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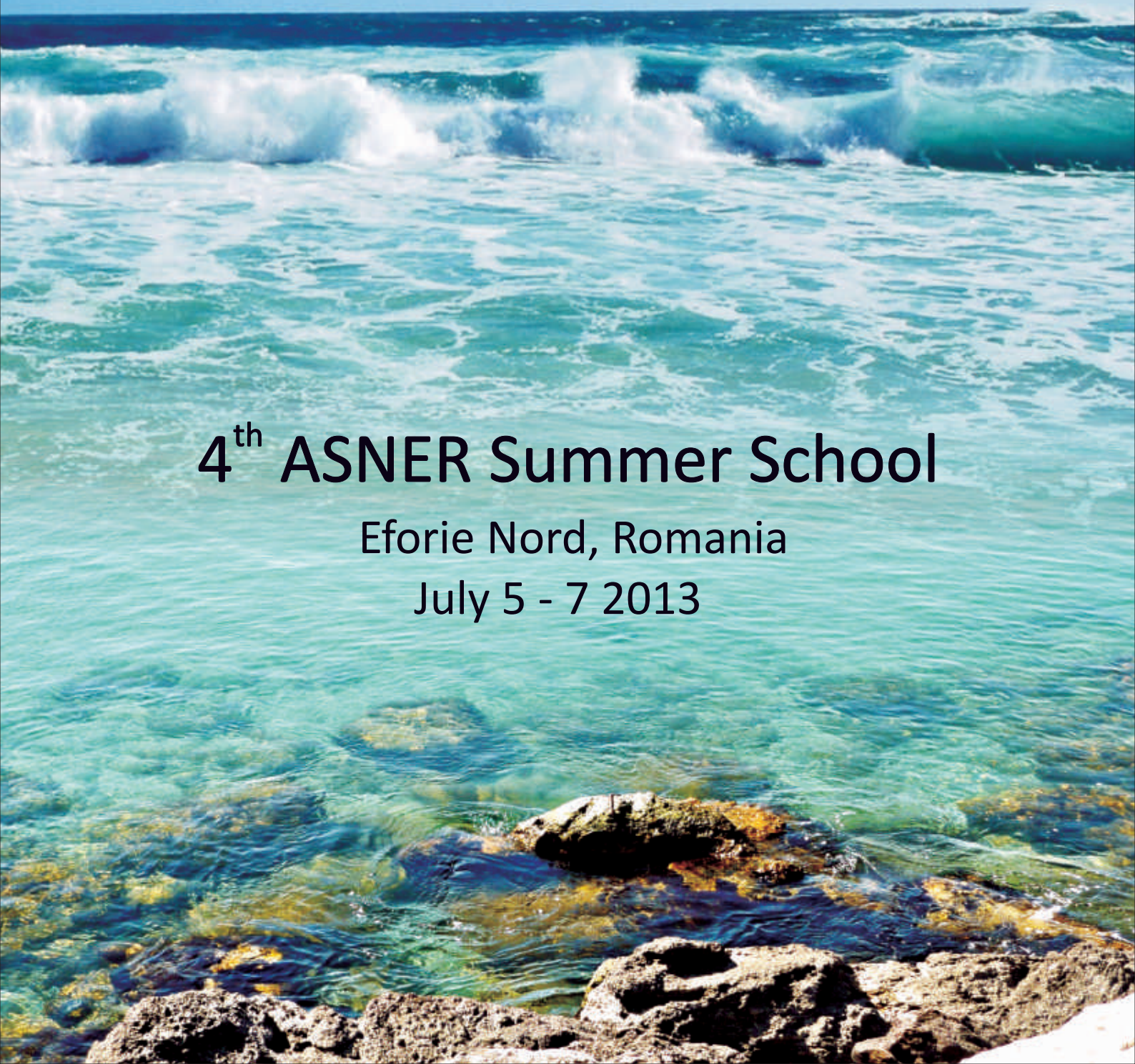
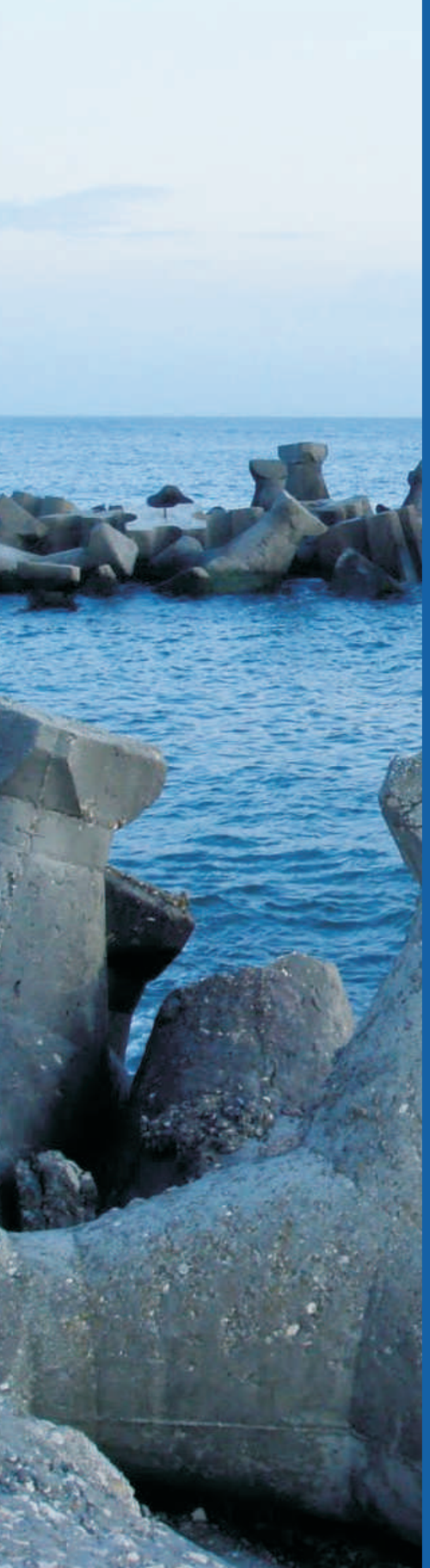


4th ASNER Summer School

Eforie Nord, Romania

July 5 - 7 2013



Speakers:

Ana-Maria Cobzaru
Bogdan Virgil Rotaru
Cristina Panea
Dafin Muresanu
Diana Bosoncea
Ioana Mandruta
Ionela Codita
Izabela Popa
Josep Valls Solé
Mihai Moldovan
Mircea Moldovan
Poul Jennum
Raluca Teleanu
Simona Petrescu
Troels Kjær
Tudor Lupescu
Vasile Tibre

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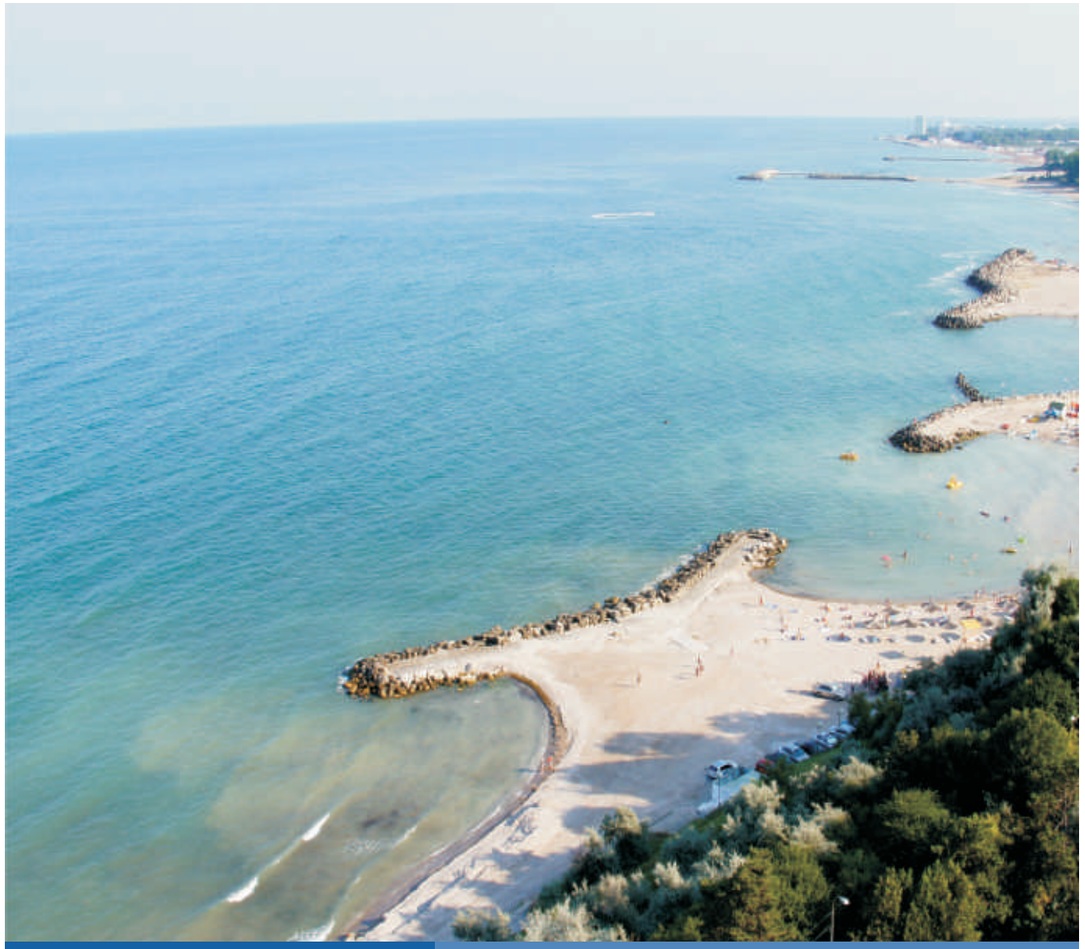
4th ASNER
Summer School



Friday July 5th

13.00 Welcome light lunch and onsite registration
13.30 Opening remarks - (Tudor Lupescu, Ioana Mindruta, Mihai Moldovan)
13.45 Reserved topic - (Dafin Muresanu)

14.30 - 18.30 **Sleep disorders symposium (Chair: Ioana Mindruta)**
14.30 - 15.15 Principles of sleep staging (Poul Jennum)
15.15 - 16.45 Sleep in neurological disorders (Cristina Panea)

16.45 - 17.00 Coffee break

17.00 - 17.30 How we explore excessive daytime sleepiness? (Poul Jennum)
17.30 - 17. 50 Epilepsy and sleep (Ioana Mindruta)
17.50 - 18.15 Seizures during sleep (Troels Kjær)
18.15 - 18.30 Discussions

19:00 Dinner

Saturday July 6th

Plenary session 1 (Chair: Tudor Lupescu)
9.00 - 10.00 Neurophysiological assessment of painful neuropathies (Josep Valls-Solé)
10:00 - 10:20 Neuropathies from electrophysiology to etiology (Tudor Lupescu)

10.20 - 10.40 Coffee break

Plenary session 2 (Chair: Mihai Moldovan)
10.40 - 11.30 EEG from the skull surface and beyond (Troels Kjaer)
11:30 - 12:00 EEG outcome measures in coma (Mihai Moldovan)

12.00 - 14.00 Lunch break

14.00 - 18.00 **EEG workshop**
Interpretation of EEG in epilepsy (Troels Kjaer, Poul Jennum, Ioana Mindruta, Cristina Panea)

14.00 - 18.00 **EMG workshop**
Assessment of excitability in brainstem circuits mediating the blink reflex and the startle reaction (Josep Valls-Solé)
The clinical value of nerve stimulation threshold (Mihai Moldovan)
Botulinic toxin injection under EMG guidance (Tudor Lupescu)

19.00 Dinner

Sunday July 7th

Plenary session 3 (Chair: Ionela Codita)
9.00 - 9.20 Assessment of Conduction Block in peripheral nerves (Vasile Tibre)
9.20 - 9.40 Electrophysiological assessment of asymmetric peripheral neuropathies (Ionela Codita)
9.40 - 10.00 Isolated motor lesion of the ulnar nerve in Guyon's canal. (Mircea Moldovan)
10.00 - 10.20 How the guidelines should guide us? (Izabela Popa)

10.20 - 10.40 Coffee break

Plenary session 4 (Chair: Ana Maria Cobzaru)
10:40 - 11.00 Electrical Status Epilepticus in Sleep Disorders (Raluca Teleanu)
11.00 - 11.20 Motor neuron disease variant or multiple mononeuropathy ? Case report. (Simona Petrescu)
11.20 - 11:40 Diagnostic issues in a case of a child with bilateral brachial plexus paralysis (Diana Bosoncea)
11.40 - 12:00 The Quervain's tenosynovitis (Bogdan Virgil Rotaru)
12.00 - 12.20 Searching for an etiology! (Ana Maria Cobzaru)
12.20 - 12:30 Discussions, concluding remarks

Diana BOSONCEA

Diagnostic issues in a case of a child with bilateral brachial plexus paralysis

Diana Bosoncea, D. Vasile, M. Sandu, M. - C. Musetescu, R. - I. Teleanu,
Spitalul Clinic pentru Copii "Dr. Victor Gomoiu"

Brachial plexus injury is a well known, challenging condition affecting between 0.5 and 3 per 1000 live births according to the World Health Organization. Injuries associated with the upper brachial plexus are classically named Erb palsies and those associated with the lower brachial plexus are traditionally named Klumpke palsies. The mechanism of injury to the brachial plexus is either from extreme traction on the nerves or direct impact. The usual symptoms of brachial plexus injuries include motor and sensory deficit of the shoulder, arm, and/or hand.

The authors describe a case of a 7-year-old boy with bilateral brachial plexus palsy due to obstetrical trauma. The child presented a history of obstetrical trauma, severe hypoxia, bilateral brachial plexus paralysis and bilateral collarbone fracture at birth. The child followed a regime of physiotherapy and neurotrophic therapy.

Electrophysiological investigations were performed, which raised the suspicion of bilateral brachial plexus disorders. But because the brachial plexus neurographic study revealed no significant changes (motor and sensitive conduction velocities were normal) and the needle investigation revealed complex repetitive discharges (CRD) in the left brachial biceps. We considered to discuss the following clinical entities: chronic partial denervation, grouped atrophy of muscle fibers (plexopathy or radiculopathy, spinal muscular atrophy, motor neuron disease); myopathies (necrosis, inflammation, muscle fiber splitting, acid maltase deficiency).

Key words: Brachial plexus, CR D, child

NOTES

Ana-Maria COBZARU

Neurologist with competence in electrophysiology and special interest in clinical neurophysiology working in the University Emergency Hospital in Bucharest as general neurologist and in private sector as neurophysiologist.

Searching for an etiology

Ana-Maria Cobzaru, Neurology Department, University Emergency Hospital of Bucharest

There will be presented two cases of neuropathy with uncertain etiology. Usually, the historical and clinical data are completed by the electrophysiological results, in order to focus the search for an etiology, but sometimes the neurophysiology may add more elements to puzzle. So, what remains to be done? To look for another colleague's opinion, screening laboratory tests, a specific treatment trial? And after that?

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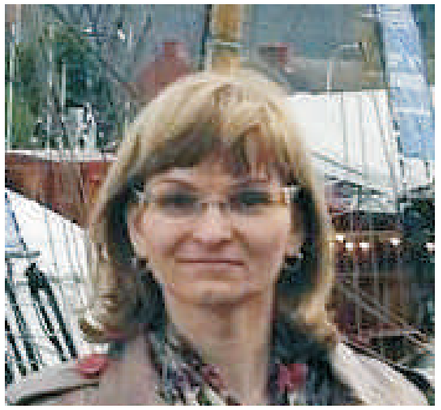

Ionela CODITA

Ionela Codita is currently working as a Senior Neurologist in the Neurology Department of Elias University Emergency Hospital in Bucharest. She has graduated "Carol Davila" University of Medicine and Pharmacy in 1995 and became a specialist in Neurology in 2000.

She earned a Competence in Clinical Neurophysiology in 2005. During her practice, dr. Codita attended many courses and teaching programs in the field of Clinical Neurophysiology such as: scholarship in Neurophysiopathology field at Policlinical Institute of San Donato Milanese, Italy (2002-2004), training Course in EMG and Neurography Uppsala , Sweden (2009), International SFEMG and QEMG Course –Kobe, Japan (2010), VIREPA distance learning courses on "EEG in the diagnosis and management of epilepsy – Basic Course 6th edition" (September 2011- March 2012) and "EEG SCORE course-1st edition"(November 2012-March 2013), the international educational course "Dinalund Summer School on EEG and Epilepsy" (July 2012).
She also manifests interest in Epilepsy, Motor Neuron Diseases and Movement Disorders. Dr. Ionela Codita is a member of the Romanian Society of Neurology, affiliated to the ENFS (European Federation of Neurological Societies) and to the WFN (World Federation of Neurology) and since May 2013 she is the secretary of ASNER-The Romanian Society of Electrodiagnostic Neurophysiology.

Electrophysiological assessment of asymmetric peripheral neuropathies

Ionela Codita, Raluca Simona Gurgu, Mircea Moldovan, Neurology Department of Elias University Emergency Hospital, Bucharest

Asymmetrical patterns are less common and include different lesion sites and pathological processes. Unilateral and focal symptoms in a limb must be distinguished from radiculopathy, plexopathy or multiple mononeuropathy. Multiple mononeuropathies produce a unique pattern in which 2 or more individual nerves are affected. Most often, this pattern results from an underlying vasculitic neuropathy. A confluent pattern of nerve involvement can develop in time, creating the aspect of overlapping mononeuropathies and the presence of any asymmetry on NCSs or needle EMG may be a clue to underlying multiple mononeuropathies pattern. Multifocal motor neuropathy (MMN) is an immune-mediated demyelinating neuropathy characterized clinically by asymmetric weakness and atrophy and the motor conduction block has been considered the electrodiagnostic hallmark. If sensory findings are present they lead to the consideration of MADSAM (Lewis-Sumner Syndrome). Atrophic weakness without sensory loss that does not follow a radicular, plexopathy, multiple mononeuropathy or MMN pattern suggests motor neuron disease (amyothophic lateral sclerosis). 2 cases with asymmetric electrophysiologic presentation will be discussed.

NOTES

Troels Wesenberg KJÆR

Dept of Clinical Neurophysiology, NF3063, Rigshospitalet University Hospital
US medical FMGEMS preclinical and clinical exam and ECFMG English test, 1992.

MD, University of Copenhagen, 1992
PhD, University of Copenhagen, 1996 on the thesis: "Decoding Neuronal Signals in Visual Cortex - Calculating Information in the Brain" Specialist in Clinical Neurophysiology, Denmark, 2003.

Present appointments:
Chief Physician (overlæge), Dept of Clinical Neurophysiology, Rigshospitalet University Hospital, since 2005.
External associate professor, Dept of Bio-Medicine, Faculty of Health Sciences, University of Copenhagen, since 1999.
External examinator, Danish medical schools and several other higher educations, since 2002.
Medical specialist DGM for the national board of health, since 2013.

Scientific interests: Epilepsy, Electroencephalography (EEG), Brain-computer-interface (BCI), Study of the self

Past Romanian experience: Danish participant at the International Chemistry Olympics, Timisoara, Romania 1983.

EEG from the skull surface and beyond

Troels Kjær, Clinical neurophysiology, Rigshospitalet, DK

What can we learn from the classical EEG and what is hidden to us? We will go through limitations and pitfalls of extracranial EEG from 30-minutes standard EEG to longterm video-EEG-monitoring. Special electrodes like sphenoidal electrodes are known to help with specific problems, however how does it all map to what goes on intracranially. We will look at simultaneous intracranial and extracranial recordings and discuss the limitations of the various types of intracranial electrodes. We will discuss the paper "Subdural to subgaleal EEG signal transmission: The role of distance, leakage and insulating affectors." (Duun-Henriksen et al, Clin Neurophysiolo, April 2013). Another way to enhance the EEG-signal is by combining it with fMRI, as discussed in "EEG/fMRI study of ictal and interictal epileptic activity: methodological issues and future perspectives in clinical practice." (Di Bonaventura et al, Epilepsia, 2006).

It is suggested that all participant have read the papers in advance and have sent at least one scientific question regarding each paper to the organizing committee allowing for dividing participants into groups for a small group work.

NOTES

Poul JENNUM

Professor, Institute for Clinical Neuroscience and Psychiatry, University of Copenhagen. Chief Consultant in Neurology and Clinical Neurophysiology. Head of Danish Centre of Sleep Medicine, Department of Clinical Neurophysiology, Glostrup Hospital, DK-2600 Glostrup, Denmark

Education and academic degrees:
MD degree from University of Copenhagen summer 1983.
Board qualified in clinical neurophysiology 1995, Board qualified in neurology 1998.
Board certified Somnologist: Scandinavia 2009, European: 2012.

Academic degrees
Prize medal (Gold): Sleep in the elderly. University of Copenhagen 1985.
DMSc (doctoral thesis): Epidemiology of sleep apnea, University of Copenhagen, 1998.

Previous appointments:
Clinical education at Copenhagen University Hospitals 1983-1990 and 1991-2001, 1990 affiliated with University of Minneapolis, Minnesota, USA. Current position since 2001.

Scientific Production
More than 150 peer reviewed papers and more than 350 international presentations and invited lectures regarding sleep medicine, epilepsy, motor control, neurodegenerative and neuro-urological topics in several scientific societies.

Review function
Several international Journals, including Acta Scandinavica Neurologica, Pharmacology and Toxicology, Sleep, Sleep Review, Thorax, Obesity Review, Journal of psychosomatic research, European Journal of Neurology, Surgical Neurology, Acta Scand Pediatrica, ERJ.

Positions and international research
Chair of scientific board, Glostrup University Hospital. Chairman of Danish Nationale Quality Database. Chairman of Danish Sleep Research Society (2001-), Chairman of Scandinavian Sleep Research Society 2001-3. Board member of Brain Awareness Week 1997-2005, member of national neurological, neurophysiological and epilepsy societies, European Sleep Research Society, European Neurological Society, World Association of Sleep Medicine. Referee at 3 PhD thesis. Chairman of Interregional Food and Pharma, Obesity, the Oresund Region.
Chairman of health technology assessment (sleep apnea, 2004-6 and from 2012+) and member Nordic health technology assessment (sleep apnea, Danish representative2005-7), Chairman of EFNS guidelines (management of sleep disorders, 2006-12). 2005 chairman of EFNS scientific committee regarding sleep disorders (2006+). EU COST B26 sleep apnea 2005-11), and EU Chairman of workgroup regarding sleep apnea, genetics and genetics chairman of the scientific committee. Board member of Executive Committee in Association National Sleep Societies (2008-12). Member of European Narcolepsy Network/EU and the international RBD study group (2006+), member of International RBD group. Chairman of several national scientific societies.

Current research
Sleep mechanism. Mechanism of narcolepsy, sleep disorders in relation to neurodegenerative disorders, sleep apnea. Methods in sleep and epilepsy. Socio-economical consequences of sleep and neurological diseases. Research group includes more than 15 postdocs and PhD and master students.

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Methods for determinations of sleep related phenomena's

Poul Jennum, professor
Danish Center for Sleep Medicine, Glostrup University Hospital. Denmark

Sleep disorder consists includes a number of disorders which are classified in accordance to International Classification of Sleep Disorders (ICSD 2, in 2013 a 3rdversion is expected). The evaluation of these disorders involves a number of methods. Central in the evaluation is the gold standard polysomnography (PSG) which includes evaluation of electroencephalography (EEG), electrooculography (EOG), electromyography (EMG), electrocardiography (ECG) and respiratory measures. This method may be performed in-hospital supplied with a number of additional recordings (e.g. additional EEG channels, video-monitoring, other physiological measures). For the scoring and standards for setup the American Academy of Sleep Medicine (AASM, 2007) is suggested. Simpler methods are often used for specific purposes, e.g. polygraphy (or cardio respiratory measure – CRM) for the identification of sleep related breathing disorders, actigraphy for the determination of movement (a surrogate for wake-sleep activity) etc. The validity of these simpler methods is lower, but the value is that they are simpler, less costly and are easier to use in ambulatory settings.

Evaluation of hypersomnia

Poul Jennum, professor
Danish Center for Sleep Medicine, Glostrup University Hospital. Denmark

Hypersomnia is a term used for a wide range of clinical conditions ranging from fatigue to excessive daytime sleepiness (EDS). Hypersomnia is very common in the general population with causes ranging from exhaustion; losses of sleep, use of medication, alcohol, medical or psychiatric conditions, sleep disorders etc.

Evaluation of EDS may be performed using questionnaire information like Karolinska Sleepiness Scale (KSS), Epworth Sleepiness Scale (ESS) (also developed for children). These scales are widely used although especially the later they are activity/behaviour dependent. Cognitive methods including vigilance test, driving capabilities, reaction time tests, but the clinical relevant have not been proven. In clinical practice the Multiple Sleep Latency Test (MSLT) evaluate the tendency to fall asleep and the sleep structure in the initial part of sleep tested in a standardized protocol using 4-5 tests and is particular important to . The Maintenance of Wakefulness Test (MWT) evaluates the ability to stay awake.

The MSLT is particular important for the evaluation of central hypersomnias (narcolepsy with and without cataplexy, idiopathic and periodic hypersomnias). New classifications now distinguish narcolepsy/hypocretin deficiency (also called type 1 narcolepsy), a lifelong disorder with well-established diagnostic procedures and aetiology, from other syndromes with hypersomnolence of unknown causes.

NOTES

Ioana MINDRUTA

44-year old, neurologist, with competence in electrophysiology and special interest in epileptology, mainly presurgical exploration for epilepsy surgery. PhD thesis on “Sleep studies in epileptic syndromes”.
Current position - University Emergency Hospital in Bucharest in the Epilepsy and Sleep Monitoring Unit and also hospital coordinator of the National Programs for Pharmacoresistant Epilepsy and Rare Disorders.
Academic affiliation - lecturer in neurology at the University of Medicine and Pharmacy “Carol Davila” of Bucharest.
Vicepresident of Romanian Association for Clinical Electrodiagnosis (ASNER) since 2009 and member in the board of Romanian Society of Neurology since 2013.

Epilepsy and sleep

Ioana Mindruta, University Emergency Hospital, Bucharest

The relationship between epilepsy and sleep is complex as seizures may be exacerbated by sleep deprivation and some seizures mainly occur during sleep.

Nocturnal seizures could be misdiagnosed as parasomnia and vice versa.

Sleep disorders may aggravate epilepsy and epilepsy may disturb sleep.

Usually the clinician is confronted with patients complaining on nocturnal events that raise diagnostic difficulties. During the presentation, I will give relevant examples from clinical practice showing how to reach the diagnosis for different puzzling conditions.

There is also a relationship between sleep state and interictal epileptiform discharges (IEDs) on EEG recordings. In temporal lobe epilepsy, for example, most patients have increased IEDs in NREM sleep stages 3 and 4 compared with lighter NREM sleep and REM sleep. Sleep-modulated IEDs may have localizing value.

Sleep studies in epilepsy provide complementary arguments for diagnostic as well as for prognostic purpose and the presentation will provide examples when sleep recordings had a major contribution.

Workshop tutor: on “The EEG interpretation in epilepsy”

This workshop is dedicated to neurologists that achieved a certain practice in EEG interpretation but feel that they still have difficulties recognizing EEG patterns and integrate this information in the clinical context to guide therapeutic options and formulate prognosis for patients suffering from epileptic seizures.

The group will be asked to review with the tutors several clinical cases with the teaching purpose to learn how to run relevant studies, how to assess the information obtained, how to integrate with history and seizure semiology, how to finally reach a diagnostic and make therapeutic and prognostic recommendations.

The participants will be finally asked to pass a test consisting in a clinical case solved on their own knowledge.

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Mircea MOLDOVAN

Dr. Mircea Moldovan, graduate of the “Carol Davila” University Bucharest, Doctor of Medical Sciences, MD is a neurologist at the Hospital “Elias” Bucharest since 1968. Throughout his career, he had a continuous interest for clinical neurophysiology. In the 80s, his main interest was the EEG and evoked potentials under the guidance of Prof Dr V Voiculescu. In the 90s, his interest expanded to the peripheral conduction studies and EMG. During his pioneering work in Romanian clinical neurophysiology, Mircea Moldovan advocated the diagnostic importance of clinical neurophysiology for neurological practice through talks at national scientific meetings and scientific publications. Most importantly, however, through his wealth of practical experience and didactic spirit, he helped initiate in clinical neurophysiology generations of young neurologists. During the last decade, with the transformation of “Elias” hospital neurology into a university department and re-formalizing his skills in EMG (2003) and EEG (2004), Dr. Mircea Moldovan developed his preoccupation for clinical neurophysiology teaching. Together with Dr. Ionela Codita he carries out practical demonstrations of post-graduate courses organized by Professor Dr. Panea EMG. In addition, Dr. Mircea Moldovan contributed to re-launch of the clinical neurophysiology society in Romania as founding member of ASNER 2009.

Isolated motor lesion of the ulnar nerve in Guyon's canal

Moldovan Mircea, Codita Ionela, Neagu Oana Camelia, Rotaru Bogdan,
Neurology Department of Elias University Emergency Hospital, Bucharest

Higher extremity mononeuropathies are some of the most common disorders seen in neurophysiology. Ulnar nerve neuropathy is the second most common focal neuropathy by frequency and importance, as by the nerve affection, the hand functionality can drop to 80%. The 70 yrs old patient, was investigated electrophysiologically for the painless functional deficit of the right hand, with difficulty gripping and twisting objects, installed during domestic activities. Standard EMG examination was performed for determining the segments motor and sensory parameters, and the latency, amplitude and proximal and distal VCM. Determination of distal latency, CMAP and VCM amplitude on the fist/elbow and arm segments was within normal limits. Sensitive latency fist / finger V was normal. Dorsal cutaneous nerve determinations values were normal, as were for the median nerve. We obtained a pathological difference of more than 0.5 ms at fist stimulation and recorded in the II palmar space through the ulnar nerve latency prolongation. EMG examination found a normal aspect in ulnar flexor nerve of the wrist and ADM with denervation aspect in the first dorsal interosseous and adductor pollicis. It was considered to be an injury to the deep motor branch of the ulnar nerve at palmar level There are described three areas of the hand that can produce individualized injuries. There are described three zones of the hand which can produce individualized injuries. Zone 1, in the proximal portion of the canal, where the nerves structure is composed of both motor and sensory bundles, and distal zones 2 and 3, where the ulnar nerve can be affected separately, either motor or sensory.The clinical symptoms were considered to indicate a type II lesion in the Guyon canal, rarely seen in clinical practice. The most frequent causes are long duration pressure or the presence of locally compressive abnormal formations. The electro clinical syndrome represents a real canalicular syndrome.

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Mihai MOLDOVAN

Mihai Moldovan obtained his medical degree from “Carol Davila” University Bucharest in 1999. Based on his research interests as a student, after graduation he was selected to work in the group of prof. Christian Krarup that continues the Copenhagen neurophysiology school founded by prof. Fritz Buchthal in the 60' with the aim of translating experimental neurophysiology into clinical electrodiagnostic procedures for patients with nerve and muscle disease.
Mihai Moldovan obtained his PhD degree in neurophysiology from Copenhagen University in 2004 where he continues his scientific career as associate professor. His research is focused on distinguishing the contribution of voltage-gated ion channel dysfunction to pathophysiology of neurodegenerative disorders, with particular emphasis on peripheral nerve excitability testing. While based in Copenhagen, Mihai Moldovan continued to collaborate with prof. Leon Zagrean at “Carol Davila” University, Department of Physiology and Neuroscience.
In 2011, he founded the COMAEEG.RO international network, bringing together Romanian neuroscientists, clinicians and engineers dedicated to improving the monitoring of the comatose brain excitability. Emerging from these wide research interests are not only original publications and review articles in international journals but also educational chapters in neuroscience and neurophysiology textbooks in Romanian language.

Mihai Moldovan has scientific duties in several international organizations including International Brain Research Organization (IBRO) and the European Federation of Neuroscience Societies (FENS).
He is also founder and acting president of the National Neuroscience Society of Romania (SNN) and founder of the Romanian Society of Electrodiagnostic Neurophysiology (ASNER) for which he now serves as scientific director.

For his activity he received several international and national prizes and he was recently appointed editorial board member for Clinical Neurophysiology, the official scientific journal of the International Federation of Clinical Neurophysiology (IFCN).

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EEG outcome measures in coma

Mihai Moldovan, Copenhagen University DK and Carol Davila University, Bucharest

During comatose states occurring after hypoxic-ischemic brain injuries or general anesthesia the patients lose their awareness and become unresponsive to external stimuli. Nevertheless, their brain EEG reactivity to various somatosensory stimuli is preserved to various degrees. Evoked potential measurements, while very useful in assessing primarily the integrity of the sub-cortical pathway, offer limited information about the cortical function itself. The discontinuous “burst-suppression” (BS) EEG activity that appears during deep comatose states (Synek's grade 4-5) is a cortical phenomenon under the influence of subcortical activity. The current dogma is that when the bursting occurrence can be altered by external stimuli, then this may be an indication of a better prognostic. Nevertheless, even when some stimuli can appear to evoke bursts (i.e clapping), at stimulus repetition, other seem to fail, making the investigation of BS reactivity appear an unreliable prognostic marker. As there are no standardized protocols for assessment of BS reactivity, its clinical value remains poorly understood. This presentation reviews our current work at the ComaEEG.RO on standardizing measures of BS reactivity, using patient investigations and experimental studies in rodents. Monitoring the “suppressed” brain integrity may become increasingly important with increasing use of therapeutic general anesthesia and hypothermia during the coming years.

The clinical value of nerve stimulation threshold

Mihai Moldovan, Copenhagen University DK and Carol Davila University, Bucharest

A century ago, the neurophysiological investigation of peripheral nerves relied on measuring their excitability. When, after a traumatic lesion, a nerve became “unexcitable” it was presumed that the nerve was “dead”. Such an assessment relied on the stimulation current used: i.e. was the nerve really “dead” or the stimulation current was not enough to reach the “threshold” for action potential generation?. This was particularly confusing in conditions of demyelinating neuropathies where the thresholds were increased while the nerve integrity was preserved. The first attempts to standardize stimulation currents culminated with the wide-spread use of rheobase of chronaxie as clinical measures of nerve excitability. Nevertheless, with the advent of nerve conduction studies, the popularity of excitability studies faded. It was only during the last decade that nerve excitability studies regained their clinical interest. This was possible due to the introduction of the “threshold-tracking” nerve excitability testing techniques. By use of a computer-controlled feedback system and mathematical modeling, it is now possible to investigate the function of various voltage-dependent ion channels that contribute to the excitability of peripheral myelinated axons. This generated a wealth of knowledge about the inherited and acquired channelopathies that could affect peripheral nerves. This presentation will address how much information electrodiagnostic information we can obtain from threshold measurements, with or without having the specialized “threshold-tracking” hardware.

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Dafin Fior MURESANU

President of Romanian
Society of Neurology since 2013

Dafin F. Muresanu, MD, PhD, MBA, is Professor of Neurology, Chairman of the Clinical Neurosciences Department, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, member of the Academy of Medical Sciences, Romania. He is also President of the Society for the Study of Neuroprotection and Neuroplasticity. In these roles, he acts as coordinator in international educational programs of European Master type (European Master in Stroke Medicine, University of Krems), organizer and co-organizer of European and international schools and courses (Eastern European Neurology Summer School for Young Neurologists-www.ssnn.ro, European Stroke Organization Summer School, Danubian Neurological Society Teaching Course). His activity includes his involvement in many clinical studies and research projects, his membership in the executive board of many national and international societies, participations as invited speaker in national and international congresses, and a significant portfolio of scientific articles, contributions in monographs and books published by prestigious international publishing houses. Prof Dr: Muresanu has been honored with the Faculty of Medicine, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca "Octavian Fodor Award" for the best scientific activity of the year 2010 and the 2009 Romanian Academy of Medical Sciences "Gheorghe Marinesco Award" for advanced contributions in Neuroprotection and Neuroplasticity.

NOTES

Tudor LUPESCU

Tudor Dimitrie Lupescu obtained the medical degree from "Carol Davila" University of Medicine in Bucharest, in 1989. In 1995 he became a Specialist in Neurology, after 3 years of training at Colentina Hospital, Bucharest. Since 1996 he works at "Agrippa Ionescu"Hospital in Bucharest, where in 1999 he became Head of the Neurology Department. In 1998 Tudor Lupescu qualified as Consultant Neurologist. Since the early years of training in Neurology, Tudor Lupescu has shown a special interest in Clinical Neurophysiology, and in 2000 he earned a Competence in Clinical Neurophysiology (Electroencephalography, Electroneuromyography, Evoked Potentials). 1997 he introduced the technique of transcranial magnetic stimulation in Romania. 2005 Dr Lupescu earned the title of PhD with the thesis: "Motor Evoked Potentials. Transcranial Magnetic Stimulation." Since 1996 Tudor Lupescu was the secretary of the Romanian Society of Clinical Neurophysiology, and since 2008 – president of ASNER – the Romanian Society of Electrodiagnostic Neurophysiology. He is also founding member and vicepresident of the Romanian Society of Diabetic Neuropathy.

Since 2008 Tudor Lupescu is member of the Subcommittee for Neurophysiology of the European Neurological Societies.
Dr Tudor Lupescu is associate member of the American Academy of Neurology, and of the American Association of Neuromuscular and Electrodiagnostic Medicine.

Neuropathies from electrophysiology to etiology

Tudor Lupescu, "Agrippa Ionescu" Hospital, Bucharest

Very often, electromyographists are expected to establish a final diagnosis of the neuromuscular disease of the patient who is referred to them. In most instances, the electrodiagnosis is just a functional diagnosis, and there are other ancillary & clinical findings necessary for the etiology. Nevertheless, some findings of the electroneuromyography, some details regarding the onset of the disease, the pace, distribution, and extent of the deficits, can give us important clues about the etiology.

Botulinic toxin injection under EMG guidance

Tudor Lupescu, "Agrippa Ionescu" Hospital, Bucharest

The injection of botulinum toxin is an important therapeutic method used in some neurological disorders. The presentation will emphasize the basic principle of this method, the disorders that can benefit from it, and some practical aspects.

NOTES

Simona PETRESCU

Simona Petrescu is currently working as a Senior Neurologist with competence in Clinical Neurophysiology (electroencephalography-2007- and electroneuromyography-2008) and in Cerebral vascular Doppler examination, in the Neurology Department of Elias University Emergency Hospital in Bucharest. She is also, assistant professor affiliated at the University of Medicine and Pharmacy "Carol Davila" of Bucharest since 2008 and she earned the title of fellow of European Board Neurology in 2010 in Geneva. She started her PhD thesis, "Biomarkers in Multiple Sclerosis" in 2007.

Motor neuron disease variant or multiple mononeuropathy ? Case report.

Simona Petrescu, Ionela Codita, Raluca Gurgu, Mircea Moldovan, Cristina Panea,
Neurology Department of Elias University Emergency Hospital, Bucharest

We present the case of 64 years old male who has neurological symptoms which started in 1995 with distal weakness and minor parestesia without pain on upper right limb. The motor weakness extended progressively to the proximal segments of the right arm. In 1999 the patient remarked weakness of the left limbs predominantly of the arm following the same pattern.

His clinical features revealed weakness of both arms (more evident on right side) and of his left leg with atrophic muscles, with abolished osteotendinous reflexes and distal mioartrokinetic and vibration hypoestesia of limbs. No signs of corticospinal tract were found at physical examination.

Magnetic resonance imaging of brain and cervical spine showed myelopathic changes of spine parenchyma at level C4 to C6 (after surgery at this level).

Electromyographic assessment with neurography and needle exam showed multiple neuropathies of different motor and sensitive nerves with scanty spontaneous muscular activity.

Because the underlying disease is multifocal and asymmetric we asked for nervous and muscular biopsy. Nerve biopsy showed predominantly axonal neuropathy. Muscular biopsy showed muscular lesions caused by nerves disease. No inflammation was observed at nerve or muscle sites.

We present this case because of particular clinical features which suggest a form of motor neuron disease ("flail arm" -like syndrome), but the EMG and biopsy features established a different diagnosis.

NOTES

Izabela POPA

Izabela Popa graduated the University of Medicine and Pharmacy, Timisoara in 1999. She finished internship and residency in neurology in Timisoara and became neurologist in 2006. Followed clinical neurophysiology trainings at the Department of Neurology, University of Szeged, Hungary (2004), Department of Neurology, University of Leipzig, Germany (2005) and the Department of Neurophysiology, Uppsala University Hospital, Sweden (2008, 2011). In 2007 earned competence in electromyography and nerve conduction studies and in 2009 received a Certification for Electrophysiological Testing from Albert Einstein College of Medicine of Yeshiva University. Since 2007 she works as a private practitioner with special interest in neurophysiology.

How the guidelines should guide us?

Izabela Popa, Timisoara

By definition, a guideline is a statement by which to determine a course of action, is a document with the aim of guiding decisions and establishing criteria regarding diagnosis, management and treatment in specific areas of healthcare.

With the help of guidelines, we should be able to improve parameters such sensitivity, specificity and cost-effective index but, above all, guidelines are instruments leading us to correct diagnosis.

Very important is not to forget that guidelines are not binding and are not enforced, are never mandatory.

Two cases will be presented, both with very alarming signs: fasciculations and hyperreflexia!

The aim of the presentation is to "trigger" a discussion about when and whom to apply the guidelines and eventually, is this a matter of ethics?

NOTES

Bogdan Virgil ROTARU

The Quervain's tenosynovitis

Bogdan Virgil Rotaru, Mircea Moldovan, Smarandita Lacau, Oana Neagu,
Neurology Department of Elias University Emergency Hospital, Bucharest

Hand numbness or pain is a common cause for requesting neurographic testing and EMG. The goal of this presentation is to present a less commen condition, but which is often confused with carpal tunnel syndrome. It was named after a Swiss surgeon – Fritz de Quervain, who described it in 1895. Synonyms: player's thumb, laundresses' hand, mother's wrist, radial styloid tenosynovitis, de Quervain's disease.

The two tendons involved belong to abductor pollicis brevis and extensor pollicis longus muscles.

The cause remains idiopathic, although it is suspected that chronic overloading of these muscles during repetitive movements of the thumb induces inflammation of the tendons, limiting free movement in the carpal tunnel.

Osteoarthritis, posttraumatic scars, may also induce tenosynovitis.

Patient experiences pain at the base of thumb and the distal extremity of the radius, tenderness, swelling, especially in grasping movements, pinch; one also feels a blocking sensation of the thumb.

Nerve conduction study is usually normal, excluding a carpal tunnel syndrome.

MRI of the wrist shows signal enhancement of the involved tendons and nearby tissues and small joints.

Treatment options consist of anti-inflammatory drug and surgery.

NOTES

Raluca TELEANU

Raluca Teleanu graduated the University of Medicine and Pharmacy Tirgu-Mures in 1996. She became specialist in Pediatric Neurology in 2002. She earned competence in neurophysiology (electroencephalography, computerized EEG, electromyography and potential cortical evoked) in 2002.
Current position: chief of Pediatric Neurology Department of "Dr. V. Gomoiu" Children Clinical Hospital in Bucharest and associate professor "Carol Davila" University of Medicine, Bucharest.

Electrical Status Epilepticus in Sleep Spectrum Disorders

Raluca Teleanu, Smaranda Nita, Magdalena Sandu, "Dr. Victor Gomoiu" pediatric hospital, Bucharest

Electrical Status Epilepticus in Sleep (ESES) represents a rare electroencephalographic pattern characterized by potentiation of interictal epileptiform activity in the transition from wakefulness to sleep which can be encountered in a spectrum of clinical syndromes with common features but different degrees of severity: Continuous spikes and waves during sleep (CSWS), Landau-Kleffner syndrome and the "benign" pediatric focal epileptic syndromes like benign childhood epilepsy with centrotemporal spikes (BECTS), Gastaut and Panayiotopoulos syndromes. Despite the common triad that the ESES spectrum disorders share, consisting in seizures, sleep potentiation of epileptiform activity and neuropsychological regression, some cases present overlapping features and clear boundaries between the syndromes are hard to trace.

We will discuss three pediatric patients aged six to eight years, with polymorphic epileptic seizures, various degrees of neuropsychological delay and electroencephalographic sleep potentiated epileptiform discharges. While two of the patients present features consistent with CSWS and BECTS, respectively, the third case is characterized by overlapping features within the ESES spectrum. We emphasize the importance of EEG sleep recordings and rigorous evaluation of neuropsychological profile of these patients.

NOTES

Josep VALLS SOLÉ

Studies:
School of Medicine in the University of Barcelona 1967-1972. Specialization in Physical Medicine and Rehabilitation 1972-1976. Specialization in Neurology 1976-1980. PhD in 1985 on Single fiber EMG with conventional electrodes

Internship in Medicine Hopital Civil d'Strasbourg France 1980-1982
Research Fellow on Central neurophysiology National Institutes of Health Bethesda. USA 1990-1992 with Mark Hallett
Research Fellow on TMS and Motor Control in the National Neurological Hospital London, 2001 with John Rothwell

Duties:
Presently: Senior Consultant in Neurology Department and responsible for the EMG Department in Hospital Clinic, Barcelona, full professor Faculty of Medicine at the University of Barcelona, and Research Coordinator Neurophysiology Research Group at the IDIBAPS (Institut d'Investigació August Pi I Sunyer)
1998-2008: Teaching Coordinator Institute of Neurology. Hospital Clinic
1998-2005: Secretary Brainstem Society; 2010-2013. President Brainstem Society
1999-to present days: Director of the University Course Master on Electrodiagnostic Neurology
2000-2008 and 2011- to present days: Book Review Editor Clinical Neurophysiology
2004- to present days. Associate Editor Clinical Neurophysiology
2008 to present days: Teaching Coordinator for the University of Barcelona course on Neurological diseases
2010- to present days: President Brainstem Society
2012 to present days: Deputy Editor Brain Stimulation

My present focus in research is on neurophysiology and, specifically, on Electromyography of motor control and pain. I have been involved in the study of movement disorders for many years and I have included neuropathic pain as another line of interest in recent years. I have been awarded 3 national Best Research prices and have received up to 15 national grants and european grants. I have been author of more than 220 manuscripts and 50 book chapters.

NOTES

Neurophysiological assessment of painful neuropathies

Josep Valls-Sole, Neurology Department. Hospital Clinic. Barcelona, ES

There are no means to objectively assess pain. This is a personal experience that, in some cases, is related to a neuropathic lesion and, then, it is labelled as neuropathic pain. It is important for the clinician to diagnose the presence of a neuropathic lesion that may cause pain because it has specific treatment and management. Conventional electrophysiological tecniques may not be able to show lesions that affect specifically small nerve fibers. However, the electrodiagnostic expert can make use of specific tools to investigate the nociceptive system: the application of nociceptive stimuli and the psychophysical evaluation of temperature and pain sensations. Radiant heat (laser) and contact heat (thermodes) are the stimuli most often used to specifically activate nociceptive skin terminals. These generate scalp evoked potentials and sudomotor skin responses, which can be recorded at the appropriate latency. They are often abnormal in patients with small fiber neuropathies. Regarding psychophysical testing, thermal threshold determination is the most commonly used exam but the yield of quantitative sensory testing can be increased with the use of slightly sophysticated methods. One is dynamic thermotest in which the subjects are asked to express their sensation to slowly changing thermode temperature. The other is to place the subjects hand on top of a pre-heated or pre-cooled thermode. Data gathered from these tests will be discussed in the presentation.

Assessment of excitability in brainstem circuits mediating the blink reflex and the startle reaction

Josep Valls-Sole, Neurology Department. Hospital Clinic. Barcelona, ES

Excitability is probably the concept that fits better with the definition of the role of neurophysiology in the study of brainstem functions and circuits. The best known test of brainstem excitability is the blink reflex. A single unilateral stimulus induces responses in both sides (consensual reflex), which can be used to ascertain whether an eventual abnormality lies in the afferent or in the efferent arm of the reflex. The size of the response is an indirect expression of the readiness of the interneuronal path and the facial motoneurons to fire, and may show abnormalities in hemifacial spasm or in supranuclear lesions. Pairs of stimuli (conditioning and test) are suited to analyze the degree of excitability recovery after a single discharge and may be an expression of the brainstem interneuronal control by the basal ganglia. Another brainstem reflex circuit, which excitability testing can be of interest for physiological and clinical exams is the one involved in the startle reaction, which indicates also another path through which the basal ganglia control brainstem interneuronal excitability. Both, the blink reflex and the startle reaction are modulated by prepulse inhibition, defined as the inhibitory effect caused by a stimulus of an intensity low enough not to induce a response by itself on the response elicited by a subsequent stimulus. The circuits of the blink reflex, startle reaction and prepulse inhibition share some commonalities but they are different enough for the three techniques to provide unique, clinically relevant, information in health and disease.

NOTES

Vasile TIBRE

1993-1998: Assistant Professor at the Department of Physiology, Univ. of Medicine of Cluj-Napoca
1998-2003: Assistant Professor at the Department of Neurology, Univ. of Medicine of Cluj-Napoca.
1999: Senior Neurologist
2003- present: Associate Professor at the Department of Neurology, Univ. of Medicine of Cluj-Napoca.

2008-2009: working as neurologist in differents hospitals in France
2008-2009: One year Specialisation in Sleep Diseasse, Pitie Salpetriere, Paris
2009-present: Remplacements in different private cabinets (France, Guadeloupe, Martinique)
2012- Working as neurologist in Sleep Center, University of Medicine, Strasbourg
Teaching experience:
2002-2006: Organiser and lecturer of postuniversitary training course in Neurophysiology along with other lecturers from abroad (International participation)
2006: “Training course in EMG and Evoked Potentials“ organized by Liamed SRL. Mangalia, june (lecturer)
2006: lecturer post graduated course “Chronic pain in oncology”, organizer Assist. Prof. Dr. Gabriel Kacso, Oncology Department, UMF Cluj-Napoca
Research interest
Monitoring the neurotoxic effects of chemotheraphy in peripheral nervous system by clinical and neurophysiological approach.- Doctoral Thesis 2007
Assesment of autonomic neuropathy by electrophysiological techniques (heart rate variability, sympatethic skin response)

Assesment of Conduction Block in peripheral nerves

Vasile Tibre, Seewooram Ritesh Department of Neurology,
Faculty of Medicine of Cluj-Napoca, Romania

The concept of motor nerve conduction block has gained more importance with the identification of new disease entities like MMN, CIDP in the eighties. Technically, there some condition to respect when we stimulate one nerve at different places in order to define a conduction block or normal or abnormal temporal dispersion.

In this presentation we tries to show you our experience concerning criteria of demyelinating in peripheral nerves. Also, we presents a short review from literature with different anatomical variants responsible for anomalies of conduction in peripherals nerves.

NOTES

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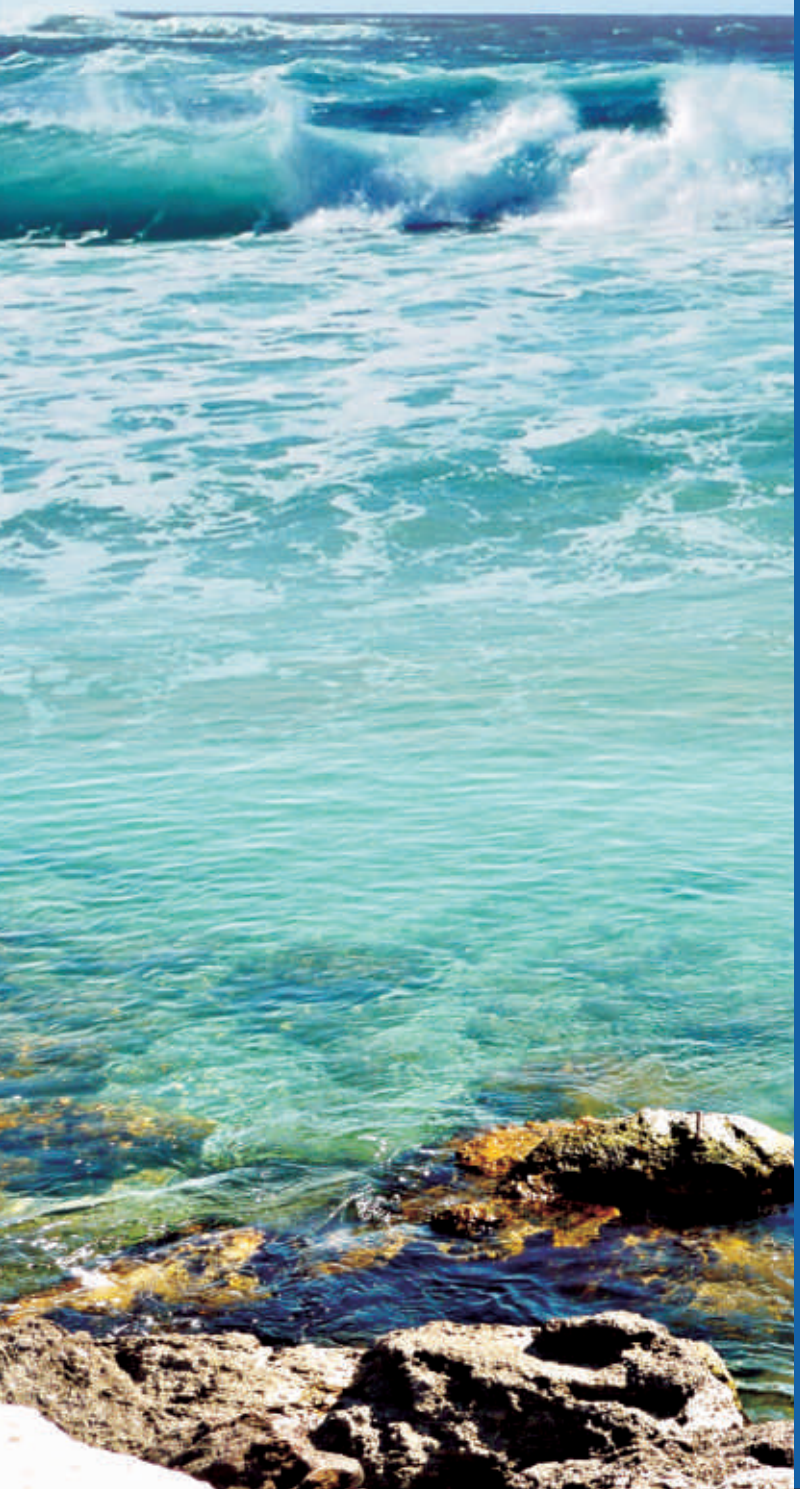

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