ASOCIAȚIA SOCIETATEA DE NEUROFIZIOLOGIE ELECTRODIAGNOSTICĂ DIN ROMÂNIA

EFORIE NORD, Hotel EUROPA, România

8 - 10 iulie 2011

Școala de Vară Neurofiziologie Clinică

PROGRAM FINAL

CAIET DE REZUMATE

IFCN-EC

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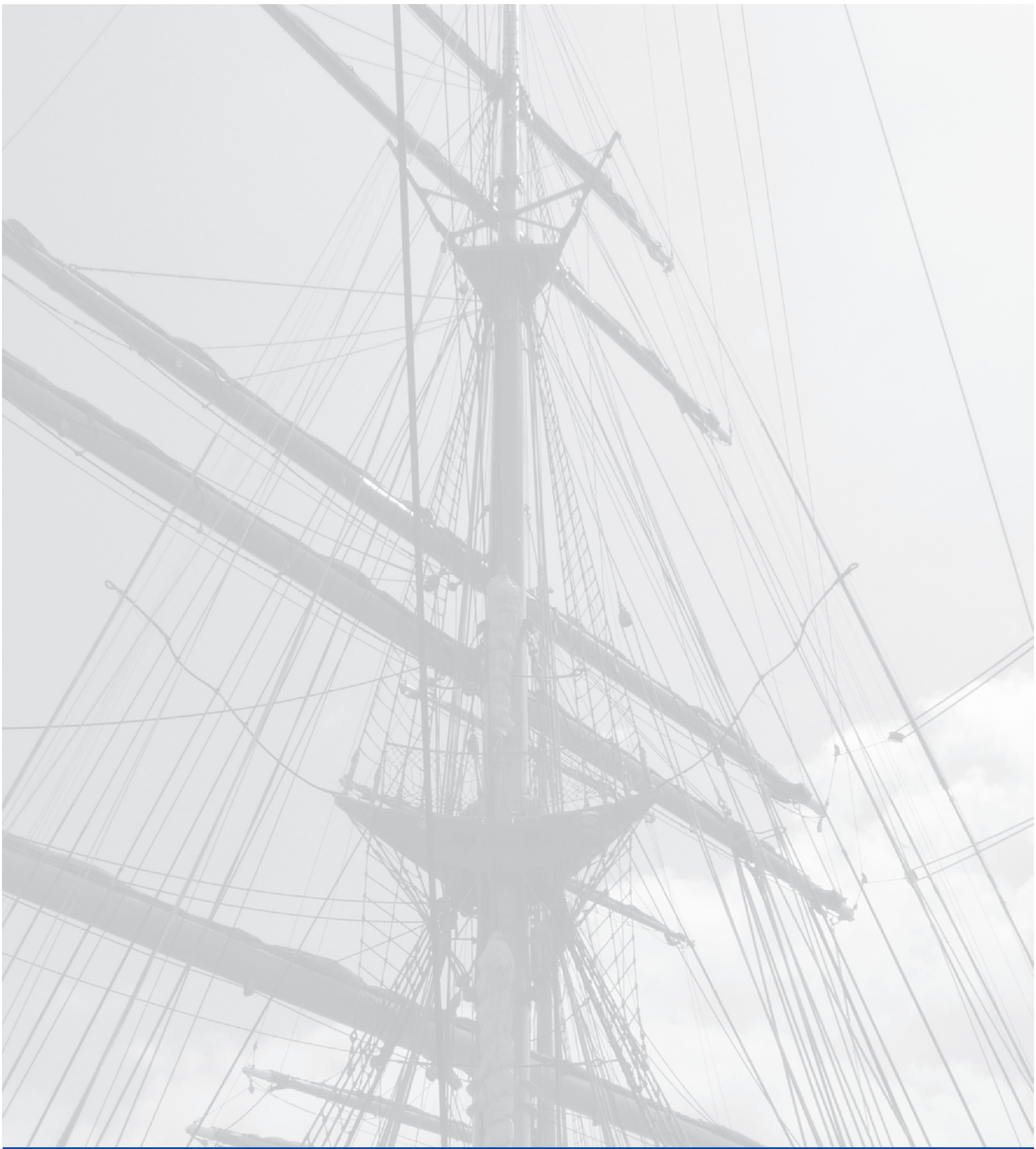

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8 - 10 iulie 2011

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INREGISTRAREA LA SCOALA DE VARA NEUROFIZIOLOGIE CLINICA 2011: toate informatiile si materialele sunt disponibile la biroul de inregistrare din cadrul standului ASNER. Echipa ASNER va fi incantata sa va puna la dispozitie detaliile de inregistrare, materialele si programul. Nu ezitati sa solicitati ajutorul membrilor echipei ASNER .

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PROGRAM:
Vineri, 8 iulie 2011: 13.30- 19.00;
Sambata, 9 iulie 2011: 8:30 – 18.00;
Duminica, 10 iulie 2011: 9.00 – 13.30;

Diplomele de participare se elibereaza la inchiderea Scolii de Vară Neurofiziologie Clinică 2011.
Programul Caietul de rezumate – se inmaneaza participantilor in momentul inscrierii la standul ASNER.
Telefoanele mobile - este extrem de recomandat sa fie inchise pe durata sesiunilor stiintifice.
Contact: orice alta informatie va poate fi oferita la standul de inregistrare ASNER sau pe
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PLATA TAXEI DE PARTICIPARE ASIGURA:
-Participarea la sesiunile stiintifice si atelierele practice
-Cina din 8 iulie, Cina din 9 iulie
-Consumatia din pauzele de cafea in 8, 9, 10 iulie
-Notele de Curs ale Scolii de Vara Neurofiziologie Clinica 2011
-Diploma de participare la Scoala de Vara
-Cazare in hotel Europa, functie de optiunile agreate de Dumneavoastra, cu mic dejun inclus.

ECUSOANELE:
Participantii sunt invitati sa poarte ecusoanele nominale; aceste ecusoane asigura accesul in salile de conferinta, ateliere practice, la cinele si pauzele de cafea.

SCHIMBARI ALE PROGRAMULUI:
Organizatorii nu isi pot asigura intreaga responsabilitate pentru schimbari ale programului Scolii de Vara Neurofiziologie Clinica datorate unor circumstante neprevazute externe.

Florin AMZICA

Prof Florin Amzica has graduated the Faculty of Computer Science, Polytechnics Institute Bucharest, Romania, and has earned his PhD in Neurobiology at the Laval University, Quebec, Canada. Regarding his career, he began as a Research Fellow - deisgn manager in the Laboratory for Biomedical Equipment, Electronics Research Institute in Bucharest (1983-1990), where he was involved in the design and software of electronic medical equipment (evoked potentials, visual stimulation for EP, screening audiometer, cardiotachometer); afterwards he moved to the Institute of Neurology and Psychiatry, Romanian Academy, Bucharest, where he had an important contribution in the application of the evoked potentials in neurosurgery, and the processing of evoked potentials (1990-1991). Between 1991 and 1995 he was a PhD student in Neurophysiology Laboratory at the Laval University.

Thereafter, Prof Amzica worked as a post-doctoral fellow in the same place, where he became Professor; since 2008 Prof Amzica works in the Neurophysiology Laboratory in Montreal University. His activity is based on the research related to neuron-glia activity during slee and wakefullness, deep brain stimulation, graduate courses and supervision of graduate students, and is also a member of the committee for ethics in health research.
During this time he earned many awards and distinctions. Professor Amzica is member of the Society For Neuroscience, the American Physiology Society, American Epilepsy Society, and Romanian Clinical Engineering and Computing Medicine Society. He was invited as speaker at many conferences and scientific meetings, and is author of many published articles and chapters in textbooks.

Intra-operative neuromonitoring: an American view

Florin Amzica, Université de Montreal, Canada

Invasive neurosurgery often impairs neuronal tracks or structures. If immediate measures are taken, these lesions might remain temporary and full recovery occurs. In order to detect such cellular insults in an early stage, more and more neurosurgery and orthopedic units in America, but also in Europe, require the services of a neurophysiologist for the monitoring of the brain functions. The intra-operative neuromonitoring addresses several issues: the general state of the brain, the integrity of the efferent (motor) and afferent (sensory) pathways, as well as of the cranial nerves. Other more specific forms are applied to resections of epileptic tissue. The general state of the brain is observed by means of scalp EEG recordings, which reveal the adequacy and depth of anesthesia (also in correlation with the dosage of the used anesthetics) and possible deteriorations caused by anoxia. The integrity of the neurological pathways, including those of cranial nerves, is tested by means of evoked potentials. Thus adequate stimulators and recording electrodes (EEG scalp screws, EMG needles) have to be provided. One has to bear in mind that motor functions are more sensitive to anoxia or injury than sensory ones. Thus, special emphasis is set for the monitoring of motor evoked potentials (MEPs) and triggered EMG. The latter is generally achieved by the neurosurgeon who stimulates a nerve or nervous structures he suspects to supply important neurological functions. The stimulation strategy during neuromonitoring is established as a function of the precise type of neurosurgery and location of the intervention. It requires tight team collaboration between surgeon, anesthesiologist and neurophysiologist. During the talk several cases will be presented and some legal aspects will be mentioned. It is important to realize that many of the principles supporting neuromonitoring in the operating room are common with those used in the clinical neurological practice.

Andrei BARBORICA

Andrei Barborica, PhD, is an Associate Professor in Electronics and Biomedical Engineering, Faculty of Physics, University of Bucharest. After obtaining his PhD in laser physics in 1994, he got more and more interested by computational neuroscience (1995-1998), then by systems neuroscience (since 1999) as a postdoctoral fellow at Mahoney Center for Mind and Brain of Columbia University (1999-2003). Currently, he is working on human electrophysiology for Deep Brain Stimulation, designing biomedical instrumentation and teaching at the University of Bucharest. He has been working in the past 12 years in animal and human electrophysiology, his field of interest including the understanding of high-order processes in prefrontal cortex like prediction and the maintenance of internal representations of visual targets. These non-human primate studies (Macaque monkeys), performed at Columbia University, were involving visual stimulation and electrophysiological investigation methods including single-unit recordings and microstimulation. During the past few years he has been performing electrophysiological research in humans for Deep Brain Stimulation treatment of movement, pioneering the DBS procedures in Romania, working along with the team at Bagdasar-Arseni hospital, lead by Dr. Jean Ciurea. He has acquired an extensive experience in human electrophysiology, participating in electrophysiological mapping of various Deep Brain Stimulation targets, in several centers in United States, France, Germany. Dr Barborica's achievements in biomedical engineering includes designing neuroscience instrumentation, including electrophysiological recording, electrical (micro)stimulation, behavioral control and others, now manufactured by FHC Inc, Maine, US.

Research Interests:
During the past decade I have performed a series of studies on the Frontal Eye Fields (FEF), helping in understanding high-order cognitive functions of the brain, like prediction, decision making, and encoding of complex visual stimuli features. I have been trying to understand how the frontal eye fields (FEF) are using the visual motion information to program eye movements and how FEF maintains a dynamic representation of occluded moving targets. These studies involved advanced visual stimulation and electrophysiological techniques (including microelectrode recording and stimulation) on of non-human primates (Macaque Monkeys), and most of this work has been performed at Columbia University in New York. Later on I have moved from doing non-human primate basic research to performing electrophysiological research in humans, particularly for Deep Brain Stimulation. I have expanded my field of interest into biomedical engineering, being the main architect and designer of an intraoperative monitoring system for functional neurosurgery, Guideline 4000, now manufactured by FHC Inc (Bowdoin, Maine, USA) and used in over 20 medical centers on 4 continents. In addition, I have designed several neuroscience instrumentation, including electrophysiological recording (APM), electrical (micro)stimulation (StimPulse), behavioral control (ECM) and others. I have acquired an extensive experience in human electrophysiology, participating in electrophysiological mapping for targeting of various nuclei used in Deep Brain Stimulation, in several centers in United States, France, Germany and Romania. Several human electrophysiology studies are in progress with collaborators abroad.
The biomedical engineering work has translated in various products now manufactured by leading companies in the neuroscience field (FHC Inc, USA) and used in over 20 medical centers around the world.

Ionela CODITA

Place of employment and position: Senior neurologist in Neurology Department, Elias University Emergency Hospital, Bucharest. She graduated "Carol Davila" University of Medicine and Pharmacy in Bucharest, she became a specialist in Neurology in 2000. In 2005 she earned a Competence in Clinical Neurophysiology. She attended many courses and teaching programs in the field of Clinical Neurophysiology (scholarship in Neurophysiopathology in Italy, San Donato Milanese, Training course in EMG and Neurography –Uppsala 2009, International SFEMG and QEMG Course –Kobe, Japan, 2010).

She is interested also in Epilepsy, Motor Neuron Disease, Movement Disorders. In her Neurology Department, she was involved in several research contracts, 6 finalized and 2 ongoing .

Diabetic Neuropathy Clinical and Electrophysiological Approach

Authors: Ionela Codita, Cristina Aura Panea, Mircea Moldovan, Raluca Gurgu
Neurology Department, Elias University Hospital of Emergency, Bucharest, Romania

Diabetes mellitus is associated with many different neuropathic syndromes, ranging from a mild sensory disturbance as can be seen in a diabetic sensorimotor polyneuropathy, to the severe pain and weakness of a diabetic lumbosacral radiculoplexus neuropathy. Based on clinical assessment only about 10 % of patients with diabetes have neuropathy, but with the more detailed protocol that includes quantitative sensory and autonomic testing and nerve conduction studies, the percentage is higher: 50 % of all diabetic patients. We will discuss the clinical features of diabetic polyneuropathy, the risk factors and the electrophysiological findings in the most frequent diabetic neuropathies (clinical cases).

D u m i t r u C O N S T A N T I N

Neurologist, Psychiatrist, Professor, Scientist and Novelist but much more than all these, a real researcher , a restless character, never satisfied with the conventional answers, He graduated in 1962 the Medicine University in Bucharest, then became specialist in neurology and psychiatry; in 1974 created the Neurological Clinic in the Central Military Hospital, Bucharest, Romania.As neurologist, is the author of more than 280 scientific works, also of the EEG and epileptology manual. Passionate about alternative medicine, he studied in Coreea, India and China. Awarded by the Romanian President in 2000 with the National Order “Steaua Romaniei” as a Commander Degree in 2004 with the National Order “Meritul Sanitar” as Officer degree. In 2005 he worked as visiting Professor in “St. George” University of Toronto, Canada, being involved in stem cells and nanomedicine domains.
He is an active member of Neurological , Psychiatry and Pshychological Societies in Romania and abroad.

ELECTROENCEFALOGRAFIA ÎN EPILEPSIILE REFLEXE (Rezumat)

Prof. dr. Dumitru Constantin

Epilepsiile reflexe constituie un capitol din neuropatologie care a beneficiat de o atenție inegală în literatura de specialitate.
În timp ce în tratatul lui C.P. Panayiotopoulos, epilepsiile reflexe ocupă un spațiu foarte extins pe multe zeci de pagini, în alte lucrări din domeniu sunt tratate doar în câteva pagini.
Diversitatea formelor, a condițiilor în care apar, diagnosticul lor electroclinic, modalitatea de manifestare și de tratament impun o abordare pertinentă și completă.
Pentru exemplificare, vom enumera doar câteva dintre formele de epilepsie reflexă : epilepsia noogenă, epilepsia fotosenzitivă, epilepsia primară de citit, epilepsia autoindusă, pattern-sensitiv epilepsy, Jeavon sindrom, epilepsia fotosensibilă de lob occipital, startle și tapping epilepsy etc.
În toate aceste forme evident, modificările electroencefalogtafice sunt de o indiscutabilă utilitate pentru precizarea diagnosticului, dar ceea ce le distinge și le conferă valoare diagnostică sunt de reținut condițiile în care aceste modificări apar : închiderea și deschiderea ochilor, înregistrarea într-o incintă luminată sau neluminată (menținută în întuneric) etc.
Lucrarea își propune să ofere toate elementele necesare unei însușiri corecte a acestui capitol deosebit de important și de puțin cunoscut al patologiei neurologice.

Bogdan FLOREA

Bogdan Florea graduated the "Iuliu Hatieganu" University of Medicine in Cluj-Napoca in 1997. After the five years training in the Neurological Clinic in Cluj Napoca, he became neurologist in 2005. Clinical neurophysiology fellowships in Italy – Modena and Bologna, USA – Mayo Clinic, Sweden – Uppsala doubled by the daily activity in the computerized EEG department of the Neurological Clinic and many teaching courses in this area recommend him as a passionate in neurophysiology. His research interests include also vortex magnetic fields effects on biological systems, neural networks, neuroplasticity.

In 2002 he graduated the educational Master of Sciences program in Kinesiology, Kinetotherapy and Physical Rehabilitation. He earned the Competence in Clinical Neurophysiology in 2005. Dr. Bogdan Florea is member of some professional associations, such the Romanian Society of Neurology, European Neurological Societies and founder member of the Society for the Study of Neuroprotection and

DECISIONS IN the NEUROLOGICAL ICU – the cEEG added value

Continuous EEG (cEEG) provides information about brain function that inform about changes in neurologic status, which is especially useful when the clinical examination is limited. Nonconvulsive seizures are common in comatose critically ill patients and can have multiple negative effects on the injured brain. The majority of seizures in these patients cannot be detected without cEEG. cEEG monitoring is most commonly used to detect and guide treatment of nonconvulsive seizures, including after convulsive status epilepticus. More than that, cEEG is used to guide management of pharmacological coma for treatment of increased intracranial pressure. cEEG is useful in detecting new or worsening brain ischemia in patients at high risk, especially those with subarachnoid hemorrhage. Improving quantitative EEG software is helping to make it feasible for cEEG (using full scalp coverage) to provide continuous information about changes in brain function in real time at the bedside and to alert clinicians to any acute brain event, including seizures, ischemia, increasing intracranial pressure, hemorrhage, and even systemic abnormalities affecting the brain, such as hypoxia, hypotension, acidosis, and others. Monitoring using only a few electrodes or using full scalp coverage, but without expert review of the raw EEG, must be done with extreme caution as false positives and false negatives are common.

Tudor Dimitrie LUPESCU

Tudor Dimitrie Lupescu was born on the 21th of March 1964 in Bucharest. He attended the Carol Davila Medicine University in Bucharest, and graduated in 1989. In 1992 he began his training in Neurology at Colentina Hospital in Bucharest, and became a specialist in 1995; since 1996 he works at Agrippa Ionescu Hospital, where in 1999 he became Head of the Neurology

Department. In 1998 Dr. Tudor Lupescu qualified as Consultant Neurologist. He showed a special interest in Clinical Neurophysiology, and attended many courses and teaching programs in this field, and in 2000 he earned a Competence in Clinical Neurophysiology (EEG, EMG, and Evoked Potentials).

In 1997 he began to use the technique of Transcranial Magnetic Stimulation.

In 2005 Dr. Lupescu earned the title of Ph D with the thesis: Motor Evoked Potentials. Transcranial Magnetic Stimulation. Since 1996 Dr. Lupescu was the secretary of the Romanian Society of Clinical Neurophysiology, and since 2008- President of the Romanian Society of Electrodiagnostic Neurophysiology : ASNER. Startin with 2008 Dr. Tudor Dimitrie Lupescu is also a member of the Subcomittee for Neurophysiology of the European Neurological Societies.

He is author of many articles, oral presentations, and posters, also of chapters of textbooks. He also shows clinical interest in multiple sclerosis, peripheral neuropathies, and movement disorders, including therapy with botulinum toxin.

Tudor Dimitrie Lupescu "EMG - What Is it Good For?"

This presentation tries to show the clinical meanings of the information provided by electrodiagnostic investigations. Although it is a functional method, the EMG findings can give clues about the etiology, mechanisms, evolution and outcome of many neurological (and not only) diseases. Thus we can help plastic surgeons, orthopedic surgeons, colleagues from the field of immunology, rheumatology, etc. to improve their diagnosis, and to choose their therapeutical means and methods. As much as we would like, we cannot always answer every question about localization of the lesions, the functional status, and the final clinical outcome, so it is ethical to outline the limits of the method.

In the end, the EMG provides answers. These answers are as precise and conclusive, as the question is more correct and pertinent. This is why we must always keep contact with the colleagues who refer patients to us, and have a continuous feedback.

Workshop 1 - The Neurophysiology of Multiple Sclerosis - Clinical Aspects

Multiple sclerosis is, from a neurophysiological point of view, a multifocal disease that affects the white (mainly), but also the gray matter in the central nervous system. Although the rapid development of neuroimagistics has led to elimination of the neurophysiology investigations in the diagnosis of multiple sclerosis, these can be used in evaluation of the physiological and functional burden of the disease, in monitoring the evolution. We present the major changes in visual, brainstem auditory, somatosensory and motor evoked potentials seen in multiple sclerosis.

Workhop 2 - Workshop EMG

This workshop is dedicated to needle-electrode investigation of the muscles. The participants will learn and practice the phases of the EMG: insertional activity, spontaneous activity, motor unit potential analysis (morphology, recruitment), and the pattern seen at maximal contraction.

I o a n a M I N D R U T A

Neurologist with competence in electrophysiology and special interest in epileptology and epilepsy surgery, working in the University Emergency Hospital in Bucharest in the Epilepsy and Sleep Monitoring Unit. Main research interest in invasive recordings for epilepsy surgery. Vicepresident of Romanian Association for Clinical Electrodiagnosis (ASNER) since 2009. PhD in 2006 on "Sleep in epileptic syndromes" Academic affiliation at the University of Medicine and Pharmacy "Carol Davila" of Bucharest since 1994.

Titlu : Contributia electrofiziologiei in chirurgia focarului epileptic - capcane in explorarea epilepsiei lobului temporal

Autor: Ioana Mindruta

Epilepsy is a chronic neurological disorder manifested by recurrent seizures. Despite of correct medical treatment, 20-40% of patients still experience seizures frequent enough to affect their life quality. For this category of patients, surgery of epileptic focus could give them a chance to became seizure free. Surgical treatment for temporal lobe epilepsy has a major benefit from standard resections. Even so, the extent of surgical resection is still decided by means of neurophysiology using video-EEG monitoring and invasive recordings.

The presentation will show clinical examples on how neurophysiology tools could be used to decide between a selective amigdalohypocampectomy versus an extended temporal lobectomy. Pitfalls, as seizures starting elsewhere and temporal plus epilepsies will be covered and discussed with relevant cases.

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. His primary research interest is the development of clinically applicable electrophysiological methods 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 first as scientific project coordinator and now as associate professor at the department of physiology. His research in Bucharest is focused on developing electroencephalographic biomarkers to monitor the ischemic disturbances in the electrical activity of the brain neuronal networks. Emerging from these wide research interests are not only original publications and review articles in high impact international journals but also educational chapters in several neuroscience and neurophysiology textbooks in Romanian language. Mihai Moldovan has scientific duties in several international organizations including International Brain Research Organization (IBRO). He is also founder member and scientific consultant for the National Neuroscience Society of Romania (SNN) and the Romanian Society of Electrodiagnostic Neurophysiology (ASNER) where he continues to promote the advantages of neurophysiological investigations for clinical practice.

Electrodiagnostic investigation of K+ currents by nerve excitability testing

Mihai Moldovan, MD PhD, Copenhagen University, Copenhagen, Denmark

Conduction velocity of myelinated axons is determined primarily by the passive cable properties (axonal diameter and myelin thickness) and by the nodal transient voltage-dependent Na+ channels. Hence, alterations in the function of the remaining membrane ion channel machinery including but not limited to voltage-gated K+ channels are not accessible by conventional nerve conduction studies (NCS).

Clues about the K+ channel function of peripheral axons in vivo can be obtained by nerve excitability testing, a "submaximal" computer-driven stimulation technique that is not more demanding for the patient than conventional NCS with surface electrodes. At least 2 distinct K+ currents were found to contribute to membrane excitability of peripheral myelinated motor and sensory axons: (1) a "fast"-kinetics current that can be blocked by 4-aminopyridine, mediated by the juxta-paranodal channels of the Kv1 family and (2) a "slow"-kinetics current that can be blocked by tetraethylammonium, mediated by the nodal and paranodal channels of the Kv7 family (known also as neuronal KCNQ channels).

Both "fast" and "slow" K+ currents can be altered during an electrolytic imbalance (renal failure), localization of "fast" K+ channels can be disturbed by paranodal demyelination (acute inflammatory demyelinating polyneuropathy) and channel gating of Kv1 and Kv7 can be altered by various pharmacological agents or neurotoxic-antibodies (paraneoplastic) with subsequent neuropathic symptoms. Furthermore, mutated K+ channels known to give rise to epilepsy are also present in the peripheral nerve even though neuropathic symptoms may not be apparent. To date, nerve excitability testing remains the only clinically available electrodiagnostic tool for these pathologies.

Workshop - A practical introduction to the TROND multiple nerve excitability testing protocol

Mihai Moldovan, MD PhD, Copenhagen University, Copenhagen, Denmark

The excitability of human motor and sensory axons can be studied in the clinical setting using the technique of threshold tracking, which allows the strength of a test stimulus to be adjusted by computer to activate a defined target fraction (typically 40%) of the maximal Compound Motor Action Potential (CMAP) or Compound Sensory Action Potential (CSAP). The tracked stimulus current that just evokes the target response is considered the "threshold" for that response. More informative than the "absolute" threshold are the relative threshold changes following a change in test stimulus duration (strength-duration properties), following prolonged subthreshold depolarization or hyperpolarization (threshold electrotonus) and following a supramaximal conditioning stimulus (recovery cycle). Each of these individual excitability measures depends on both distinct ionic conductances but also on membrane potential and passive cable properties of the investigated axonal population. A full sequence of excitability measures is therefore required to relate abnormal excitability measures to a specific biophysical disturbance. Even so, interpretation of abnormal excitability is not trivial and may benefit from the aid of mathematical modeling such as implemented for the TROND multiple excitability protocol in the commercially available QTRAC software package (© Prof. Hugh Bostock, UCL Institute of Neurology, Queen Square London, UK). The software and hardware required to run TROND will be demonstrated during the workshop.

M i r c e a M O L D O V A N

Electrophysiological examination of the cranial nerves: theoretical aspects

Cranial nerve abnormalities occur frequently in both focal and diffuse neurologic disorders and can be evaluated by accessible electrophysiological techniques available in most clinical neurophysiology laboratories. Investigating techniques evolved gradually, from the classic surface conduction studies /EMG and sensory evoked potentials, to magnetic stimulation. The most useful are: The blink reflex detects lesions of the first division of the trigeminal nerve and the facial nerve, as well as in intra-axial lesions. Repetitive stimulation of the accessory and facial nerves is used in diagnosing neuromuscular junction disorders.

The masseter reflex evaluates the third division of the trigeminal nerve. The surface neurography nerve excitability test and maximum stimulation test were developed to determine abnormal facial nerve responses. EMG examination can be routinely performed on voluntary muscles innervated by cranial nerves V, VII, X, XI, and XII. With the assistance of an ophthalmologist, the extra-ocular muscles can be examined. Visual evoked potentials measurements of latency, amplitude, and waveform morphology are especially useful in detecting demyelinating lesions. Brainstem auditory evoked potentials evaluate the auditory portion of the eighth cranial nerve. An auditory stimulus generates a number of waveforms, and changes in the normal patterns of response can detect abnormalities. RR variation calculation is used in autonomous neuropathies. The instantaneous heart rate can be calculated from the time between any two QRS complexes, based on variations in the heart rate associated with respiration. Transcranial magnetic or electrical stimulation allow investigating proximal cranial nerve segments as well as central pathways. Therapeutic use of botulinum toxin involves the electromyographist, both for diagnosis and for EMG-guided injection.

CONCLUSION: Electrophysiological techniques offer reliable and comparable means of measuring the integrity of the cranial nerves and their central pathways.

WORKSHOP - Electrophysiological examination of the cranial nerves: practical applications

Most cranial nerves are accessible to electrophysiological examination, which can aid in diagnosis of focal and diffuse nerve lesions, as well as muscle disorders. Changes in responses are measured and, using a combination of these techniques, localization of lesions at specific sites can be made. Techniques demonstrable in the workshop are presented with italics below

1. Olfactory N. - olfactive evoked potentials

2. Optic N. - electro-retinogram

- evoked potentials

3, 4, 6 Oculomotor, Trochlear, Abducens N. - EMG needle examination of the extra-ocular muscles can be performed with the assistance of an ophthalmologist,.

5. Trigeminal N - blink reflex detects lesions of the first division of the trigeminal, the facial nerve, as well as intra-axial lesions

- masseter reflex evaluates the third division of the trigeminal nerve

7. Facial N - surface neurography determines abnormal facial nerve responses

- repetitive stimulation nerve responses of neuromuscular junction function
- the nerve excitability test - the NET has also been used to determine prognosis for facial nerve recovery
- maximum stimulation test
- electromyography – to detect functional nerve integrity after injury

8. Acoustic N. - brain stem auditory evoked potentials

- the vestibulo-colic reflex (VCR), is a new non-invasive method for assessment of vestibular function. It is a short-latency reflex recorded from averaged sternocleidomastoid electromyography in response to intense auditory clicks.

9. Glossopharyngeal N.- EMG possible but limited.

10. Vagus N. - RR variation calculation is used in autonomous neuropathies, where it evaluates sinus arrhythmia.

11. Spinal N. - accessory motor nerve conduction is useful in focal nerve injury,

- repetitive stimulation is used in diagnosing neuromuscular junction disorders.
- EMG – evaluation and tratment of dystonic movement disorders

12 Hypoglossal N. - Quantitative EMG

Ayghiul MUJDABA

Ayghiul Mujdaba- Elmi , MD Neurologist ,

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Foundator member and treasurer of Romanian Society of Electrodiagnostic Neurophysiology (ASNER) since 2009- present

Lumbar plexopathy in a patient with diabetes mellitus

Neuropathic pain develops as a result of lesions or disease affecting the somatosensory nervous system either in the periphery or centrally.

We present case of 67 year- old man with severe burning and lancinating pain in the right thigh and proximal weakness in the quadriceps associated with poor glycemic control. We used screening tools (Pain Detect and DN4) to classify neuropathic pain on the basis of patient reported verbal descriptions of pain qualities. MRI of the lumbosacral spine and pelvis was helpful to rule out mass lesions. Electrophysiologic studies was important to distinguish lumbosacral plexopathy from compressive radiculopathy , mononeuritis multiplex, meralgia paresthetica.

Serghey NIKOLAEV

Techniques of EMG Diagnostics of Radiculopathies - Sergey Nikolaev

The neurological manifestations of the osteochondrosis are most often occurred pathology. One of the complications is radiculopathy – acute or chronic injury of the radicular system as a result of involutional changes of the spinal column.

At present the diagnostics of radiculopathies is based on the clinical signs. The second level of the diagnostics is the detection of anatomical changes (the presence of hernias, etc.). The neurophysiological assessment of radicular system function is based on the exclusion of peripheral injuries and the verification of axonal changes at myotome.

The verification of radicular system state is possible only if the complex examination with the use of techniques, that allow estimating the proximal conduction, is performed. At that it is required to consider the pathophysiological changes of the radicular system.

Such techniques include F-wave study with conduction velocity measurement along both fast- and slow-conducting fibers and study of root delay to estimate the motor conduction velocity of radicular system.

To estimate the conduction at S1-S2 level, the study of H-reflex, F-wave and root delay, that allows differentiating the lesion of motor and sensory roots at this level, is performed.

The diagnostics of injury at C5-C6 level is based on T-reflex study. The complex study of biceps and brachioradialis reflexes allows separating the injury of sensory and motor roots at C5-C6 level.

Based on clinical and neurophysiological data, it is possible to assign several injury variants:

- axonal injury: acute and chronic (subacute);
- demyelinating injury: acute and chronic (subacute);
- functional changes as reciprocal relationship at segment level.

The diagnostics basis is the complex application and comparison of different techniques, that allows objectifying the

Ovidiu PALEA

Anethesiology and Intensive Care is my background, and Pain Management comes in as a second specialty. Why Pain Management? Because we as anesthesiologists deal with pain every day, and it comes natural to us. But what is Pain Management? Well, It is a specialty that deals mainly with conditions that do not have a reversible organic cause. In other words pain becomes part of the patient's life. And you would be surprised how many patients live 24 hours a day, 7 days a week, in continuos pain.

"Controversies in back pain management - the dilemma continues!"

Back pain is the most common complaint after headache seen in physicians' offices. Despite that standards of care are hard to be reproduced around the globe and outcomes are far from ideal. Minimal invasive therapies for back pain have excellent results when we know what we treat, and when you choose the right tool at the right time. If it only was that easy ....

Cristina PANEA

Associate Professor,
Medicine and Farmacy University "Carol Davila"; Neurology Department, Elias University Emergency Hospital – Head of the Department
After the graduate of Medicine and Farmacy University "Carol Davila" in 1986, Dr. Cristina PANEA became resident in Neurology and later on, specialist in Neurology.

Certified in Neurophysiology and Pain therapy, with the PhD thesis "The role of the polisomnography in the neurological disorders diagnostic" - Magna cum Laudae, is the author and co-author of more than 150 papers, reports and scientific oral presentations. Under her lead, the Neurology department is involved in several research contracts: 18 finalised, 4 undergoing.
Activ Member in the following scientific societies:

1. European Society of Neurology
2. Movement Disorders Society
3. American Academy of Neurology
4. Romanian Neurological Society: founding member, former treasurer
5. Romanian Stroke National Association
6. Romanian Society for Pain Study: founding member and member of the Society's National Council

Izabela POPA

Izabela Popa graduated the University of Medicine and Pharmacy Timisoara in 1999. Finished internship and residency in neurology in Timisoara and became neurologist in 2006. Followed clinical neurophysiology trainings at Department of Neurology, University of Szeged, Hungary (2004), Department of Neurology, University of Leipzig, Germany (2005) and at 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 works as private practitioner with special interest in neurophysiology.

Neuropathic pain, from nerve to radix

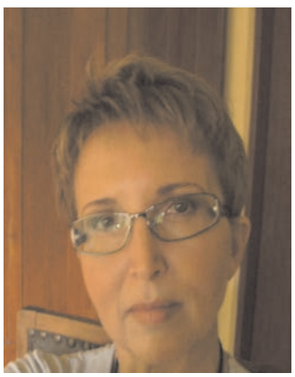
Neuropathic pain is a chronic pain where nerve fibers themselves may be damaged involving a changing in nerve function. It is one of the most disturbing forms of pain that a patient can feel. Most likely, no biological test or imagistic exploration can be used to point out the cause of the problem.
Two situations of neuropathic pain involving different anatomical levels are presented i.e. a spinal stenosis and a cranial nerve involvement.
In order to increase the sensitivity and specificity of diagnosing symptomatic trigeminal neuralgia cases as well as mono or multiple radiculopathy, electrodiagnostic studies may be used. The monitoring of patient evolution, through objective data recorded during EMG and NCS studies, brings additional value.

STEFANO SIMONETTI

Dr Stefano Simonetti was born in Genoa, Italy, on the 14th of April 1961. He obtained a Degree in Medicine and Surgery at Genoa University in 1985, and 4 years later he became a specialist in Neurology at the same university. In 1992 Dr Simonetti earned the title of specialist in Neurophysiopathology. He worked as Assistant Neurologist at the Neurological Division of Galliera Hospital, Genoa, from 1991 to 1992, as Assistant Neurophysiologist, Research Associate and Senior Registrar at the Department of Clinical Neurophysiology "Rigshospitalet" University Hospital in Copenhagen, from 1996 to 1997, and as Director of the Department of Neurophysiopathology at Galliera Hospital, Genoa, between 2002 and 2008. Currently, Dr Simonetti is Responsble of Neurophysiology Unit at Clinica Villa Montenegro, Genoa.
Dr Stefano Simonettii is author and co-author of numerous scientific articles and chapters dealing with neurological and neurophysiological subjects, and also speaker, organizer and coordinator of several neurological and neurophysiological meetings.

The Electrodiagnosis of Radiculopathy

Electrodiagnostic (EDX) examination for suspected radiculopathy is one of the most common causes for referrals to electromyography laboratories.
If done with a correct strategy, EDX examination may be useful to validate the presence of radiculopathy, estimate its age and activity, establish the involved root, grade the process severity, and exclude other peripheral nerve diseases that can mimic a radiculopathy.
However, many patients referred to the laboratory have nonspecific symptoms representing non neurologic disorders caused by musculoskeletal disease. Furthermore, other patients with true radiculopathy, have only “irritative”, non structural, sensory symptoms, which may be not measurable by EDX studies. In addition, due to peculiar and variable anatomic and pathophysiologic conditions, the involved myotome may be definitely identified by EDX tests, but the spinal level at which the involved root exits the spinal canal may be less certain.
Thus, depending on patient selection, segmental level of involvement, and the techniques used, reports may show variable correlation between EDX testing and either neuroimaging or surgical localization, rendering controversial the EDX value in radiculopathy assessment (So et al., 1999; Fisher, 2002; Dillingham, 2002; Tsao, 2007).
EDX consultants need to be aware of the complex anatomic, pathophysiologic, and clinical aspects of radiculopathies, and the value and limits of the EDX tools, thus conducting the study with a variable approach that may optimize its diagnostic sensitivity and minimize discomfort.
Aim of this communication is to review the various EDX methods (Electromyography, sensorimotor nerve conduction studies, F-wave and H-reflex studies, Somatosensory and Motor Evoked Potentials) employed for radiculopathy evaluation, and discuss their individual or global sensitivity and specificity.



Edith SISAK

Edith SISAK- absolventa a IMF Tirgu Mures, este medic specialist neurolog din 1991 si medic primar din 1996. Competentele in examinarea Doppler, EEG, EMG, PE si stagiile practice multiple efectuate in Budapesta, Tel Aviv, Graz si Salzburg confirma interesul in examinarile paraclinice si indeosebi in electroneurofiziologie. In prezent profeseaza in Spitalul Judetean Sf Gheorghe. Este membra a Societatii de Neurologie din Romania, a Societatii pentru Studiul Neuroprotectiei si Neuroplasticitatii, membra a Societatii de Neurofiziologie Electrodiagnostica din Romania si a numeroase societati stiintifice internationale.

Edith SISAK: Electrodiagnostic in colagenoze

A. Clasificarea colagenozelor
B. Complicatiile neuromusculare ale colagenozelor
1/ Paralizii de nervi oculomotori
2/ Guillain-Barre si radiculite izolate
3/ Neuropatii, polineuropatii si mononeuropatii multiple
4/Polimiozite

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AT THE NATIONAL CONFERENCE IN 2011!