusion and correlation with clinical outcomes are planned.

Brain Lymphoma: yes or no?

2

Kresimir Dolic[1], Iva Peric[1]

1 University hospital Split, Croatia, University Hospital Split,Croatia

Lymphomas of the CNS are the second most frequent primary brain malignancy in adults after gliomas, accounting for 7% of all malignant tumors. A presurgical suspicion of this tumor will greatly impact patient management. Neurological symptoms and MRI findings may mimic high grade gliomas (HGGs), tumefactive demyelinating lesions (TDLs), or infectious and granulomatous diseases. Primary CNS Lymphoma (PCNSL) can be found more in periventricular and subependymal location, while secondary CNS lymphoma can involve leptomeningeal enhancement. Primary diffuse large B-cell lymphoma of the CNS accounts for 80-85% of cases. They are most frequently found in the supratentorial brain (70-80%), uncommon in the posterior fossa and distinctly rare in the spinal cord. To give an insight into the most common pearls and pitfalls in the diagnosis of brain lymphoma. Classic imaging appearance for primary CNS lymphoma is of a CT hyperdense avidly enhancing mass, with T1 hypointense, T2 iso- to hypointense, vivid homogeneous gadolinium-enhancing lesion(s) with restricted diffusion on MRI, and exhibiting subependymal extension and crossing of the corpus callosum. In immunocompromised individuals or other lymphoma subtypes, appearances can be different and more heterogeneous. PET scans can help differentiate lymphoma from other lesions, assess treatment response, and predict outcomes. Corticosteroids can cause significant tumor shrinkage, so they are generally avoided until a definitive diagnosis, such as from a biopsy, is obtained. This lecture will present different examples of patients with brain lymphoma and lymphoma like lesions. Diagnostic work-up should start with contrast-enhanced MRI of the brain, which is the most sensitive imaging method to detect PCNSL. Atypical imaging findings are frequent in PCNSL including a diffuse or patchy enhancement or non-enhancement, which is often indistinguishable from other non-metastatic processes such as demyelinating disease. Multimodal and advanced imaging techniques (perfusion-weighted MRI, diffusion-weighted (DWI) MRI and 2-deoxy-2-18Fluorodeoxyglucose positron emission tomography (FDP-PET), can facilitate diagnosis in difficult cases. Follow up

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with contrast-enhanced brain MRI is recommended to re-evaluate the PCNSL lesions and to assess for decrease in size or disappearance of the lesion.

Middle Meningeal Artery Embolization as a Standalone Treatment for Primary and Recurrent Chronic Subdural Hematoma

3

Matea Prenc[1], Marko Bukna[1], Joško Bilandcic[1], Domagoj Gajski[1], Branimir Culo[1], Vladimir Kalousek[1]

1 KBC Sestre Milosrdnice, Zagreb

Chronic subdural hematoma (cSDH) is one of the most common neurosurgical emergencies. Due to high percentage of hematoma reaccumulation middle meningeal artery (MMA) embolization arose as an alternative treatment option.
This retrospective study aims to present single-center results of 97 standalone embolization procedures done during 3-year period. A prospectively maintained database of all patients who underwent MMA embolization from December 2021 to March 2025 was retrospectively analyzed. It included 75 asymptomatic or mildly symptomatic patients with 97 hematomas. In 55 patients, 72 MMA embolization procedures were done as primary treatment, whereas cSDH recurrence was the main indication for 25 procedures in 20 patients. Primary and recurrent cSDH groups were compared using the Chi-square test. The mean follow-up period was 140 days. During the follow-up period, 19 out of 97 (19.6%) hematomas resorbed completely. Moreover, 21 out of 97 (21.6%) hematomas reduced in size by more than 50% and 40 out of 97 embolized hematomas (41.2%) remained stable or were resorbed partially during follow-up. MMA embolization failed in 14 cases (14.4%). We noted 3 cases of asymptomatic hematoma progression (3.1%). Three patients died during the follow-up period. No statistically significant difference was shown between the primary and recurrent cSDH cohort when compared based on percentage of complete hematoma resolution, treatment failure, and rate of hematomas with >50% resorption. MMA embolization is both safe and feasible standalone treatment option for cSDH, primarily for asymptomatic and minimally symptomatic patients with maximal hematoma thickness in the range between 10 and 20 mm.

Congenital Vallecular Cyst Presenting With Respiratory Distress In A Newborn: Case Report

4

Marija Juric Gunjaca[1], Martina Carev[1], Maja Marinovic Guic[1], Ivan Kraljevic[1], Ljiljana Marcic[1], Duje Bulat[1], Sanja Lovric Kojundzic[1]

1 General Hospital of Šibenik-Knin County, Šibenik, Croatia,
2 University Hospital of Split, Split, Croatia

We present the case of a term female neonate who developed cyanosis and signs of respiratory distress on the third day of life. Initial stabilization and diagnostic work-up included blood tests, chest radiography, echocardiography, EEG, and ultrasound, which excluded significant cardiopulmonary or metabolic causes. Magnetic resonance imaging of the neck revealed a sharply demarcated, non-enhancing, pre-epiglottic cystic lesion in the midline, causing airway narrowing at the vallecula. Fiberendoscopy confirmed a cystic lesion at the base of the tongue, compressing the epiglottis and obstructing the laryngeal inlet. Due to repeated episodes of cyanosis and feeding difficulties, surgical treatment was indicated. At 22 days of life, the patient underwent microlaryngoscopy with complete excision of the cyst using photoangiolytic laser. Pathological analysis confirmed that it was a benign cyst occupying the vallecula. Postoperative recovery was uneventful, with rapid extubation, initiation of oral feeding, and complete resolution of symptoms. Follow-up showed no recurrence. Congenital vallecular cysts are extremely rare laryngeal lesions in neonates and represent a potentially fatal cause of upper airway obstruction. They can cause stridor, cyanosis, apnoea, and feeding intolerance. This case represents one of the few documented cases worldwide of congenital vallecular cyst in a neonate. It illustrates the diagnostic value of MRI in characterizing such lesions and the pivotal role of direct laryngoscopy in confirming the diagnosis and guiding surgical treatment. Awareness of this condition is essential for neonatologists, pediatricians, and otorhinolaryngologists, as early recognition and surgical excision is crucial for preventing life-threatening complications. Reporting such rare cases contributes to the limited global literature and underscores the need for multidisciplinary collaboration in managing neonatal airway emergencies.

Dermoid Cyst In Infant With Facial Capillary Malformation: Differential Diagnosis Of Sturge-Weber Syndrome

5

Martina Carev[1], Marija Juric Gunjaca[1], Maja Marinovic Guic[1], Ivan Kraljevic[1], Ljiljana Marcic[1], Sanja Lovric Kojundzic[1]

1 University Hospital of Split, Split, Croatia,

We present a rare case of a spinal intramedullary dermoid cyst in an infant with a facial port-wine stain (PWS), highlighting the diagnostic value of MRI in differentiating between Sturge-Weber syndrome (SWS) and other potential conditions. This case underscores the importance of comprehensive imaging in early diagnosis and timely intervention. A female infant with congenital PWS involving the left lower face, mandibular region, and neck was referred for neuroimaging due to suspicion of SWS. Neurological, ophthalmological, and developmental assessments were performed, all of which were within normal limits. EEG and ophthalmologic findings were unremarkable. Brain MRI, including susceptibility-weighted imaging (SWI) and contrast-enhanced sequences, showed no evidence of leptomeningeal enhancement or structural abnormalities, ruling out SWS involvement in the brain. However, spinal MRI revealed a well-circumscribed intramedullary lesion at the T7–T8 level, measuring 1.1 x 0.6 x 0.9 cm. The lesion exhibited T2 hyperintensity with peripheral contrast enhancement and extending to the skin via a dermal sinus tract. Given these findings, surgical resection was planned. At 4 months of age, the patient underwent laminectomy and complete excision of the lesion. Histopathological examination confirmed the diagnosis of a dermoid cyst. Postoperative MRI showed no residual lesion, confirming the successful removal of the cyst. Despite the presence of PWS, the clinical and radiological criteria for SWS were not met, and SWS was excluded as a diagnosis. This case emphasizes the importance of using MRI for comprehensive evaluation of infants with facial vascular malformations. In the absence of cerebral involvement, other potential diagnoses, such as developmental anomalies or overgrowth syndromes, should be considered. Early spinal imaging allowed for timely surgical intervention, preventing potential neurological compromise and ensuring a favorable outcome. This highlights the crucial role of MRI in guiding clinical decisions and optimizing patient care in such complex cases.

Outcome Predictors In Patients Undergoing Endovascular Mechanical Thrombectomy For Acute Ischemic Major Stroke

6

Sanja Lovricl Kojundzic[1], Luka Skrapic[1], Ivan Kraljevic[1], Maja Marinovic Guic[1], Dragan Dragicevic[1], Liljana Marcicl, Kresimir Dolic[1,] Martina Carev[1]

1 Clinical Department of Diagnostic and Interventional Radiology,University Hospital of Split, Split,Croatia

Acute ischemic major stroke (AIMU), most often caused by thromboembolic events, remains a leading cause of morbidity and mortality. Identifying factors that influence treatment outcomes after endovascular mechanical thrombectomy (EMT) is crucial for improving patient care. This study investigated whether the day of the week (weekday vs. weekend) and associated comorbidities influence outcomes of AIMU patients treated with EMT, alongside other potential prognostic factors.A retrospective analysis was conducted on 249 AIMU patients treated at the University Hospital of Split. Data were extracted from medical records, including demographics, NIHSS scores, and comorbidities, and used to calculate the Elixhauser Index (EI). Outcomes were assessed based on recanalization success (mTICI) and functional status at discharge (mRS, favorable/unfavorable, or death). Statistical tests were applied to evaluate associations between patient characteristics, treatment timing, and outcomes. Of 249 patients, 108 were men and 141 women, with a median age of 76 years. Age and sex were not significantly associated with mortality (p=0.169; p=0.452). Higher EI scores did not predict mortality (p=0.121). Deceased patients had significantly higher NIHSS scores at admission (p=0.036). Complete recanalization after thrombectomy was strongly associated with lower mortality (20% vs. 42%; p=0.001). Most procedures occurred on weekdays (64%) compared to weekends (36%), but mortality did not differ significantly by treatment day (p=0.273). Seasonality showed significant variation: winter had the highest procedure volume (39%) and significantly higher mortality (p=0.019), while autumn was associated with significantly lower mortality (p=0.010). The study demonstrated that the outcome after EMT for AIMU is strongly influenced by NIHSS score, thrombectomy success, and season of treatment. In contrast, age, sex, comorbidity burden, and day of the week were not significant predictors. These findings highlight the importance of clinical and procedural factors over temporal variables in determining prognosis.

Pathology of posterior elements

7

Robert Semnic[1,2]

1 Clinical Hospital Dubrava, Zagreb
2 University Hospital Uppsala, Sweden

The pedicles, laminae, facets (articular processes), transverse processes, and the spinous process represent the posterior elements of the spine. These structures are crucial for spinal stability, protection of the spinal cord and nerve roots, and they enable spinal movement. With aging, degeneration of the intervertebral discs initiates a cascade of degenerative changes in the posterior elements. Low back pain is the main clinical symptom, most often resulting from nerve root impingement within stenotic foramina. Degenerative manifestations with characteristic MRI features include facet arthrosis, degenerative spondylolisthesis, foraminal stenosis, Baastrup's disease, ligamentum flavum hypertrophy, and facet joint synovial cysts. A suppurative bacterial infection involving the facet joints is referred to as septic facet arthritis. An important entity within this group is isthmic spondylolisthesis, which has distinct pathophysiological mechanisms. In this condition, a congenital defect in the pars interarticularis permits anterior slippage of the vertebral body, pedicle, and superior articular process relative to the inferior articular process and the remainder of the vertebra. This displacement can lead to compression of nerve roots within stenotic or distorted foramina. MRI plays a crucial role in demonstrating soft tissue changes and nerve root compression, while CT provides complementary information for detailed visualization of bony changes. MRI plays a crucial role in demonstrating soft tissue changes and nerve root compression, while CT provides complementary information for detailed visualization of bony changes.

Association Between The T2W Hypointense Ring Sign And Molecular Markers In Gliomas - Preliminary Group

8

Karlo Tadic[1], Ana Hrkac-Pustahija[1]

1 Department of Diagnostic and Interventional Neuroradiology, University Hospital Centre Zagreb

Gliomas are the most common primary malignant brain tumors, with glioblastoma (GB) accounting for nearly half of cases and lower-grade gliomas (LGG) another third. Recent research has refined conventional MRI in glioma assessment, with emerging signs such as the T2-FLAIR mismatch and the T2-weighted (T2W) hypointense ring. The latter appears as a rim or arc of low signal intensity at the tumor–edema interface or edge, seen on T2W sequences in ~69% of high-grade gliomas (HGG). Its etiology remains debated but is distinct from the enhancing margin on post-contrast T1W imaging. To assess the relationship between T2W hypointense rings and molecular markers and grade used in glioma classification per WHO CNS 5. Pretreatment MR images acquired between January 2022 and August 2025 in patients with histopathologically proven gliomas were retrospectively identified. An experienced neuroradiologist, blinded for histopathology and all other clinical data, retrospectively evaluated preoperative T2W images for the presence or absence of hypointense ring sign. Associations with IDH mutation, MGMT methylation, TERT promoter mutation, ATRX loss, EGFR amplification, CDKN2A/B deletion, H3F3A mutation, and 1p/19q codeletion were tested with Fisher's exact test.Among 114 patients (29 LGG, 85 HGG), the T2W hypointense ring was present in 56,5% of HGG vs 6.9% of LGG.The T2W hypointense ring is strongly associated with molecular features of aggressive gliomas. This supports its potential role as a radiogenomic marker aiding early preoperative stratification in glioma, warranting validation in larger prospective cohorts.

Acute Toxic Extraocular Myositis Following Pesticide Exposure - Case Report

9

Nikolina Siljes[1], Zdravka Krivdic Dupan[1], Tanja Leventic[1]

1 Clinical hospital Osijek, Clinical hospital Osijek, Faculty of Medicine Osijek, Clinical hospital Osijek

A 53-year-old man presented with acute binocular vertical diplopia, mild periorbital pain, and left upper eyelid ptosis. Physical examination revealed restricted ocular motility in multiple directions of gaze, with the left eye positioned slightly higher than the right, and diplopia absent only in dextroversion. Laboratory testing showed mildly elevated creatine kinase. Head MRI demonstrated diffuse thickening of extraocular muscles, more pronounced on the left (bilateral medial rectus, left superior and inferior rectus), with preserved tendinous insertions, inhomogeneous T2 signal, peripheral fluid around the medial rectus, and moderate diffusion alteration. On post-contrast sequences, the affected muscles demonstrated heterogeneous enhancement, consistent with myositis. Importantly, there was no proptosis, orbital inflammation, optic nerve changes, cavernous sinus pathology, or any other intra- or extracranial abnormalities. Differential diagnoses for acute diplopia and extraocular muscle inflammation were carefully considered. Further history revealed recent accidental pesticide exposure, supporting the diagnosis of toxic extraocular myositis. Follow-up head MRI after four weeks showed marked regression of muscle thickening, normalization of T2 signal, resolution of fluid collections, and improved diffusion metrics, confirming resolving myositis without complications. This case emphasizes the characteristic MRI features and reversible course of toxic extraocular myositis, highlighting the critical role of imaging and detailed clinical history in the diagnosis and follow-up of rare orbital inflammatory conditions.

Neuroradiology In Preparation, Navigation And Follow-Up Of Stereotactic Radiosurgical Thalamotomy In Essential Tremor

10

Hrvoje Vavro[1]

1 Radiochirurgia Zagreb

Essential tremor is a debilitating disease with major impact on quality of life, especially if it doesn't respond to medical treatment. Such patients have been traditonally treated with deep brain stimulation, i.e. surgically. However, not all patients are eligible for surgical treatment, or they simply refuse to be operated on. In such cases, a non-invasive method of restraining the thalamic ventral intermediate nucleus (VIM) may be proposed.The non-invasive methods to neutralize the ventral intermediate nucleus are high intensity focused ultrasound (HIFU) and stereotactic radiosurgery (SRS).This lecture focuses on SRS thalamotomy and aims to describe patient selection, radiological planning of the procedure, as well as clinical and imaging follow-up. The emphasis is on high-resolution, high-contrast magnetic resonance images, as well as on methods of precise targeting the VIM which cannot be adequately visualised by clinically approved MRI machines. The whole process involves neurologists, neuro-oncologists, medical physicists, radiographers, radiotherapists and neuroradiologists.

First Reported Case Of Glioblastoma With Extracranial Perineural Spread And Intracranial Re-Entry Along The Mandibular Nerve

11

Igor Romcevic[1], Igor Dan[1], Bojana Vranjkovic[1], Jasmina Boban[1]

1 School of Medicine, University of Novi Sad" and "Institute of Oncology Vojvodina

Gliomas are diffusely infiltrative intra-axial tumors of the central nervous system that only rarely extend extracranially due to protective barriers such as the dura mater, basal lamina, and the absence of lymphatic drainage. Perineural dissemination of gliomas, particularly with extracranial extension, is exceedingly uncommon and often mimics the spread patterns of head and neck carcinomas. We present a unique case of a 46-year-old woman with a left temporal glioblastoma, initially diagnosed and surgically resected in February 2018, followed by standard postoperative radiotherapy (60 Gy/30 fractions) and adjuvant temozolomide chemotherapy (total dose 5670 mg). The patient remained disease-free on clinical and radiological follow-up until late 2021, when she developed facial paresthesia, tongue numbness, and nocturnal headaches. Initial neuroimaging revealed no recurrence, but subsequent studies demonstrated thickening of the dura and, later, progressive involvement of the cavernous sinus and trigeminal nerve. In January 2022, stereotactic radiosurgery was performed for cavernous sinus involvement, which was well tolerated. During the same year, an incidental right renal mass was detected and resected, with histopathology confirming clear cell renal carcinoma, WHO/ISUP grade II, stage pT3a. Despite stable disease in early follow-up, imaging in mid-2023 showed progression with extension along the trigeminal nerve into the pterygopalatine fossa and mandibular branches, accompanied by denervation atrophy of the masticatory muscles and sixth cranial nerve palsy with diplopia. A biopsy of the cavernous sinus lesion reconfirmed glioblastoma. The patient received 11 cycles of temozolomide, followed by lomustine (five cycles to date). Magnetic resonance imaging in late 2024 showed a favorable treatment response with reduction of the cisternal trigeminal component but revealed progression of the extracranial mass in the pterygopalatine fossa. Importantly, this case is distinguished by dural thickening at the level of the left temporal pole, representing perineural spread along the meningeal branch of the mandibular nerve with re-entry into the intracranial compartment—a finding not previously reported in the literature. The patient currently shows no progression of symptoms, remains functionally intact, and continues oncological treatment with regular follow-ups.

Class-Specific Maturation of the Preterm Neonatal Connectome at Term-Equivalent Age

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Preterm infant survival continues to rise, yet robust early measures of network maturation at term-equivalent age (TEA) remain scarce. We asked whether major connection classes—thalamocortical, transcallosal, and intra-hemispheric associative—show distinct maturation profiles at TEA. To delineate maturation of thalamocortical, transcallosal, and associative connectivity at term-equivalent age, quantifying mean strength, variability, asymmetry, and relationships with gestational age and sex using diffusion MRI connectomics. Hundred preterm infants (gestational age at birth 23.6–33.1 weeks) underwent 3T multi-shell diffusion MRI at TEA. A neonatal-optimised pipeline (MSMT-CSD, anatomically constrained tractography, SIFT2) was applied to a 22-region lobar parcellation. For each class we computed SIFT2-weighted mean strength and coefficient of variation (CV) for connectomal weights, tested class differences with non-parametric statistics, examined hemispheric asymmetries and caudal–rostral gradients, and related metrics to gestational age at birth (GA) using partial correlations and covariate-adjusted models (sex, post-menstrual age). Mean connectivity differed across classes (Kruskal–Wallis pRight thalamocortical connectivity (p=0.0005) and Right>Left associative connectivity. At TEA, commissural pathways are strongest yet highly heterogeneous, thalamocortical projections are uniformly present but weaker, and association networks show GA-related stabilisation of dispersion rather than mean strength. Class-based connectome metrics—including variability, asymmetry, and spatial gradients—offer developmentally interpretable candidates for early risk stratification in preterm infants.

Imaging Of Intraorbital Foreign Bodies: What Radiologist Should Know?

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Intraorbital foreign bodies represent a medical emergency and are a relatively common cause of orbital trauma. Radiological evaluation with the aim of rapid detection and accurate localization of the foreign body is essential to determine the optimal treatment. Aim of this presentation is to give the pictorial examples and radiological features of the most common types of intraorbital foreign bodies, such as metal, glass, stone, wood and plastic. CT is considered the gold standard for imaging of intraorbital foreign bodies. It is safe to use with metallic foreign bodies and the modality of choice for diagnosing orbital wall fractures and orbitocranial extension of injuries. MRI is not recommended for initial evaluation of intraorbital foreign bodies due to the magnetic properties of metallic foreign bodies, but is useful when there is a negative CT finding and a high clinical suspicion. CT can detect a whole range of different intraorbital foreign bodies. It has a high sensitivity to display even very small foreign metal bodies and is accurate in detecting glass and stone foreign bodies. On the other hand, the detection of plastic and wooden foreign bodies is variable. MRI is not the first method of choice for IOFB detection because it lacks sensitivity and specificity in foreign body detection and may be dangerous in case of ferromagnetic foreign bodies. CT is considered the gold standard for radiological evaluation when an intraorbital foreign body is suspected. Radiological appearance of various intraorbital foreign bodies is highly variable, and knowledge of their radiological presentation is necessary to make the accurate diagnosis.