POSTERS NEUROLOGY

1. PROSPECTIVE ASSESSMENT OF RISK FACTORS IN CHILDREN WITH ARTERIAL ISCHEMIC STROKE (AIS)

Mirjana Perković Benedik, Tomaž Podnar, Zvonka Rener Primec, Marjan Zaletel, Bojana Žvan

University Medical Centre Ljubljana, Zaloška 2, Sl-1252 Ljubljana, Slovenia

e-mail: marjan.zaletel@kclj.si

Backgrounds and aims: The Aim of the study was to determine risk factors in children presenting with first episode of arterial ischemic stroke (AIS).

Patients and methods: All children evaluated at the Department of Paediatrics, University Medical Centre Ljubljana, Slovenia (which is single referral centre in the country for children with stroke), from January 2005 to January 2012 due to first episode of AIS were included. All children were evaluated according the same diagnostic protocol, including also contrast TCD with Valsalva maneuver, which enables us to recognise all known risk factors for AIS.

Results: Altogether 34 children with AIS were evaluated. Their mean age was 10.15 ± 5.35 years, 18 girls and 16 boys. Arteriopathies were identified in 11 of 33 (33,3%) children. Five of 34 (14,7%) children had cardioembolic stroke. Seven children of 34 (20,6%) had prothrombotic state: 2 children with arteriopathies, 4 children had also patent foramen ovale and one child had a prothrombotic state as a single risk factor. Six children (17,6%) had only patent foramen ovale. In 4 of 34 (11,7%) children, no risk factors were found and 3 children had other rare causes of stroke.

Conclusions: Artheriopathies were the commonest cause of stroke in our study. According to our study, it seems that right-to-left shunt through patent foramen ovale might be a risk factor for AIS in children.

2. NON-INVASIVE ASSESSMENT OF VASCULAR PHYSIOLOGY IN PATIENTS WITH DEMENTIA

Irena Martinić Popović, Arijana Lovrenčić-Huzjan, Darja Šodec Šimićević, Marijana Bosnar Puretić, Vida Demarin

University Hospital Centre „Sestre milosrdnice“, Department of Neurology, Vinogradska 29, 10000 Zagreb, Croatia

e-mail: irene@mail.inet.hr

Introduction/Objectives: Vascular risk factors (VRFs) are recognized as important contributors in the pathogenesis of eithr vascular (VAD) or Alzheimer's dementia (AD) and also in mild cognitive impairement (MCI) as a preclinical stage. The same VRFs influence arterial mechanics and consequently cerebrovascular perfusion, thus predisposing to evolution of cerebral vascular incidents. We aimed to further investigate the determinants of vascular function in patients with VAD, AD and MCI, using non-invasive neurosonology techniques.

Participants, Materials/Methods: In all, 15 patients diagnosed with AD, 15 patients with VAD and 20 patients diagnosed with MCI were recruited. E-tracking was performed using Aloka ProSound Alpha 10 with 13 MHz linear probe. Paremeters of arterial stiffness (beta stiffnes index, augmentation index [AI] and pulse wave velocity [PWV]) were ana-

lysed, and IMT was measured. Inter-group comparison was performed.

Results: When compared to patients with VAD, patients with AD showed statistically significant difference ($p<0,05$) in the mean beta stiffness (9,14 ±4,3) and AI (6,4±8,3), but not in the mean PWV and IMT. Patients with MCI also differ significantly in the AI (5,6±6,5) and IMT (0,9±0,25) when compared to patients with VAD, but not with AD patients. No significant differences were found among groups regarding age and VRFs profile, except for diabetes which was present more often in VAD patients.

Conclusions: Our results pointed towards some differences in vascular function among patients diagnosed with AD, VAD and with subtle cognitive decline. We propose the non-invasive assessment of vascular function parametes to be performed as a part of clinical evaluation and monitoring in patients with cognitive decline.

3. ULTRASONOGRAPHY OF THE OPTIC NERVE SHEATH IN BRAIN DEATH

Arijana Lovrencic-Huzjan, Darja Sodec Simicevic, Irena Martinic Popovic, Marijana Bosnar Puretic, Vlasta Vukovic Cvetkovic, Sasa Gopcevic, Marinko Vucic, Bojan Rode, Vida Demarin

University Hospital Centre „Sestre milosrdnice“, Department of Neurology, Vinogradska 29, 10000 Zagreb, Croatia
e-mail: arijana.lovrencic-huzjan@zg.htnet.hr

Introduction/Objectives: Evaluation of optic nerve sheath by means of optic nerve ultrasonography (ONUS) is a reliable tool for assessment of patients with increased intracranial pressure. The aim of this study was to present the usefulness of optic nerve sheath ultrasonography in patients with brain death.

Participants, Materials/Methods: Ten patients with brain death as a result of traumatic or non-traumatic causes were evaluated by ONUS. Optic nerve sheath diameter (ONSD) was measured with a 12 MHz linear ultrasound probe (Terason T3000, Teratech Corporation, USA). The probe was adjusted to give a suitable angle for displaying the entry of the optic nerve into the globe, at the depth of 3 mm behind the globe. For each optic nerve four measurements were made, twice in transversal and twice in the sagittal plane, by rotating the probe clockwise. Mean ONSD for brain death patients were compared with mean ONSD of 17 healthy controls.

Results: Ten individuals (7 males) with confirmed brain death (5 due to neurotrauma, 2 due to subarachnoid hemorrhage, 2 as a result of ischemic strokes and one of parenchymal hemorrhage), were evaluated. On the left mean ONSD was $0,71\pm0.06$ cm on transversal plane and 0.72 ± 0.04 cm on sagittal plane. On the right mean ONSD was 0.73 ± 0.05 cm on transversal plane and 0.73 ± 0.06 on sagittal plane. In controls left mean ONSD was $0,51\pm0.05$ cm on transversal plane and 0.55 ± 0.06 cm on sagittal plane. On the right mean ONSD was 0.52 ± 0.05 cm on transversal plane and 0.54 ± 0.07 on sagittal plane. Mean ONSD in brain death was 0.72 ± 0.05cm and 0.53 ± 0.06 cm in controls ($p<0.01$).

Conclusions: ONSD may be useful in distinguishing brain death persons from healthy controls.

4. BENIGN ANGIOPATHY OF THE CENTRAL NERVOUS SYSTEM OR REVERSIBLE CEREBRAL VASOCONSTRICTION SYNDROME – CASE REPORT

Mira Ivanković, Marina Drobac

General Hospital Dubrovnik, Neurology Department, R. Mišetića bb, Dubrovnik, Croatia
e-mail: mirai@bolnica-du.hr

Introduction: Benign angiopathy of the central nervous system (BACNS) is a subset of primary angiitis of the central nervous system characterized by „benign“ course. It means that changes of cerebral vessels are reversible after treatment with corticosteroids and calcium channel blockers, so these abnormalities are believed to reflect vasospasm rather than true vasculitis. The diagnosis is made on the basis of clinical presentation, brain magnetic resonance imaging and cerebral angiography.

Participants: We present a young man with acute onset of headache and neurological impairement secondary to ischemic stroke with intracerebral and subarachnoid hemorrhage (SAH) in a setting of vasoconstriction and high blood pressure.

Results: MRI showed hemorrhagic lesion of the brain stem with discrete SAH and extensive left ischaemic lesion. CSF analysis was normal, other systemic diseases associated with cerebral involvement were excluded with immunologic and serologic tests and cerebral angiography showed characteristic findings of diffuse vasculitis. He was treated with corticosteroids and calcium channel blockers with good response and normal control MRA.

Conclusion: Intracerebral and subarachnoid hemorrhage is a rare finding in the setting of BACNS and may represent a

new feature in some patients with BACNS. It is very important to recognize and distinguish benign angiopathy from the more aggressive form of the central nervous system vasculitis because treatement and response vary between these two entities.

5. PRELIMINARY REPORT OF HYPERTENSION AND TYPE 2 DIABETES MELLITUS INFLUENCE ON THE CEREBROVASCULAR REACTIVITY IN DIABETICS WITH RETINOPATHY

M. Ivankovic[1], M. Radman[2], A. Gverović-Antunica[3], S. Tesanović[4], G. Trgo[2], V. Demarin[5];

[1]Neurology department, General hospital Dubrovnik, Dubrovnik, Croatia, [2]Department of Internal Medicine, Clinical Hospital Centre Split, Split, Croatia, [3]Oftalmology department, General hospital Dubrovnik, Dubrovnik, Croatia, [4]Endocrinology department, General hospital Dubrovnik, Dubrovnik,Croatia, [5]Neurology department, Clinical Hospital Centre"Sisters of Mercy", Zagreb, Croatia.

Background and aims: Cerebrovascular reactivity (CVR) provides information on the intracerebral arterioles capacity to react to vasodilatory stimuli. This study aims to investigate the influence of hypertension and type 2 diabetes mellitus on cerebrovascular reactivity in diabetics with retinopathy.

Materials and methods: Subjects were classified into four groups each comprised of 10 women: diabetic retinopathy with hypertension, diabetic retinopathy without hypertension, hypertension without diabetes mellitus and healthy controls without hypertension and diabetes mellitus. Blood samples were taken after overnight fasting ant laboratory parameters- HbA1C, C-reactive protein, cholesterol, triglyceride, HDL and LDL cholesterol were determined. Duration of hypertension and diabetes was more than 10 years. Patients were od diet, oral or insulin therapy. Evaluation of extracranial blood vessels was performed by the Color Doppler Flow imaging and Power Doppler Imaging methods on an ATL HDI 3000, 7,5 linear probe;and transcranial Doppler ultrasound examination was performed on a MultiDop L2 with a 2 MHz hand-held pulsed wave Doppler probe in supine position after 5 minute bed rest. Values of mean blood velocity in the middle cerebral artery were observed in all groups- in basal state and after breath holding (30 seconds). CVR was expressed as a difference between those two values.

Results: Continuous variables distributions were tested with Shapiro-Wilk test, homogenity of variances with Levene's test. Comparison of the CVR parameters was performed using ANOVA test. In group with diabetic retinopathy and hypertension the increase in CVR was 8,6 cm/s (±; 2,39), in the hypertension group was 14,8 cm/s (±;2,51) and in diabetics with retinopathy and without hypertension was 9,6 cm/s (±;2,92).

Conclusion: Diabetes mellitus influences more on CVR than hypertension.

6. THE PHENOMENOLOGY OF THE BEHAVIORAL DISTURBANCES IN THE ALZHEIMER'S DEMENTIA

Ivan Barbov, Snezana Lazarova

Clinic for Neurology, Skopje, Macedonia

The aim of this research work is to analyze the Behavioural and Psychological Symptoms of dementia-BPSD, respectively the neuropsychiatric symptoms of Alzheimer's disease.

This study aimed to establish the standard pattern of a clinical-psychological estimate of the Behavioural and Psychological Symptoms of dementia-BPSD and to describe the phenomenology of BPSD. The study was a prospective one, and it included a groups of 30 patients diagnosed as Alzheimer's disease (by ICD 10), treated in the Clinic for neurology Skopje.

The following instruments for investigation were used: Standardized clinical interview, the Behavioural Pathology in Alzheimer's disease Rating Scale (BEHAVE-AD), the Cohen-Mansfield Agitation Inventory (CMAI), and None standardized sociological-demographic questionnaire.

The obtained results have shown that the average age is higher in patients with Alzheimer's disease and more rapid cognitive decline and more severe cognitive impairment are present in these patients.

Paranoid and Delusional Ideation are more common in patients with Alzheimer's and the activity disturbances are increased by the severity of the disease.

From the beginning of the disease the average time is three years. The patients who came on examination are in the high percentage in the moderate and severe stage.

The Behavioural and Psychological Symptoms of dementia are present in all patients. This is in accordance with data from the literature where it is said that in epidemiologic examples the frequency of the Behavioural and Psychological Symptoms of dementia is lower than in clinical samples because care is sought when neuropsychiatric symptoms emerge, but unfortunately in our examination more than it, when they exceed the tolerance of the family.

7. NEUROLOGICAL COMPLICATIONS OF CAROTID REVASCULARISATION

Snezana Lazarova, Ivan Barbov

Clinic for Neurology, Skopje, Macedonia

Carotid endarterectomy (CEA) is an effective treatment for patients with recently symptomatic severe carotid stenosis and in selected patients with symptomatic moderate carotid stenosis. Carotid artery angioplasty and stenting (CAS) is emerging as an alternative to CEA, and randomised controlled trials suggest comparable efficacy to CEA in prevention of non-perioperative stroke. Neurovascular complications can result from both procedures, usually from thromboembolism from the operated vessel, cerebral hypoperfusion causing ischaemia and, rarely, intracerebral haemorrhage. The overall incidence of perioperative strokes complicating CEA and CAS is approximately 4% and 6%, respectively, and represents a devastating outcome that the procedure was designed to prevent. Other neurological sequelae complicating carotid revascularisation include cerebral hyperperfusion syndrome, cranial and peripheral nerve injuries, and contrast encephalopathy in patients undergoing CAS.

We report a 68 years old man with contrast encephalopathy (clinical presenting with left hemiparesis) after carotid stenting.

8. ELECTROPHYSIOLOGICAL EVALUATION IN FREY'S SYNDROME

Gencer Genc[1], Yalcin Bayram[2]

[1]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey
[2]Maresal Cakmak Military Hospital, Department of Plastic Surgery, Erzurum, Turkey
Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Background: Frey's syndrome which is also known as auriculotemporal syndrom or gustatory sweeting is a rare neurological disorder that results from injury or surgery near the parotid glands. Generally accepted pathophysiologic theory for Frey's syndrome is that the free parasympathetic nerve endings in parotid region after superficial parotidectomy regenerate abnormally to the sweat glands in the skin and subcutaneous blood vessels. Thus, rash due to vasodilation and sweating in the areas affected by saliva stimulation occur. We aimed to present the electrophysiological evaluation of a case with Frey's syndrome.

Case Report: A 22-year-old male patient was admitted to the neurology clinic in our hospital with the complaints of sweating, flushing and discomfort in the parotid region during chewing. Since his examination revealed depression deformity which occurred after the right superficial parotidectomy 2 years ago, he was transferred to the plastic surgery clinic and dermofat graft interposition was planned. His facial nerve electroneurography, electromyography, blink reflex revealed no abnormality. Sweating areas was determined by starch-iodine test. In addition, the boundaries of depression were determined and marked. Then the patient was operated. At a follow-up visit 3 months later, it was seen that Frey's syndrome completely recovered, and mild facial depression had been continued. This was thought to be due to partial volume loss in dermofat graft. A total of 40 cc fat injection to the superficial and deep regions was administered under general anesthesia as a second session. At a follow-up visit 6 months later, it was observed that the facial asymmetry completely recovered.

Conclusion: As a result of electrophysiological studies, we did not observe any pathology in our case. This may be related to the association of Frey's syndrome with the parasympathetic innervation of the auriculotemporal nerve. The electrophysiological examination of the facial nerve in Frey's syndrome is limited. Although the electrophysiological tests investigating the autonomic nervous system may help to demonstrate this situation, specific electrophysiological tests are needed to show the autonomic nervous system involvement at the level which the damage occurs due to the cross-regeneration between parasympathetic and sympathetic nerve fibers. Routine examinations, such as sympathetic skin responses cannot show the autonomic nervous system involvement at this level.

9. HEAVY SPORT TRAINING INDUCED PERONEAL NERVE PALSY

Gencer Genc[1], Kubilay Karabacak[2], Abdurrahman Bakir[3]

[1]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey
[2]Maresal Cakmak Military Hospital, Department of Cardiovascular Surgery, Erzurum, Turkey
[3]Maresal Cakmak Military Hospital, Department of Neurosurgery, Erzurum, Turkey
Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Background: Peroneal nerve entrapment at the fibular head is the most common neuropathy in the lower limbs. It can cause sensory and motor symptoms and functional pro-

blems. Contributing factors are stay for a long time under anesthesia, chronic diseases that require to stay in bed, excessive weight loss, working by squatting for a long time (strawberry pickers, upholstery workers etc.). We aimed to present a case of heavy sport training induced peroneal palsy caused by prolonged squatting and to emphasize the optimization of training conditions.

Case Report: A 20-year-old male patient was admitted to the cardiovascular clinic in our hospital with the complaints of numbness and weakness in his foot. Since his examination revealed foot drop, he was transferred to the neurology clinic. Peroneal nerve entrapment was diagnosed in a 20-year-old male patient. The patient had a history of 2 hours squatting in heavy sport training. The diagnose was established by clinical and electrophysiological studies. He had a postural-induced entrapment. Initially, the patient was treated conservatively with a drop-foot splint and vitamin B. The patient responded very well to treatment.

Conclusion: Thin and young people become more sensitive to direct pressure in terms of entrapment neuropathies. Our patient was young and thin. On the other hand prolonged squatting facilitates the peroneal nerve palsy. The sport and training positions that may produce peroneal nerve palsy should be improved because of the potantial permanent deficits.

10. EVALUATION OF HEAVY TRAINING INDUCED REFLEX SYMPATHETIC DYSTROPHY CASES

Kubilay Karabacak[1], Gencer Genc[2]

[1]Maresal Cakmak Military Hospital, Department of Cardiovascular Surgery, Erzurum, Turkey
[2]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey
Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Introduction: Reflex Sympathetic Dystrophy (RSD) mostly arises from trauma and it is characterized by pain, swelling and autonomic dysfunction in the extremities. RSD resembles the clinical picture of the axillary vein thrombosis which is also named as effort thrombosis (Paget Schoretter Syndrome), but the treatments vary. Both diseases may occur due to trauma following heavy physical activity in soldiers.

Materials and Methods: Between January 2010 and February 2012, a total of 14 patients who were admitted to Cardiovascular Surgery and Neurology clinics with the complaints of weakness, pain, swelling in the upper extremities following heavy training and sports activities were analyzed retrospectively.

Results: The mean age was 21 ± 1.6. Neurological examination of patients were normal. 5 patients had right upper extremity involvement whereas 9 patients had the left upper extremity involvement. 3-phase bone scintigraphy revealed reflex sympathetic dystrophy. For differential diagnosis of upper extremity deep venous thrombosis, upper extremity venous Doppler U.S. examination was done in all patients. One patient was diagnosed as venous thrombosis and treated with anteagregan.

Conclusion: Early diagnosis and treament of RSD has a great importance because of developing atrophy and contractures in later stages. Upper extremity deep vein thrombosis may lead to pulmonary thromboembolism in case of delay in the diagnosis. Therefore it should be considered that life-threatening vascular pathologies like pulmonary thromboembolism may occur and vascular pathologies should be taken into account in terms of the differential diagnosis of RSD.

11. STATUS EPILEPTICUS IN A CASE OF PSYCHIATRIC DISORDER

Gencer Genc[1], Cemal Onur Noyan[2]

[1]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey

[2]Gumussuyu Military Hospital, Department of Psychiatry, Istanbul, Turkey

Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Introduction: Causes of fainting spells may be neurological, psychiatric or cardiac origin. It's very important to put forward the cause of the event in patients with fainting spells in terms of treatment approaches. We present a case with status epilepticus who had been previously diagnosed as conversion disorder.

Case Report: A 21-year old male was brought to the emergency room because of the fainting spell. In his medical history it was learnt that he had fainting spells in stressful and troubled conditions, and diagnosed as conversion disorder previously. One month before his admission he had been hospitalised in a psychiatry service of another hospital and discharged with selective serotinin reuptake inhibitor therapy. EEG records were taken immediately after the fainting spell but his generalized tonic-clonic epileptic seizure was observed during EEG recording. One minute after this seizure, third seizure occured. He was diagnosed as status epilepticus because of impaired consciousness, and taken to the intensive care unit. He was treated with intravenous diaze-

pam and phenytoin. Seizure control was attained and valproate treatment was started. One day later, marked clinical improvement was observed. Then he was discharged and a follow-up appointment was made.

Conclusion: Although the conversion reactions are so much among the patients due to the desire of getting rid of stress and difficult conditions; the doctors should not be prejudiced against the patients because of the potential life-threatening consequences and must perform all necessary examinations.

12. FALSE INTERPRETATION OF DENERVATION POTENTIALS IN A PATIENT WITH MOTOR NEURON DISEASE

Semai Bek[1], Gencer Genc[2]

[1]Gulhane Military Medical Academy, Department of Neurology, Ankara, Turkey

[2]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey

Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490;
E-mail: drgencergenc@yahoo.com

Introduction: Although EEG is intended to record cerebral activity, it also records electrical activities arising from sites other than the brain. Although the EEG is almost a hundred years old in clinical neurology, it takes considerable experience to correctly interpret EEGs clinically. A patient who was misdiagnosed with epilepsy, assumed to have frequent bitemporal sharp waves on her EEG, and placed on chronic treatment with an antiepileptic medication is presented in this report.

Case Report: This is a 59 year old right-handed female with a history of anxiety, dyslipidemia and migraines who presents for further evaluation of difficulty speaking, swallowing and questionable staring spells of subacute onset. She is unaware of these spells and denies episodes associated with loss of consciousness. No associated automatisms or other behavioral changes are described by witnesses at her work.

No typical staring episodes were recorded during a routine outpatient EEG at an outside hospital. Notably, the study was reported as showing "frequent bihemispheric temporal sharp transients". She was subsequently diagnosed with epilepsy and placed on lamotrigine 100mg daily. No clear benefit from lamotrigine was reported with regards to the patient's staring episodes, and her swallowing and speech difficulties also persisted.

During 4 days of continuous video EEG monitoring off lamotrigine, interictal EEG was within normal limits, and no epileptiform discharges or seizures were recorded. However, note was made of intermittent muscle artifact seen involving both temporal chains of electrodes with a frequency ranging from 4-5 times in a second to once every 4-5 seconds, appearing as spicules on the right and/or left side, often isolated but rarely in runs with an amplitude of 10 to 50 microvolts, which were symmetric most times and present during both awake and sleep recordings. General Neurology evaluation was requested with a provisional diagnosis of motor neuron disease. The results of this evaluation including physical examination, cervical spine MRI and EMG findings were consistent with the diagnosis of bulbar onset amyotrophic lateral sclerosis (ALS).

Conclusion: EEG recording and misinterpretation of spontaneous muscle activity in a patient with ALS has not been presented previously. This case report indicates that semiperiodic muscle artifacts due to a primary neuromuscular disorder, and may lead the untrained clinician to an erroneous diagnosis of epilepsy. One should be reminded of that a complete examination and detailed history is always more important than any technical procedure since the days of Hippocrates.

13. THE CHOICE OF CONVENTIONAL AND NEW ANTIEPILEPTIC DRUGS IN THE TREATMENT OF EPILEPSY

Ozgur Arslan[1], Hakan Akgun[1], Gencer Genc[2], Zeki Gokcil[3], Zeki Odabasi[3]

[1]Etimesgut Military Hospital, Department of Neurology, Ankara, Turkey

[2]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey

[3]Gulhane Military Medical Academy, Department of Neurology, Ankara, Turkey

Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey; Phone: +905325922490;
E-mail: drgencergenc@yahoo.com

Objection: Recent studies showed that within the last two decades, the use of new antiepileptic drugs is increasing instead of the conventional antiepileptic drugs which are used for many years in the treatment of epilepsy. The aim of our study is to evaluate if the results of these previous trials reflect the clinical practice.

Materials and Methods: The patients followed-up with a diagnosis of epilepsy in neurology clinics between 2007-2012 were evaluated retrospectively.

Results: The data of total 1126 patients was assessed. 624

(55%) patients were treated with a single (monotherapy) antiepileptic drug, 449 (40%) patients were treated with polytherapy, and 53 patients (5%) were taking no medication. 916 (81%) of the patients on therapy were using conventional therapy, 447 (40%) of the patients on therapy were using new antiepileptic drugs. 887 patients (79%) on conventional antiepileptic therapy were using valproic acid and/or carbamazepine. 523 (84%) of 624 patients on monotherapy were using a conventional antiepileptic drug, whereas 101 (16%) of them were using a new antiepileptic drug.

Conclusion: In order to reduce the side effects of conventional antiepileptic drugs and provide an effective treatment of epilepsy, several new antiepileptic drugs have been introduced. A study by Bek and his colleagues revealed that 14% of patients on conventional antiepileptic therapy between 2000-2007, were using a new antiepileptic drug. According to our data, between 2007-2012 40% of the patients on antiepileptic therapy were using a new antiepileptic drug. Although the increase in the use of new antiepileptic drugs has been observed in our study, the conventional antiepileptic drugs are still the first choice in clinical practice.

14. EVALUATION OF AUTONOMIC NERVOUS SYSTEM IN EPILEPSY PATIENTS

Elif Tunc[1], Gencer Genc[2] ,

[1]Maresal Cakmak Military Hospital, Department of Cardiology, Erzurum, Turkey

[2]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey

Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey

Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Introduction: Tilt test was used to demonstrate the autonomic nervous system (ANS) involvement in several studies. ANS involvement in epilepsy patients is shown in patients with partial epilepsy. We aimed to investigate the involvement of the ANS in patients admitting with the fainting spells.

Materials and Methods: The records of the patients admitting with the fainting spells to the Neurology and Cardiology clinics of our hospital were evaluated retrospectively in terms of Tilt-table test.

Results: The diagnosis of the patients who were admitted to both Cardiology and Neurology outpatient departments with the complaints of fainting spells were definite epilepsy in 32% of patients, nonepileptic psychogenic seizures in 49% of patients, syncope in 19% of the patients. Tilt table test was positive in 32% of the patients diagnosed with epilepsy.

Conclusion: Our results show that Tilt table positivity is higher than the expected in epilepsy patients. This situation indicates the existence of ANS involvement in patients with epilepsy. On the other hand this may be also associated with SUDEP and cardiac pathologies in epilepsy.

15. EEG ABNORMALITIES IN PATIENTS WITH FAINTING SPELLS

Gencer Genc[1], Cemal Onur Noyan[2]

[1]Maresal Cakmak Military Hospital, Department of Neurology, Erzurum, Turkey

[2]Gumussuyu Military Hospital, Department of Psychiatry, Istanbul, Turkey

Maresal Cakmak Military Hospital, Department of Neurology, 25070, Erzurum, Turkey

Phone: +905325922490; E-mail: drgencergenc@yahoo.com

Introduction: In order to interpret EEG correctly, a detailed medical history of the patient is very important. Inexperienced physicians on EEG can start antiepileptic treatment according to the some EEG abnormalities without paying attention to the medical history of the patients. We aimed to investigate the EEG abnormalities in patients admitted with fainting spells.

Materials and Methods: The EEG records of the patients admitted with the fainting spells were evaluated retrospectively.

Results: The interictal EEG of the patients admitted with the fainting spells whose medical history was compatible with epilepsy was normal in 32.6%. Abnormal generalized findings in 43.7%, abnormal focal findings in 23.7% were observed. The abnormality rate in EEG of the patients with medical history of syncope or conversion disorder was 8.7%.

Conclusion: Our results indicate that EEG abnormalities are significant when they correlated with clinical findings. We think that a detailed history from those who witnessed the incident is always more important than any technical procedures in the diagnosis of epilepsy.

16. SUDDEN HEMIPARESIS AND SPEECH DISORDEDS – A LOOK BEYOND STROKE

Vizjak K., Menih M.

Department of Neurology, University Clinical Centre Maribor, Slovenia

E-mail: alenka.vizjak@mf.uni-lj.si

This 45- year old man was admitted for sudden right hemiparesis and speech disorders, with no sensory or cranial nerves impairment. A month before he was admitted, he suffered recurrent deep venous thrombosis of the left lower extremity, in the past also recurrent aseptic meningitis. He has also been diagnosed with ulcus of the scrotum, histological report of bioptic material showed signs of nonspecific neutrophilic vasculitis.

Brain MRI showed hyperintensive central pontine lesion with surrounding oedema. He was treated with intravenous corticosteroids for 10 days, then with metronidazole and cephalosporin. Repeated MRI after 8 weeks showed significant regression of the lesion.

Neurological symptoms in patient completely resolved within 8 weeks of hospitalisation, MRI performed a month later showed further regression of pontine lesion.

Behcet's syndrome is a chronic relapsing vascular inflammatory disease of unknown etiology with possible involvement of the central nervous system. Neurological manifestations in Behçet's disease represent between 4 to 49% of systemic manifestations and remain, in the long term, the leading cause of morbidity and mortality.

This case demonstrates that Behcet's disease should be considered among diseases with CNS involvement with symptoms and signs that mimic stroke.

17. SPONTANEOUS LOBAR INTRACEREBRAL HEMORRHAGE DUE TO BRAIN ARTERIOVENOUS MALFORMATION

Petra Miklavčič*, Alenka Vittori**, M Benedičič**, V Švigelj*, V Zgonc*, FF Bajrović*, R Bošnjak**

University Medical Centre Ljubljana , Institute of Pathofhysiology

*Department of Neurology, **Department of Neurosurgery,
E-mail: petra.miklavcic@kclj.si

Background: The lobar localization of spontaneous (nontraumatic) intracerebral hemorrhage (ICH) occurs in one third of all cases. In young population, important causes are vascular deformations: arteriovenous malformation (AVM), cavernous malformation, venous angioma or dural arteriovenous fistula. Herein we present three patients under the age of 35 with intracerebral hemorrhage due to AVM.

Case presentation: First case is a 32-year-old right-handed male who suddenly drove into a ditch. The neurological examination revealed decreased consciousness, and brain CT revealed 9x4x3,5 cm frontotemporal large ICH in left hemisphere with oedema, hematocephalus in left lateral and 3rd ventricle and herniation. The CT angiography and DSA revealed big AVM from ACM. Immediate neurosurgical haematoma evacuation and AVM exclusion was performed.

The second case is a 24-year-old male who felt nausea and had unfamiliar sensation. The neurological evaluation revealed dilated right pupil, still responsive, motor aphasia and right-sided hemiplegia with right plantar response in extension. Brain CT revealed 5x2 cm large frontal ICH in left hemisphere with hydrocephalus and hematocephalus in left lateral ventricle and diffuse brain oedema. Urgent CT angiography and DSA showed AVM in dorsal side of haematoma. Neurosurgical haematoma evacuation and AVM exclusion was performed, and blood clot from the ventricle was removed by intraventricular fibrinolysis with rtPA.

The third patient is a 19-year-old girl who was found lying on the pavement and had a right-sided limb weakness. The neurological examination disclosed motor dysphasia, dysarthria and increased muscle tone in right extremities. The right plantar response was in extension too. Brain CT revealed 8x4x2 cm large frontoparietal ICH in left hemisphere with hematocephalus and brain edema. CTA and DSA disclosed a complex venous angioma in combination with AVF. The haematoma was near-totally evacuated and the feeder of AVF, originated from ACA2, was clipped. Hematocephalus of the left lateral ventricle was left with no treatment and resorbed spontaneously. AVM from ACI. Immediate neurosurgical evacuation of frontal haematoma and exclusion of AVM was performed.

Conclusions: Our cases indicate that in young patients with lobar ICH high suspicion of secondary cause is needed and therefore early radiological diagnostic and neurosurgical haematoma evacuation should be performed.

18. A NON-HODGKIN LYMPHOMA PRESENTING AS PROGRESSIVE BULBAR PALSY

Podjaveršek B., Jeromel M., Bajrović F. F., Resman-Gašpešič A.

University Medical Centre Ljubljana, Institute of Pathophysiology, Medical Faculty, University of Ljubljana, Zaloška street 2, Ljubljana 1000, Slovenia

Department of Neurology, Department of Neuroradiology

Phone: +3861522500

E-mail: bredapo@gmail.com

Background: A malignant lymphoma is a cancer of lymphocytes. Classically it is divided into Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL). Lymphomas represent approximately 5% of all malignant neoplasms of the head and neck and may involve nodal and extranodal sites. The most common type in extranodal location is diffuse large B-cell NHL. Here we report on a non-Hodgkin lymphoma presenting as progressive bulbar palsy.

Case presentation: 58 years old right-handed male patient presented at outpatient clinic on January 2012 with a history of progressive dysphagia, dysphonia and headache which began four months earlier. The first symptom was a throbbing headache located in the left temporal area, which worsened while lying supine. One moth later the voice started to be hoarse and he began to have difficulties with swallowing. Neurological examination revealed peripheral lesion of lower cranial neurons IX., X., XI. and XII..

Under the left mastoid bone was a nonelastic, 2x2 centimeters large palpable mass. Peripheral lymph nodes were not enlarged. In year 2004 he was treated for marginal B-cell NHL and had regular check ups at oncologist. MRI showed a large infiltrative tumor in the craniocervical junction that invaded left jugular vein, sternocleidomastoid muscle and lower cranial nerves (IX.,X. and XI.). The sonographic guided fine needle biopsy revealed large B-cell NHL which represented a transformation of an indolent marginal B-cell NHL into a very aggressive large B-cell NHL. He received chemotherapeutic treatment with a standard regimen of R-CHOP (rituximab, cyclophosphamide, hydoxydaunorubicin (doxorubicin), oncovin (vincristine) and prednisolone) resulting in headache relief and marked reduction of the size of the tumor. He has gastrostomy due to remaining dysphagia .

Conclusion: Our case implies that in differential diagnosis of lower cranial nerves palsies also lymohoma should be considered.

19. SUCCESSFUL TREATMENT OF ACUTE STROKE DUE TO CAROTID ARTERY DISSECTION WITH ENDOVASCULAR STENT PLACEMENT FOLLOWING INTRAVENOUS THROMBOLYSIS - A CASE REPORT

N. Zorko MD*, A. Resman-Gašperšič MD*, Z. Miloševič MD**, V. Zgonc MD*, F.F. Bajrović MD, PhD*

University Medical Centre Ljubljana, Institute of Pathophysiology, Medical Faculty, University of Ljubljana, Zaloška street 2, Ljubljana 1000, Slovenia

*Department of Neurology, **Department of Neuroradiology

Phone: +38615228956; Email: nikazorko@gmail.com

Background: Cervical artery dissection is increasingly recognized as a cause of transient ischemic attacks and stroke, especially in young patients. The underlying mechanism is either thrombemboli formation or haemodynamic insufficiency due to severe stenosis / occlusion at the dissection site. Acute stroke treatment in these patients is still debated. Here we present a case of combined treatment of acute stroke due to traumatic dissection of left carotid artery with intravenous thrombolysis and endovascular mechanical recanalisation.

Case description: 32-year old, previously healthy man, presented to the Neurology department of University medical centre Ljubljana an hour and a half after developing right hand weakness, right sided hemisensory deficit and severe motor dysphasia. Initial neuroradiological assessment with a CT showed a small left parietal lobe ischemia, while CT perfusion and CT angiography displayed a large hypoperfusion due to left internal carotid artery dissection, causing a near occlusion.

The patient was treated first with intravenous thrombolysis and subsequently by endovascular carotid artery stent placement. The patient's condition improved significantly after treatment; although control CT scan after 24 hours showed an acute cerebral infarction in the left parietal lobe. Only mild motor dysphasia and hypaesthesia of the right side remained at discharge, seven days after admission.

Conclusion: With the outcome of this case we concur with previously published small series and case reports that combination of intravenous thrombolysis and endovascular stent placement is a safe and efficacious treatment method of acute stroke due to cervical artery dissection. However, further prospective randomized trials for the assessment of the optimal management and the role of combined treatment in such cases are needed.

20. FIRST EXPERIENCE WITH FAMILIAR CREUTZFELDT-JAKOB DISEASE (E200K) IN SERBIA

Nikola Veselinović, Jasna Zidverc-Trajković, Milija Mijajlović, Aleksandra Pavlović, Valerija Dobričić, Nadežda Šternić

Neurology Clinic, Clinical Center of Serbia and School of Medicine University of Belgrade, Serbia, Dr Subotica 6, 11000 Belgrade, Serbia

Creutzfeldt-Jakob disease (CJD) is a rare and fatal neurodegeneration associated with conformational alteration of ubiquitous prion protein (PrP). The neuropathogenic effects of PrP are strikingly similar among sporadic, acquired and genetic forms of the disease, reflecting a unique biological pattern. Familial variants of CJD all arise from mutations in prion protein gene (PRPN) and represent approximately 10-15% of all prion diseases.

We report a case of 56 year old male diagnosed with probable CJD who was a carrier of codon 200 mutations in PRPN. He suffered subacute cognitive deterioration accompanied by ataxia, myoclonus and visual disturbances. Electroencephalography demonstrated specific pseudo-periodic complexes and MR imaging revealed characteristic cortical and basal ganglia lesions.

This is the first documented case of probable CJD with identifiable PRPN mutation in Serbia. Clinical and genetic characteristics of the presented case are discussed.

21. A NEW MISSENSE MUTATION WITHIN EXON 3 OF NOTCH3 GENE IN A STROKE PATIENT

Tamara Švabić[1], Aleksandra M. Pavlović[1], Vesna Lačković[2], Ivana Novaković[1], Valerija Dobričić[1], Duško Kozić[3], Nadežda Čovičković-Šternić[1]

[1] Neurology Clinic, Faculty of Medicine, University of Belgrade, Belgrade, Serbia.

[2] Institute of Histology and Embryology, School of Medicine, Belgrade, Serbia,

[3] Oncology Institute of Vojvodina Sremska Kamenica, Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia;

Introduction: Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is an inherited cerebrovascular disease caused by mutations in the Notch3 gene on chromosome 19. The diagnosis of CADASIL is based on typical clinical presentation and characteristic magnetic resonance imaging (MRI) changes, and has to be confirmed by biopsy of the sural nerve, muscle and skin, as well as by genetic analysis.

Case report: A 53-year old female patient presented with an acute ischemic stroke that occurred in the absence of vascular risk factors. Her past medical history was negative for migraine but positive for cognitive impairment. Family history was significant for early-onset stroke. Brain MRI showed extensive isolated and confluent ischemic changes in subcortical white matter. Based on her medical history and the MRI findings, diagnosis of CADASIL was suspected and then confirmed by pathologic examination. Genetic testing was also performed. Mutational analysis of the Notch3 gene disclosed a new mutation substituting glycine for cysteine at codon 89 (Gly89Cys) in exon 3.

Conclusion: This case suggests that CADASIL should be suspected in patients with stroke that arises in the absence of known vascular risk factors, especially if there are typical MRI findings. The confirmation of this diagnosis is very important, not only for prognosis of patients. Genetic counseling of family members, who are asymptomatic carriers of mutations, is an also essential part of disease management.

Keywords: CADASIL, ischemic stroke, Notch3 gene, exon 3

22. THREE CASE-REPORTS OF TOLOSA-HUNT SYNDROME

Ana Podgorac[1], J. Zidverc-Trajković[1,2], Z. Jovanović[1,2], N. Veselinović[1], A. Ristić[2], A. Radojičić[2], M. Mijajlović[1,2], N. Šternić[1,2]

[1] School of Medicine, University of Belgrade, Serbia

[2] Neurology Clinic, Clinical Center of Serbia, Belgrade, Serbia

Introduction: Tolosa–Hunt syndrome (THS) is a rare entity, described in the present International Classification of Headache Disorders (ICHD)-II as the episodic orbital pain associated with paralysis of one or more of the third, fourth and/or sixth cranial nerves which usually resolves spontaneously but tends to relapse and remit. Hereby we present three case reports of this rare disorder.

The 54 years old woman.

Headache occured at the age of 48, in the right orbital region, sharp, moderate, lasting for 10 days. The pain is accopanied by diplopia and paresis of the sixth cranial nerve on the right. Additional examination, including MRI of the brain were normal. Prednisolone 60 mg p.o. daily after 2 days brought recovery. In next 6 years, patient experienced two relapses with same symptoms and same positive response to steroid therapy.

The 64 years old woman.

At the age of 58, patient experienced strong headache in the left orbital region, lasting for hours, with ptosis of left palpebra and paralysis of the left bulb. Additional examination, including MRI of the brain were normal. After 3 days of Prednisolone 60 mg p.o. daily, patient experienced recovery. In next 4 years, patient experienced four relapses with same symptoms and same positive response to steroid therapy.

The 56 years old woman.

Intense, throbbing-like headache at the base of the nose on the left appeared at the age of 56, followed by left palpebra ptosis, plegia of the left bulbus and V2 hypoesthesia. NMR showed a mass in the left cavernous sinus without propagation and without contrast enhancement. Methylprednisolone, 1g, i.v., was initiated and pain resolved completely after <36h. Ocular motility recovered 3 weeks after. Three months after, neurological examination showed normal findings and NMR findings were unchanged.

23. VARICELLA ZOSTER VIRUS CEREBRAL VASCULOPATHY WITHOUT RASH ACCOMPANIED BY MUCOUS AND BLOODY DIARRHEA SUCCESSFULLY TREATED WITH INTRAVENOUS ACYCLOVIR: A CASE REPORT

[1]Aleksandar J. Ristić, MD MSc; [1, 2]Olivera Stojiljković, MD; [1, 3]Boro Perović, MD; [4]Maja Stanojević, MD; [1]Slavko Janković, MD PhD; [1]Nikola Vojvodić, MD Msc; [1]Dragoslav Sokić, MD PhD

[1]Neurology Clinic, Clinical Center of Serbia, Belgrade, Serbia

[2]General Hospital Subotica, Subotica, Serbia

[3]General Hospital Niksic, Niksic, Montengro

[4]University of Belgrade School of Medicine, Belgrade, Serbia

Introduction: In recent years it became evident that varicella zoster virus (VZV) reactivation can present as ischemic and hemorrhagic stroke or gastrointestinal (GI) symptoms in immunocompetent and immunocompromised patients. Both VZV cerebrovascular and visceral manifestations may appear in the absence of a cutaneous rash.

Case report: We present a 49 year old male patient who presented with recurrent hemorrhagic strokes accompanied by abdominal pain and bloody and mucous diarrhea without skin lesions following prolonged immunomodulatory therapy (methylprednisolone, azathioprine) due to a decline in platelets in the setting of idiopathic thrombocytopenic purpura. VZV infection was confirmed by virus DNA presence in cerebrospinal fluid. Both GI and neurological symptoms subsided after high dose intravenous acyclovir.

Conclusion: Associated neurological and GI symptoms may both be a consequence of VZV reactivation. Knowledge and recognition of divergent and insidious symptoms and sufficient high-dose antiviral treatment are crucial in the late VZV disease management.

Keywords: varicella zoster virus, recurrent hemorrhagic stroke, visceral herpes zoster, bloody and mucous diarrhea.

24. HIGH DEGREE OF STENOSIS OF BASILAR ARTERY IN 61-YEAR OLD PATIENT

V. Posavec, M. Bakran

Department of neurology, General hospital Zabok

E-mail: vposavec@gmail.com

Our aim was to present the case of patients with extremely high degree of stenosis of basilar artery with TCD, MSCT angiography and with MRA and at the time of diagnosis patient had a very mild symptoms.

Basilar artery supplies most of the brainstem and thrombosis often has catastrophic consequences. It resulting in quadriplegia and death due to cessation of breathing. A high degree stenosis are causing ischemia in those parts of the brain. The consequences are high neurological disturbance.

In this patient case, ultrasound and the MSCT diagnosis of head and neck arteries was preformed becouse of mild syndrom at the age of 59. MSCT angiography detected a high stenosis of proximal basilar artery in distance of more then 1cm, and width from 1mm of lumen. Also, there was a high degree of stenosis of the left vertebral artery while the carotid arteries and other arteries of the circle of Willis were properly viable. MSCT showed no brain lesion.

The patient was taking drugs – betahistin, andol, antihypetensiv and lipid lowering. In the further course of disease, there were several transient ischemic attacks with vertigo. At the age of 61 an ischemic stroke with left sided hemiparesis appeared. MSCT verified linear cortico subcortical ischemic cerebellar lesion on his left side. Ater therapy, patient was discharged from hospital withaut neurological cosequences. In the further course, the patient is on anticoagulation therapy and without significant neurological symptoms. It is predicted for patient to consult with intervention vascular radiologist.

Key words: basilar artery, high dregree stenosis, mild neurological symptomatology

25. TCD MONITORING OF AMBULATORY PATIENTS WITH VERTIGINOUS SYDROM IN „OPĆA BOLNICA ZABOK“

V. Posavec, M. Bakran
Department of neurology, General hospital Zabok
E-mail: vposavec@gmail.com

TCD monitoring of ambulatory patients with vertiginous sydrom in „Opća bolnica Zabok“.

The aim was to establish connectons of mean blood flow velocity in the vertebrobasilar arteris with vertiginous difficulties in neurological patients.

Testing was conducted at the Ultrasound diagnosis of head and neck arteries laboratory at the „Opća bolnica Zabok“ in period of two years. The patent had easy dizziness or instability while they are standing or walking. Testing was conducted three times in period of 3 months. The study haven't considered patients with BPV, vestibular neuronitis and stroke in the vertebrobasilar basin.

We have examined patients who had lower values in the vertebral arteries – MBFV below 26cm/s, in the basilar artery below 30 cm/s and those who had increased values – MBFV in the basilar artery above 52 cm/s and in vertebral artery above 45 cm/s.

There is correlation with MBFV with age and gender. Also, there are MBFV changes in the arteris correlated with improving of the condition. It is important to note that hemodynamics (in cases with mild vertiginous problem) today generally is not significant, but we have proved th opposite.

Key words: vertigo syndrome, transcranial doppler, mean blood flow velocities

26. BILATERAL SUBCLAVIAN STEAL SYNDROME - CASE REPORT

H. Budincevic[1], L.Friedrich[1], N. Tolj Karaula[2], N. Maric[2], T. Sucic[3], I. Bielen[1]
[1] University Hospital Sveti Duh, Department of neurology, Stroke and intensive care unit, Sveti Duh 64, Zagreb, Croatia
[2] University Hospital Sveti Duh, Department of internal medicine, Emergency and intensive care unit, Sveti Duh 64, Zagreb, Croatia
[3] University Hospital Sveti Duh, Department of radiology, Sveti Duh 64, Zagreb, Croatia;
E-mail: hbudincevic@gmail.com,
phone: +385 1 3712 159

Background: Subclavian steal syndrome is caused by a severe stenosis or occlusion of subclavian or innominate artery, and bilateral finding is rare.

Methods: This case report reveals potential cause of falsely low values of arterial blood pressure unresponsive to standard vasopressor treatment.

Results – Case report: We report a case of a 56-year-old male patient who presented to the ER with dizziness, vomiting and a sense of tingling in his right arm. His arterial blood pressure was 80/60 mmHg on both arms, and he was initially admitted to the Intensive care unit and treated with standard vasopressor agents. He also had a right-beating horizontal gaze-evoked nystagmus. There was a bruit over left carotid artery, as well as in supra- and infraclavicular region. Carotid and vertebral arteries ultrasound showed signs of partial steal syndrome in the right CCA, with reversed flow in the right ECA and reduced flow in the right ICA. There were signs of bilateral steal syndrome in vertebral arteries. TCD pointed to reversed flow in both vertebral arteries in their intracranial segment. Aortic arch angiography revealed subtotal stenosis of right innominate artery and occlusion of left subclavian artery. Our patient with blood pressure of 80/60 mmHg on both brachial arteries was later measured with 160/80 mmHg on both legs. Eventually, patient was treated by interventional radiologist who performed percutaneous transluminal angioplasty on right innominate artery. Control carotid and vertebral arteries ultrasound showed only sonological signs of complete left subclavian steal syndrome. Patient received bispoprolole and perindopril because of high blood pressure.

Conclusion: The bilateral subclavian steal syndrome should be taken into account in case of a seemingly hypotensive patient unresponsive to standard therapy.

27. CHANGES OF ATTITUDES TOWARD EPILEPSY IN COLLEGE-PREPARATORY HIGH SCHOOL STUDENT POPULATION: AN INDICATOR OF GLOBAL CAMPAIGN SUCCESSFULNESS?

Ivana Zobić, Ivan Bielen
Department of Neurology, University Hospital „Sveti Duh”, Sveti Duh 64, 10 000 Zagreb, Croatia

Introduction/Objectives: Despite a progress in medical and social care of people with epilepsy (PwE), epilepsy still remains the disorder associated with negative social connotations. Due to negative social attitudes and stigmatization of PwE, in 1997 WHO (World Health Organization), ILAE (International League Against Epilepsy) and IBE (International Bureau for Epilepsy) jointly initiated the campaign

"Bringing Epilepsy Out of the Shadows", designed to encourage educational initiatives about epilepsy and to increase awareness and reduce prejudice towards PwE. Within the "Out of the Shadows" campaign in Croatia, numerous activities have been organized. The aim of this study was to investigate the changes in knowledge and attitudes towards epilepsy in the population of college-preparatory high school students, which could be the result of educational activities carried out in the last 8 years.

Participants, Materials/Methods: In order to evaluate the success of these activities for college-preparatory high school students, surveys conducted in October of 2002 and 2010 in the sample of adolescent college-preparatory high school students of the 9th Gymnasium have been compared. Conducting a survey on attitudes and knowledge about epilepsy in 2010 was organized six months after the manifestation "Purple Day", which is designed as a day of support for PwE that takes place on the 26th of March, and the educational program within it. In both years, 430 respondents completed identical questionnaires concerning their knowledge and attitudes toward epilepsy.

Results: The 2010 survey indicates a higher number of students with better knowledge ($p<0.05$), and more positive attitudes related to marriage ($p<0.05$), and employment of people with epilepsy ($p<0.01$). Percentage of positive attitudes related to playing with children with epilepsy was high in both years (> 97%).

Conclusions: Students with better knowledge had more positive attitudes. In the subgroup, however, i.e., those with a relatively high level of factual knowledge, this relationship was impossible to prove. Therefore, we suggest that, despite the demonstrated progress in knowledge and attitude toward epilepsy, educational activities alone are insufficient in combating the existing prejudice.

28. CONSENSUS ON ULTRASOUND CHRONIC CEREBROSPINAL VENOUS INSUFFICIENCY SCREENING CRITERIA

Sandra Morovic[1], Erica Menegatti[2], Gisele Viselner[3], Andrew N. Nicolaides[4], Paolo Zamboni[5]

[1]Department of Neurology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

[2]Vascular Diseases Center, University of Ferrara, Italy,

[3]Department of Public Health and Neurosciences, IRCCS "C. Mondino National Institute of Neurology" Foundation, University of Pavia, Italy,

[4]Vascular Screening and Diagnostic Centre, Cyprus,

[5] Vascular Diseases Center, University of Ferrara, Italy

CCSVI is a syndrome characterized by stenoses or obstructions of the internal jugular vein (IJV) and/or azygos veins (AZV) with disturbed flow and formation of collaterals. Most common venous lesions are truncular vascular malformations.

Catheter venography is a gold standard for assessment of lesions producing CCSVI, but it is invasive and cannot be used as a screening method. Ultrasound is an ideal, non-invasive, bedside, real-time screening tool with high sensitivity and specificity. It is a valuable diagnostic test, in presence of which, catheter venography will only be needed when a decision has already been made for intervention.

Recommendations with a protocol, methodology, and criteria on CCSVI screening using ultrasound, have been proposed during a 2011 Consensus Conference, at the 1st ISNVD Meeting. At least two criteria have to be positive to consider CCSVI:

A) Bidirectional flow in one or both IJVs in either positions, or bidirectional flow in one, with absence of flow in the other position and/or B) reversal or bidirectional flow in one or both vertebral veins (VVs) in both positions.

Bidirectional flow in intracranial veins and sinuses (additional criteria).

A) Reduction of IJV cross sectional area (CSA) in supine position to ≤0.3 cm^2 which does not increase with Valsalva manoeuvre, and/or B) Intraluminal defects combined with hemodynamic changes. Valve leaflet/s immobility confirmed by M-mode.

A) Absence of detectable flow in IJV and/or VV, in both positions, or B) In one posture, absence of detectable flow in IJV and/or VV, and bidirectional flow detected in the other position, same side.

A) CSA of IJV is greater in sitting than in lying position or B) Appears almost unchanged despite change in posture.

Performance of CCSVI screening protocol, on both sides and in both positions, ensures high scanning reproducibility with comparable accuracy between centres.

29. CORRELATION OF SYSTOLIC BLOOD PRESSURE AND ARTERIAL STIFFNESS IN MEN AND WOMEN

Sandra Morovic, Sonja Antic, Miljenka Jelena Jurasic, Vida Demarin

Department of Neurology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

Reference Center for Neurovascular Disorders and Headache of the Croatian Ministry of Health and Social Welfare

Introduction: Aging causes gradual loss of natural blood vessel elasticity. Some risk factors such as raised blood pressure are known to accelerate this process by bringing imbalance into healthy aging process. Previous studies have shown positive correlation between reduced carotid elasticity and incidence of stroke and other vascular diseases.

The aim of our study was to show the correlation between changes in carotid arterial stiffness and five categories of systolic blood pressure as well as to note any existing differences between arterial stiffness of men and women in correlation with systolic blood pressure values.

Patients and methods: Fifty subjects participated in the study. All subjects were healthy volunteers. Presence of carotid disease was eliminated by performing color Doppler flow imaging of carotid arteries before measuring carotid elasticity. Subjects with an IMT >8mm at 1.5 cm proximal of carotid bifurcation were excluded from the study. Subjects had no clinical signs of stroke, TIA, diabetes or other serious illness. Measurements were done on both common carotid arteries, 1.5 cm proximal of carotid bifurcation using an Aloka Prosound 5500 ultrasound machine with eTracking software application.

Results: Subjects were grouped into 5 categories of systolic RR, from 110-150mmHg. In women, a continuous increase in arterial stiffness was noticed in categories of 110-150mmHg. In men, changes of systolic blood pressure from 110-140mmHg did not show a significant increase in arterial stiffness. But a significant increase in arterial stiffness was noted in group of male patients with systolic blood pressure from 140-150mmHg.

Conclusion: We found some indices that men and women react differently to systolic blood pressure raise in means of arterial stiffness. Systolic blood pressure increase above 140mmHg causes a serious reduction in carotid artery elasticity and presents one of most important modifiable risk factors for cerebrovascular diseases for both sexes.

30. VOLUMETRIC CHANGES WITHIN THE FRONTO-STRIATAL REWARD SYSTEM IN ADOLESCENTS AND ADULTS WITH ADHD

Maria Lojowska, Marcel Zwiers, Daniel von Rhein, Jan Buitelaar

Radboud University Nijmegen, Donders Centre for Cognitive Neuroimaging, prof. Bromstraat 112-14, Nijmegen 6525BJ, Netherlands;

Email: m.lojowska@student.ru.nl

Introduction: Recently, the focus of research on ADHD has been on the functional deficit within the reward circuit that may account for some of the behavioral manifestations of this disorder. However, the volumetric abnormalities within this circuit across age, in young and adult ADHD patients, have been not investigated yet. Therefore, in this study we examined the age-dependent volumetric changes within reward circuit encompassing the mesial prefrontal cortex (MPFC), orbitofrontal cortex (OFC) and nucleus accumbens (NA), and the correlation between the volumetric outcomes and behavioral symptoms of hyperactivity/impulsivity and inattention.

Patients and methods: The structural images of 290 ADHD and control subjects, aged between 8 and 50, were analyzed using voxel-based morphometry. Aligned T1 structural images were bias-corrected, normalized to the standard space, segmented and modulated using the automatic segmentation option in SPM8. A factorial analysis was performed to investigate the cross-sectional GM volumetric differences within the ROIs of MPFC, OFC and NA. Lastly, the correlation analysis between the volumes of the ROIs and behavioral symptoms of hyperactivity and impulsivity was performed.

Results: We found a significant decrease in the volume of the MPFC and the OFC in younger but not the adult ADHD subjects, relative to controls. Moreover, there was a significant negative correlation between the volume of the OFC and behavioral symptoms of inattention, controlling for age effect.

Conclusion: Our results imply the involvement of the volumetric abnormalities within the reward circuit in the neuropathology of adolescent ADHD and support the hypothesis of delayed brain development in ADHD.

31. MEDICAL COMPLICATIONS IN POSTACUTE STROKE PATIENTS DURING HOSPITAL REHABILITATION

Dragica Vrabec-Matković[1], Vesna Vucelić[2], Croatia, Vesna Budišin[3]

[1] Hospital Varaždinske Toplice, Neurorehabilitation Services, Trg slobode 1, Varaždinske Toplice 42 223, Croatia

[2] Medical Rehabilitation Hospital Varaždinske Toplice

[3] Polyclinic Medikol, Zagreb Croatia, Medical Rehabilitation

Email: vrabecmatkovic@gmail.com

Introduction: Complications after stroke impede rehabilitation, impair functional outcome and increase cost of care.The aim of the study was to determine the frequency and types of medical complications that occur during postacute hospital rehabilitation of patients who suffered a stroke.

Methods: The study included 90 patients treated at the Medical Rehabilitation Hospital Varaždinske Toplice during the period from September 1st 2010 to December 31st 2011. All patients were dependent in the daily activities with moderate or severe disability. Neurological complications (stroke recurrence, epileptic seizure), cardiological complications (acute myocardial infarction, cardiac failure), infections (pneumonia, urinary tract infection, other infections), falls (nonserious and serious), thromboembolisms (deep vein thrombosis, pulmonary emobolism), pressure sores and pain (shoulder pain and other pain) have been monitored.

Results: Ninety patients (46 women, aged 70,31 ± 11,04 years – range from 40 to 89 years and 44 men, aged 66,62 ± 10,56 years – from 46 to 83 years) were admitted to rehabilitation treatment in the period from the second to seventeenth week after the stroke, most of the patients (69,9%) in the period from second to fourth week. 73 patients (81,1%) suffered from ischaemic and 17 patients (18,9%) from haemorrhagic stroke. Regarding risk factors, 83 (92,1%) patients had hypertension, 16 (17,8%) previous stroke, 23 (25,5%) atrial fibrillation, 31 (34,1%) diabetes mellitus, 7 (7,8%) recovered from myocardial infarction and 2 (2,2%) patients had a transient ischaemic attack. One or more complications have been registered in three quarters of the patients (74,5%). Most frequent complications were urotract infections (69,9%) and pain (43,3% in total: shoulder pain 15,5%, and other pain 27,8%). These are followed by pneumonias (13,3%), cardiac failure (8,9%), pressure sores (6,7%), and less frequently, other complications: acute myocardial infarction (4,4%), pulmonary embolism (3,3%), epileptic seizures (3,3%), other infections (3,3%), nonserious (2,2%) and serious (2,2%) falls, deep vein thrombosis (2,2%) and recurrent stroke (1,1%).

Conclusion: An analysis of medical complications during hospital rehabilitation treatment in this group of the functionally dependent poststroke patients showed that three quarters of the patients have suffered from at least one complication during the rehabilitation.The most common were urinary tract infections and pain.

32. RECURRENT, MIGRATORY COMPLEX REGIONAL PAIN SYNDROME TYPE 1 ASSOCIATED WITH VITAMIN B12 DEFICIENCY– CASE REPORT

Dragica Vrabec-Matković[1], Vesna Budišin[2], Duška Šklebar[3],

[1] Hospital Varaždinske Toplice, Neurorehabilitation Services, Trg slobode 1, Varaždinske Toplice 42 223, Croatia

[2] Polyclinic Medikol, Zagreb Croatia, Medical Rehabilitation

[3] Department of Neurology, General Hospital Bjelovar, Croatia

Email: vrabecmatkovic@gmail.com

Introduction: Complex regional pain syndrome type 1 (CRPS 1) is a chronic pain disorder characterized by neuropathic pain and autonomic involvement (altered sweating, affection of skin color and temperature, trophic changes). Although CRPS typically occurs in an extremity as result of trauma, it can be linked to several diseases. We describe the case of reccurent, migratory CRPS1 associated with vitamin B12 deficiency.

Methods: In 2008 a 58-year-old woman began to complain of three months pain in her right hand that became cyanotic, swollen with hyperalgesia, and movement disability. There was no traumatic injury and she was unsuccessfully treated with NSADs. During previous three years she was suffering of low back pain, hyperuricaemia and gastritis. Neurological examination revealed left horizontal nistagmus, right hand muscles hypotrophy, hypoesthesia in dermatomes C6C7 right, L5S1 left and left side of face, tremor of right hand. An EMG and NCV studies examination found both side, moderate, chronic radiculopathy C7C8Th1. Brain MRI showed chronic white matter lesions that were estimated as vascular. An MRI of cervical spinal cord was normal. A triple phase bone scan confirmed clinical impression of CRPS1of right hand. The patient responded well to a combination of cervical sympathetic block and physiotherapy that was preceded with occupational therapy, psychological support, medication with antidepressant, and changing of working position. All that led to functional recovery. Nine months after the beginning of symptoms patient came back to job. Six months later she felt pain in her left arm with swelling, cyanosis and hyperalgesia. Because

of the other minor signs of damage of central nervous system we did another diagnostic investigation that revealed B12 deficiency in 2010. Substitution therapy was started and we repeated therapy with cervical sympathetic block and physiotherapy. She experienced marked improvement and symptoms disappeared.

Results: Today, the patient is treated with intramuscular vitamin B12 supplementation and works full-time job as a seller.

Conclusion: Patients with the CRPS1 require careful diagnostic approach. Patients with neurological symptoms of unknown etiology should be tested for B12 deficiency and malabsorption. We emphasize the early intensive multidisciplinary approach for successful management of such condition.

33. A NEAR INFRARED SPECTROSCOPY-BASED STUDY TO EVALUATE MUSCLE METABOLISM IN MULTIPLE SCLEROSIS

Anna Maria Malagoni, MD, PhD, Nicola Lamberti DSc, Michele Felisatti, PhD, Paolo Zamboni, MD, Fabio Manfredini, MD

Vascular Diseases Center, University of Ferrara, Italy

Background: Near Infrared Spectroscopy (NIRS) allows a non-invasive study of muscle metabolism under static and dynamic conditions. NIRS based methods have been applied for healthy and diseased people, but poorly in studies with MS patients. Aims of this study was 1)To determine muscle metabolism of gastrocnemius in a static phase (oxygen consumption) and in a dynamic phase (oxygen changes during an incremental treadmill test) in multiple sclerosis (MS) patients compared to healthy subjects, and 2)To compare in MS patients the results of the dynamic test with the validated 6-minute-walking-test (6MWT).

Subjects and Methods: Twenty-eight MS patients (male, n=16, age=42.7±14.0y; clinical types: Relapsing Remitting-RR, n=19, Primary Progressive-PP, n=9) for a total of 56 legs, and 11 healthy volunteers (male, n=6, age=33.2±8.9y) for a total of 22 legs, were evaluated. Venous oxygen consumption ($rmVO_2$) at gastrocnemius muscle was measured at rest. All healthy subjects and all ambulatory MS patients (n=27) performed an incremental level treadmill test with NIRS probes on the gastrocnemius muscle, with starting speed set at 1.0Km/h and increases of 0.1Km/h every 10m to exhaustion (maximal speed). Variations in oxygenated (HbO_2), deoxygenated (HHb), total (tHb=HbO_2+HHb), and differential (dHb=HbO_2-HHb) hemoglobin were recorded and quantified as area-under-curve (AUC) within the speed range 1.0-2.0 km/h. Heart rate was also recorded, and the variation of beats in the same speed interval was calculated (dHR). In MS ambulatory patients, indoor 6MWT was also performed and the distance covered was assessed (6MWD).

Results: $rmVO_2$ was significantly higher in all MS legs compared to healthy legs (P=0.01), also analyzing separately PP and RR (P=0.004). O_2Hb_{AUC}, HHb_{AUC} and dHb_{AUC} did not differ between all MS and healthy legs but different patterns of O_2Hb_{AUC} related to PP were highlighted with lower values than healthy and RR (P=0.02). A significantly higher dHR was observed in all MS patients (P=0.0003) compared to healthy subjects, also according to both MS clinical types (P<0.001). In MS patients 6MWD was significantly directly correlated to maximal treadmill speed (r=0.50, P=0.009) and O_2Hb_{AUC} (r=0.47, P=0.02), and inversely to dHR (r=-0.39, P=0.05).

Conclusions: The study showed that NIRS-based measurements allowed the evaluation of MS patients, quantified their muscle metabolic response, highlighted different metabolic patterns in patients with different MS clinical types compared to healthy subjects, and correlated with a validated functional measure. The study also showed in MS patients possible peripheral ($rmVO_2$) and central (dHR) compensatory mechanisms related to oxygen transport that might be involved in the multi-factorial fatigue symptom.

34. DELIRIOUS PATIENT - PHYSICAL RESTRAINT USE ACCORDING TO THE CROATIAN HOSPITAL ACCREDITATION STANDARDS

Šklebar Ivan[1], Brozović Gordana[1], Šklebar Duška[2], Vrabec Matković Dragica[3].

[1]Clinical Hospital „Sveti Duh“ Zagreb,

[2]General Hospital Bjelovar,

[3]Medical Rehabilitation Hospital Varaždinske Toplice

Introduction/ Objective: The use of physical restraint in delirious patients is related to an array of ethical and medicolegal dilemmas which, in most cases, arise from insufficient knowledge of the regulations in force or due to their vague wording.

Participants, Materials/Methods: This review outlines the basic views of the medical profession regarding restraint use as a method in treatment of delirium. The aim is to give an insight into the existing legislation regarding the topic on the national and international level.

Restraint of patients in delirium, whether it is physical or chemical, has a number of potentially harmful side effects and must be used with clear indications, under the strict supervision, and with meticulously kept medical records.

Results: When patient manifests delirium, he/she must be treated in accordance with medical ethics, international conventions and the laws and regulations relating to patient rights. This includes to give him or her timely information as a base to take notification of informed consent, respecting principles of patient's autonomy and dignity, as well as abiding by the rules of the profession integrated in every hospital's written instructions on treatment of a patient in delirium.

Conclusion: Medicolegal frame of restraint use in delirious patients in the setting of Croatian hospitals was given by the Croatian Hospital Accreditation Rules. This is currently the highest existing standard for restraint use in delirious patients hospitalised in various hospital departments.

KEY WORDS Delirium, medicolegal basis of restraint use, hospital accreditation

35. PRELIMINARY REPORT OF HYPERTENSION AND TYPE 2 DIABETES MELLITUS INFLUENCE ON THE CEREBROVASCULAR REACTIVITY IN DIABETICS WITH RETINOPATHY

M. Ivankovic[1], M. Radman[2], A. Gverović-Antunica[3], S. Tesanović[4], G. Trgo[2], V. Demarin[5];

[1]Neurology department, General hospital Dubrovnik, Dubrovnik, Croatia,

[2]Department of Internal Medicine, Clinical Hospital Centre Split, Split, Croatia,

[3]Oftalmology department, General hospital Dubrovnik,Dubrovnik, Croatia,

[4]Endocrinology department, General hospital Dubrovnik, Dubrovnik,Croatia,

[5]Neurology department, Clinical Hospital Centre "Sisters of Mercy", Zagreb, Croatia

Background and aims: Cerebrovascular reactivity (CVR) provides information on the intracerebral arterioles capacity to react to vasodilatory stimuli. This study aims to investigate the influence of hypertension and type 2 diabetes mellitus on cerebrovascular reactivity in diabetics with retinopathy.

Materials and methods: Subjects were classified into four groups each comprised of 10 women: diabetic retinopathy with hypertension, diabetic retinopathy without hypertension, hypertension without diabetes mellitus and healthy controls without hypertension and diabetes mellitus. Blood samples were taken after overnight fasting ant laboratory parameters- HbA1C, C-reactive protein, cholesterol, triglyceride, HDL and LDL cholesterol were determined. Duration of hypertension and diabetes was more than 10 years. Patients were od diet, oral or insulin therapy. Evaluation of extracranial blood vessels was performed by the Color Doppler Flow imaging and Power Doppler Imaging methods on an ATL HDI 3000, 7,5 linear probe;and transcranial Doppler ultrasound examination was performed on a MultiDop L2 with a 2 MHz hand-held pulsed wave Doppler probe in supine position after 5 minute bed rest. Values of mean blood velocity in the middle cerebral artery were observed in all groups- in basal state and after breath holding (30 seconds). CVR was expressed as a difference between those two values.

Results: Continuous variables distributions were tested with Shapiro-Wilk test, homogenity of variances with Levene's test. Comparison of the CVR parameters was performed using ANOVA test. In group with diabetic retinopathy and hypertension the increase in CVR was 8,6 cm/s (±; 2,39), in the hypertension group was 14,8 cm/s (±;2,51) and in diabetics with retinopathy and without hypertension was 9,6 cm/s (±;2,92).

Conclusion: Diabetes mellitus influences more on CVR than hypertension.

35.1. THE FREQUENCY OF CREUTZFELDT-JAKOB DISEASE IN PRIMORSKO-GORANSKA COUNTY

Tuškan-Mohar L., Legac M., Prunk Drmić A., Bučuk M., Perković O., Antončić I.

Department of Neurology, University Clinical Hospital Centre Rijeka

Introduction: Creutzfeldt-Jakob disease (CJD) is a rare degenerative brain disorder that leads to dementia and ultimately death. CJD usually progress very rapidly. Worldwide, there is an estimated one case of CJD diagnosed per million each year, most commonly in adults, about age 60. Initial symptoms of CJD typically include personality and mood changes, insomnia, the loss of the ability to think, reason and remember-progressive dementia, neurologic symptoms and visual impairment, ataxia, loss of motor control, sudden jerky movements, abnormal reflexes and muscle spasms, difficulty speaking and swallowing, depression and anxiety. There are four forms of CJD: sporadic, familiar, iatrogenic and variant. The cause of CJD appears to be abnormal ver-

sions of a kind of prion and is characterized by spongiform changes.

Aim: The aim of this report is to emphasize the possibility of CJD among middle aged patients with rapidly progressive dementia and other typical signs and symptoms of CJD.

Patients and Methods: We present cases of patients admitted in Department of Neurology in University Clinical Hospital Centre Rijeka from 2001. to 2011. On admission all patients had signs of progressive dementia, personality and mood changes, ataxia and vertigo. Some of them suffered visual impairment and difficulty speaking. Electroencephalogram (EEG) and magnetic resonance (MRI) findings, detection of 14-3-3 protein in cerebrospinal fluid supported the diagnosis of CJD. Cerebrospinal fluid was analyzed in Clinic of Neurology University of medicine in Gottingen, Germany.

Results: There were 5 CJD cases during last ten years, 1 male and 4 female. The youngest was 57 years old, and the oldest 71 years old. They presented typical clinical presentation bat also typical electroencephalogram and magnetic resonance findings. Initial CFS analyzes showed normal protein, sugar and electrolyte content, and was negative for neurotropic viruses and B. burgdorferi. The analysis of 14-3-3 protein in cerebrospinal fluid was highly sensitive and specific in all patients. Postmortem examination was not performed due to patients families refusal of the procedure.

Conclusion: The course of the disease, the patients age EEG, MRI and CSF findings suggested sporadic form of CJD. Incidence of CJD in our region is one person per million, showing a female predominance. Obtained results are compatible with those from literature.

35.2. CEREBELLAR HAEMORRHAGE AFTER SPINE SURGERY

Jarc N., Švigelj V., Ožek B., Vrabec M., Šteblaj S., Žvan B.

University Medical Centre Ljubljana, Zaloška 2, SI-1252 Ljubljana, Slovenia

Introduction: Remote cerebellar haemorrhage is a rare complication of spine surgery. While its pathophysiological mechanism remains unknown, characteristic »zebra sign« bleeding pattern is recognized as its signature. We present a patient operated on lumbar canal stenosis and diagnosed with cerebellar haemorrhage a day afterwards.

Case report: 69 years old female patient was operated on lumbar spinal canal stenosis. Next morning she complained of vertigo and headache, followed by nausea, vomiting, stupor, spontaneous nystagmus of third degree and localising to painful stimuli. Computed Tomography (CT) revealed midcerebellar bleeding, obstructive hydrocephalus, upward mesencefalic and downward cerebellar herniation.

Neurosurgeon decided against decompressive craniectomy (DC) and inserted external ventricular drainage (EVD). Control CT revealed increased cerebellar oedema and EVD malposition. A new EVD was inserted into the right lateral ventricle, which resulted in decreased hydrocefalus, no change in herniation and additional bleeding in the right thalamus. Patient was kept sedated until the16th day from admission, as cerebellar and basal nuclei heamorrhage had been almost completely resorbed, and transtentorial herniation had resolved. 20 days from admission magnetic resonance imaging (MRI) revealed a 12 x 3 x 2,5 cms large extradural CSF collection and a 5 mms large dural defect.

Literature review: Literature describes less than thirty patients who had undergone different spine surgery procedures; e.g. surgery for atlantoaxial subluxation, decompressive suboccipital craniectomy and C1 laminectomy, laminectomy L5-S1, lumbar arthrodesis, and suffered from spontaneous remote cerebellar haemorrhage.

Dural tear or intradural manipulation leading to rapid loss of a large amount of cerebrospinal fluid (CSF), is the most commonly proposed mechanism. A rapid loss of a larger quantity of CSF likely creates a pressure gradient leading to cerebellar sagging, causing mechanical stress on cerebellar veins.

Neurological deterioration, evolving within hours to days, includes; cerebellar dysfunction, headache, nausea, vomiting, decreased state of consciousness and altered mental status.

Streaky bleeding pattern or »zebra sign« is a characteristic bleeding pattern, occuring due to blood spreading in the cerebellar sulci.

Treatment can be conservative or neurosurgical. Guidelines recommend that patients deteriorating neurologically or having brainstem compression and/or having hydrocephalus from ventricular obstruction undergo surgical removal of the haemorrhage as soon as possible. Decompressive craniotomy should be followed by EVD. Reoperation for dural tear repair or epidural blood patch is also reported.

Conslusions: Remote spontaneous cerebellar haemorrhage is a rare but worldwide described complication of diverse spine surgery procedures. Postoperational neurological deterioration raising an early suspicion caries the potential of prompt diagnosis and proper treatment.

35.3. NEUROPSYCHIATRY – MORE REAL THAN NEUROLOGY AND PSYCHIATRY

Zdenka Gruden, Vladimir Gruden Jr., Vladimir Gruden Sr.

Experta - Business School, Nalješkovićeva 21, Zagreb, Croatia

E-mail: vladimir.gruden1@zg.t-com.hr

Everyone coming to see his doctor, regardless the doctor's specialty, is a complete person composed of multiple dimensions. Therefore, as much as specialties and directed specialties take us in-depth, they limit our horizon, threatening to turn us into 'fachidiots'. It is particularly present with neurology and psychiatry (and their directed specialties). More than 50 years ago they used to be one occupation, a 100 years ago we were put together with internal medicine.

Recent knowledge increasingly suggests that there is an interconnection between some (we might as well say: all) bodily systems. Neurology and psychiatry are primarily directed towards one and the same system: nervous system. A psychoorganic syndrome deals with consequences (basically mental) of nervous diseases, while psychosomatic handles organic consequences of mental diseases (it is questionable how much it is related to the brain itself). Treatment of mental disorders has favourable effects on nervous diseases and vice versa.

Where is today the border between neurology and psychiatry? The discourse of psychiatry is of a dialectical nature, while the neurological one is relational. When psychiatrists describe symptoms, the contents are always latent, which is not so with neurologists. Psychiatry deals with mind and soul, but is there mind without a brain? Theologians believe that soul (psyche) never gets sick, as it is eternal and they consider a mental illness as an illness of an ephemeral brain.

Both vocations (neurology and psychiatry) are intensely present with autism, Alzheimer's disease and Tourette's syndrome, ADHD, PTSD... Almost all neurological diseases have a mental disturbance as a symptom or cause a psychical reaction, and we could boldly say that every psychiatric disease has its counterpart in an apparent or latent neurological psychopathology.

A special link between neurology and psychiatry is epileptoid or an epileptiform disease. According to its definition, it resembles epilepsy, and its particular feature is that it emerges paroxysmally. Paroxysm of psychological disturbances of psychotic nature indicates both antipsychotic and antiepileptic treatment. That is why whenever there are psychical disturbances patients are subjected to neurological examination (particularly EEG), which often (although not always) reveal dysrhythimic changes. Because of that, antiepileptics may be a choice as psychostablizers, particularly with patients suffering from bipolar psychotic attacks. Epileptic and epileptiform phenomena have a broad spectrum of symptomatology.

The main 'stumbling stone' when it is about neurology and psychiatry is the pursuit of the primary cause, the origin of the disturbance. This dichotomy won't disappear unless synchronicity is accepted in both neuropsychiatric etiology and in therapy.

35.4. FACIAL PARALYSIS IN POLYRADICULONEURITIS (GUILLAIN-BARRE)

Ivana Vidović, Dubravko Marković, Lorena Radolović Prenc, Frederic Ivan Silconi

General hospital Pula, Aldo Negri 6, 52100 Pula

E-mail: ivana_vidovic@yahoo.com

Introduction/Aim: Facial monoplegia or diplegia occurs in some cases of Guillain-Barre Syndrome (GBS). Prevailing view of GBS is that ethiology is autoimmune process. GBS is characterized by progressive weakness of more than two limbs, areflexia, and progression for no more than four weeks. Often GBS is proceeded by upper respiratory infection or gastrointesinal infection. Campylobacter jejuni is most commonly identified trigger. Most patients with GBS have good recovery, studies suggest that at the end of one year from onset of the neuropathy 65% of patients achieve an almost complete cure.

Case / Methods: To present shortly the case of Guillain Barre syndrome in 28-old female patient in neurology department of General Hospital Pula, presented by unilateral peripheral facial palsy, blurring of vision, lower limb weakness and paresthesia of two weeks, duration

Results: Female 28-old patient presented to the neurology department in January 2012 with complaints of left facial palsy, slightly blurring of vision, distal paraesthesia and weakness of lower limbs. There was no history of sphincter dysfunction, just minimal constipation. She gave preceding history of general weakness with feeling of illness, without fever. His epidemiologic and social history was unremarkable. On examination she was alert, fully oriented, cardiopulmonary compensated. She had left facial palsy, isocoria, reactive pupils and no nistagmus. Meningeal signs were absent. Lower limb power was reduced. She had deep tendon areflexia, flexor plantar response without answer, peripheral ataxia, in finger-nose test some terminal dismetria. There

was no sensory loss and no signs of autonomic changes. Routine blood tests show neutrophilia. Cerebrospinal fluid analysis revealed albuminocytologic dissociation, serology in CSF for neurothropic viruses and Borrelia burgdoferi were negative. In the nerve conduction study, prolonged distal latencies were recorded, together with reduced amplitude especially in both facial nerves, more in left, but also in lower limbs nerves. Conduction velocity of the tibial nerve was slightly reduced. Visual evoked potencial were normal. MR oft he brain was without pathology and MR of cervical spine showed osteochondrosis from CII to CVI. X ray scan of lumbar spine was normal. Stool analysis for Campylobacter jejuni was negative. Patient was treated in hospital for 17 days, receiving a corticosteroids, albumins and plasmapheresis treatment. Active and passive Physical therapy was conducted. Recovery in two weeks was good, in clinical examination notable was almost full recovery of facial palsy, minimazied lower limb weakness. After three months, parameters of nerve conduction study in facial and spinal nerves was improved, it was noted desincronisation of potential in lower limb muscle with signs of reinervation.

Conclusion: Unilateral facial palsy does not exclude coexisting subclinical affection of opposite facial nerve. Notable disfunction of cranial nerves always require detailed neurological examination and cerebrospinal fluid analysis so we could eliminate or verify polyradiculoneuritis.