

Society Proceedings

39th Annual Meeting of the SENFC
(Spanish Society of Clinical Neurophysiology),
Seville, Spain, 10–12 December 2001

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1 Changes of the neuromuscular transmission in the Miller-Fisher syndrome – G. Goizueta, C. Terrón, N. Reyes, E. Martínez, J.A. Zabala, C. Escamilla, M. Asensio, I. Illa (C.P.H. Madrid and H. de la Santa Creu i Sant Pau, Madrid and Barcelona, Spain)

Introduction: The Miller–Fisher syndrome (MFS) typically presents acute ophthalmoplegia, ataxia, and areflexia. In the last years, it has been associated with the presence of antiganglioside antibodies IgG anti GQ1b. Some reports localize the pathogenic action of these antibodies at the presynaptic terminal of neuromuscular junction causing a possible blockade of the acetylcholine liberation and therefore a failure of neuromuscular transmission.

Objective: Clinical, immunologic and neurophysiologic evaluation of a patient who presents MFS.

Patient and method: A 60-year-old man (after respiratory tract infection) was referred because of acute partial ophthalmoplegia, ninth and tenth nerves bilateral palsy, ataxia, areflexia, and generalized weakness. An analytic, serologic, immunologic, neuroimaging, and neurophysiologic study was realized.

Results: The tests were normal or negative, except the antiganglioside antibodies that were positive. The neurophysiological study showed a moderate mixed sensorimotor neuropathy and an obvious potentiation of CMAP with the repetitive stimulation on high frequency. With plasmapheresis the patient's evolution was partially kind.

Conclusion: This paper supports the pathogenic action of anti GQ1b antibodies at presynaptic terminal, causing a neuromuscular transmission blockade.

2 Are Parkinsonian patients aware that they fall asleep during the day? – M. Merino, I. Arnulf, E. Konofal, A.M. Bonnet, V. Mesnage, J.P. Derenne, Y. Agid (H. Pitié-Salpêtrière, Paris, France)

Introduction: Road accidents caused by falling asleep without warning have been reported in patients with Parkinson's disease (PD).

Objective: We wanted to study sleep perception during daytime siesta in PD subjects.

Methods: Fifty-six sleepy PD patients underwent clinical evaluation (MMS, Hoehn–Yahr score), Epworth sleepiness score, nocturnal polysomnography and Multiple Sleep Latency Test (MSLT). After each siesta (MSLT), they were asked if they perceived sleep.

Results: During 277 tests, 241 sleep episodes occurred. In 34 cases, patients were not aware of having slept. There were no differences in the duration (both 12 ± 6 min) and the type (slow wave sleep, REM sleep) of perceived and non-perceived sleep bouts. Twenty-one patients (38%) were not aware of at least one of the sleep periods, even with slow wave sleep ($n = 4$) or REM sleep ($n = 6$). Clinical (age, duration and severity of PD, cognitive impairment), treatment (type and dose) and sleep (night sleep and

mean daytime sleep latencies) characteristics did not differ between patients perceiving accurately or not their sleep bouts.

Conclusion: One-third of Parkinsonian patients are not aware that they fall asleep, which may put them an increased risk for driving accidents.

3 Diagnosis of the erectile dysfunction by electroimpedance – D. Zarza, M.T. Alonso, A. Gómez, S. Merino, I. Arroyo, A. Mercado (H. General Yagüe, Burgos, Spain)

Objective: To use a neurophysiological method, such as the electroimpedances measurement, for the diagnosis of vascular etiology erectile.

Material and methods: Through the measurement of penis electroimpedances during the erections in the REM stage, information can be obtained about the speed changes in the blood flow rate. The NEVA system (Application of nocturnal electroimpedance volumetric assessment) makes it possible to elaborate charts of the length, section area, volume and duration of the events, to check whether they are within normal limits. We studied 21 patients of 20–69-year-old age group, with a vascular and/or psychogenic malfunction using the electroimpedance measurement and PLSG systems simultaneously.

Results: (1) Patients suffering from psychogenic erectile malfunction = 6 (mean age, 39). (2) Patients suffering from a vascular malfunction = 154 (mean age, 58). Arterial failure = 13 (middle 4, moderate 6, severe 3). Vein-occlusive failure = 2.

Conclusions: (1) A differential diagnosis of psychogenic and vascular dysfunction can be obtained through the test of penis tumescence electroimpedance. (2) In the vascular dysfunction a difference can be established between arterial failure (with different degrees of severity) and vein-occlusive failure.

4 Nurse counselling for OSAS patients – A. López, S. García, R. Perea, C. Iznola, I. Tankova, J. Paniagua (H.U. Virgen de las Nieves, Granada, Spain)

Objective: Reassure the success of continuous positive airway pressure (CPAP) treatment in our sleep medicine department, in obstructive sleep apnea syndrome (OSAS) diagnosed patients.

Methods: This counselling programme is aimed towards OSAS diagnosed patients, who need treatment with CPAP. Seventeen patients have participated. They are 1-h sessions, which include three patients and their relatives, that are divided into four steps. (1) Verbal information (What will be the next polysomnography?). (2) Informative video: given by the CPAP company, with a 10-min duration, divided into four parts: (a) symptom presentation; (b) illustrative description of OSAS; (c) laboratory diagnosis; (d) home treatment with CPAP. (3) To familiarize with the CPAP nasal mask. (4) Fulfilment protocol: one after the session (to observe the level of information and questions), and another one after CPAP trial to obtain information about how did the patient spend the night and which were the problems that the patient had.

Results: The number of patients that participated in the nurse counselling are not sufficient to obtain reliable information. Nevertheless, we will continue working to obtain more data. We have seen that the time spent giving information became reduced.

Conclusion: From 17 patients, only one has rejected the use of CPAP.

5 What is more determining in separating couples from sleeping together: snoring or CPAP? – C. Iznaola, A. López, S. García, I. Tankova, J. Paniagua (H.U. Virgen de las Nieves, Granada, Spain)

Objectives: To know the percentage of obstructive sleep apnea syndrome (OSAS) patients who got separated from their sleeping couples because of snoring and those who came back after continuous positive airway pressure (CPAP) treatment.

Methods: Fifty patients were selected at random, diagnosed from OSAS by our sleep medicine department and being treated with CPAP, who maintained the same couple ever since they were diagnosed. We practice a telephone interview with these questions: Do you currently use CPAP? Did you have to stop sleeping with your couple because of snoring? If the answer is yes: Did you continue sleeping together after treatment with CPAP? If the answer is no: Did you separate after CPAP? Why?

Results: Nine patients separated because of snoring, of which four returned to sleeping together after using CPAP. The five patients left did not sleep back together because of CPAP machine. From 41 patients who did not separate because of snoring, three did it after using CPAP. All together, eight patients did not sleep together because of the CPAP devices.

Conclusions: Eighteen percent of the patients separated from their sleeping together because of snoring and 16% because of the CPAP. The CPAP device inconveniences separate couples almost as much as snoring.

6 Retrospective study about the use of algorithms for CPAP titling – C. Iznaola, A. Egea, A. Galdón, A. González, M. Piñero, J.R. Toledano, F. Bracero, I. Martínez, J. Paniagua (H.U. Virgen de las Nieves, Granada, Spain)

Objectives: To know if the continuous positive airway pressure (CPAP) titling algorithm $\text{predP (Predictive pressure)} = 0.16 \times \text{BMI (Body Mass Index)} + 0.13 \times \text{CP (Cervical Perimeter)} + 0.04 \times \text{AHI (Apnea/Hypopnea Index)} - 5.12$, published in the magazine CHEST/117/4/2000 (pages 1061–1064) approximately determine effP (effective pressure). From 120 obstructive sleep apnea syndrome (OSAS) diagnosed patients treated with CPAP at our sleep medicine department, 42 patients were selected (age range 34–79 years, with average AHI 60.32, average BMI 36 and average CP 45.26 cm). In all patients, we applied the mentioned algorithm and compared the pressure obtained with effP previously adjusted by a nocturnal polysomnographic study. A difference predictive–effective pressure of $\pm 1 \text{ H}_2\text{Ocm}$ was a valid approximation.

Results: Both pressures did not coincide in any patient. From 42 patients, 18 needed a lower pressure than the predicted one (range -0.3 to -4) and 24 needed a higher pressure than the predicted one (range $+0.3$ to 3.2). Even though predP and effP variables are significantly correlated ($r = 0.51$, $P = 0.01$), only in 42.8% of the patients was a valid difference obtained.

Conclusions: Algorithm only reaches a valid approximation in 42.8% of the patients, so it will be necessary to consider the existence of other multiple factors that may participate in obtaining predictive pressures.

7 Moebius syndrome: a neurophysiological study – M.A. Moyano, J.J. Ortega, M. de Entrambasaguas, F.J. Montoya, A.L. Serrano (H.G. de Castellón, Castellón, Spain)

Objective: Moebius syndrome (MS) is a rare congenital disorder with convergent strabismus and facial diplegia due to damaged cranial nerves VI and VII. Other lower cranial nerves may be involved as well, and several malformations may occur. A dysembryogenic cause has been proposed. Teratogenic factors presence during prenatal 4th–7th weeks would cause a hypoplasia or agenesis of cranial nerves nuclei and/or close supranuclear pathways. Electromyography (EMG) is useful to evaluate the seventh nerve, while brainstem auditory evoked potentials (BAEP) study the eighth nerve and the auditory pathway.

Patient and methods: Female aged 7 months with a clinical diagnosis of MS. Neuroimaging study normal. Nerve conduction study of bilateral facial and right median nerve. Bilateral BAEP with monaural stimulus, click transient, A1-Cz and A2-Cz recording.

Results: Conduction nerve study: absent or very low amplitude potentials in facial nerve. Needle EMG and blink reflex not feasible. Median nerve normal. BAEP: conductive hearing loss. Prolonged left I–III interval and decreased bilateral IV–V wave complex amplitude.

Conclusion: Nerve conduction study supports the diagnosis. Low amplitude IV–V wave complex suggests supranuclear involvement of the auditory pathway, possibly due to hypoplasia. Prolonged I–III interval may express a troublesome conduction at a (pre)nuclear level.

8 Continuous muscular activity syndromes. Presentation of three cases with different neurophysiological findings – S. Montilla, P. Calvo, I. Regidor, M. Picornell, J. Ron, J.M. León, J.A. Domínguez, G. de Blas (H. Ramón y Cajal, Madrid, Spain)

Objectives: The continuous muscular activity syndromes with a peripheral generation have received several terms: Isaac–Mertens syndrome, neuromyotonia, myokymia, neurotonia, and so on. Clinically they are similar, with stiffness, persistent impaired relaxation, cramps and muscular weakness. Neurophysiologically, several patterns have been described, as multiplets with different firing rate, motor unit potential firing bursts, cramps, postdischarges, and so on. The activity usually persists after nerve blocking, which indicates the peripheral origin of these syndromes, abolishing after curare administration. Sometimes they are related to the presence of K^+ channels antibodies, and could be related to other immunological diseases as well. We present three cases of continuous muscular activity, comparing these with those described previously in the literature, discussing whether they are different syndromes or different manifestations of the same syndrome.

Methods: Involuntary activity recording, EMG and NCV were performed in the three cases; in one case, nerve blocking as well.

Results: One of the cases showed triplets bursts firing at 142 Hz intraburst. The second one showed fasciculations with no neuromuscular abnormality. In the third patient, simple or complex potentials were detected, with irregular rate of discharge, which persisted after nerve blocking, associated with a discrete sensitive axonal polyneuropathy.

9 Focal neuropathy of cubital nerve in the elbow diagnosis: comparative results of different assessment techniques – P. de Mingo, J. Mesones, M.L. Ruiz, V. Sáez (C.S. Virgen de la Arrixaca, Murcia, Spain)

Objective: The aim of this work is to assess the incidence of disturbances in neurographic parameters, which are usually used for the diagnosis of focal neuropathy of cubital nerve in the elbow. Motor conduction in short distances techniques as well as those of comparison of mixed potentials latencies in median and cubital nerves have been included.

Methods: We have studied 42 patients with sensitive and motor neurographic techniques in cubital nerve and comparative techniques of mixed conduction between median and cubital nerves and centimetering techniques.

Results: Results show that the duration of sensitive nerve action potential (SNAP) registered above the elbow was disturbed in 86% of cases. In 10% of cases it was the sole abnormality. Centimetering stimulation shows disturbances in 83% of cases, while motor conduction across the elbow was decreased in only 42%.

10 Polycythemia vera and polyneuropathy. About a case – J.M. León, J. Ron, S. Montilla, P. Calvo, A. Rodríguez, G. de Blas (H. Ramón y Cajal, Madrid, Spain)

Introduction: Polycythemia vera is a myeloproliferative syndrome with a pathological increase in all blood series. It often shows neurological symptoms such as headache, dizziness, paresthesias and sight alterations. Less frequently, mono-, multi- and polyneuropathies, which are usually axonal and sensory neuropathies, are not related to its severity with the development of the disease nor with laboratory alterations. Physiopathologically it

is thought that blood viscosity would cause ischaemic changes on the peripheral nerve.

Methods: We present a 75-year-old man with PV who was seen for weakness and paresthesias in the lower extremities for 6 months. The NCV showed asymmetric, sensory motor polyneuropathy, demyelinating type in the upper extremities but some axonal component was also seen in the lower extremities. CSF examination showed an increase of the protein level albeit acellular.

Results: Although the patient did not achieve CIDP criteria he was treated with immunoglobulin, and showed an improvement of the clinical symptoms.

Conclusion: The importance of the case depends on the shortage of case reports about this subject and because there was a demyelinating component, which contrasts with other cases in which sensory axonal affection was predominant.

11 Multifocal acquired demyelinating sensory and motor chronic polyneuropathy (MADSAM) or Lewis–Sumner syndrome – J. Urdiales, I. López, G. Vázquez, J. Piquero, M. Conde (H. Virgen Blanca, León, Spain)

Introduction: The autoimmune acquired chronic demyelinating polyneuropathies can be divided into: chronic inflammatory demyelinating polyneuropathy (CIDP), multifocal acquired demyelinating sensory and motor polyneuropathy (MADSAM) or Lewis–Sumner syndrome, and motor multifocal polyneuropathy (MMN).

Clinical case: We describe a patient with upper limb predominant, multifocal acquired asymmetric chronic demyelinating sensory and motor with block polyneuropathy. The electrophysiological study and differential diagnosis of the two conditions are reviewed.

Methods: Motor conduction studies bilaterally on the median, ulnar, peroneal and posterior tibia nerves, the compound motor action potentials (CMAPs) and F waves, and median, ulnar and sural sensory nerve action potentials. We used the criteria for demyelination and block developed by the American Academy of Neurology: conduction block was diagnosed if CMAP amplitude decreased at least 50% and proximal stimulation compared with distal stimulation and CMAP duration increased less than 30%. If the CMAP amplitude decreased more than 50% but CMAP duration increased 30% or more, possible block was diagnosed. Abnormal temporal dispersion was diagnosed when CMAP duration increased 30% or more.

Conclusion: We believe that this case represents a MADSAM separate entity or variant of CIDP; and we comment the difference between pure motor form (MMN) with sensory and motor form (MADSAM) or the Lewis–Sumner.

12 Intraoperative electroneurography of brachial plexus – B. Cabrero, M. García, C. Franco, M. González, A. García (H.C. San Carlos, Madrid, Spain)

Introduction: Traumatic brachial plexus (BP) injury, most often involving the upper trunk, is a very prevalent pathology among young adults. The number of surgical treatments, with the aid of neurophysiological studies, is increasing.

Purpose: To describe the neurophysiologic protocol that we use in our hospital to study surgically treatable BP injuries.

Methods: Preoperative evaluation: electrical stimulation of BP and peripheral nerves with monopolar needle and/or bipolar electrode (1–100 mA intensity and 1 Hz frequency) recording with concentric needle electrode in their dependent muscles, and also electromyography of them. Intraoperative monitoring: general anaesthesia without neuromuscular block after orotracheal intubation. Direct electrical stimulation of BP (primary and secondary trunks and terminal branches), with Oxford bipolar stimulator electrode (1–80 mA intensity, 1 Hz frequency and 0.2 ms duration), monitoring the response at different nerve locations and/or at their dependent muscles, with concentric needle or surface electrodes.

Conclusions: Intraoperative electroneurography is very useful to identify, localize and assess nerve function, and to help in taking the decision for the best surgical procedure. In order to optimize postoperative outcome

in BP surgeries, a neurophysiologic pre-, intra- and postoperative evaluation is essential.

13 Brachial plexus: electromyography and electroneurography – M. Silva, F.J. Jiménez, M. M. Cáceres, P. Chaparro (H.U. Virgen del Rocío, Seville, Spain)

Introduction: The brachial plexus is a neural structure serving the superior extremity and the respective scapular girdle. It is formed by an interwoven network of the nerves arising from C4 to T1, constituting the primary and secondary trunks and the terminal nerves. The brachial plexus is located in the posterior triangle of the neck. Its close relationship with vascular, bony and visceral structures makes it sensitive to suffer different injuries.

Objective: To evaluate the distribution of the injuries in the brachial plexus.

Material and methods: A prospective study was carried out by means of the analysis of 230 patients, with clinical suspicion of plexular lesion. The study considered the distribution according to sex, age, etiology, time of evolution, symptoms and clinical signs. Electroneurographic and electromyographic protocols were then included, and a protocol of evoked potentials considering the topographical diagnosis.

Results: The plexus pathology affected both sexes in the same proportion, with more incidence of injuries on the right side: 50% was due to trauma, a fifth being complete plexopathies. In 36% the superior trunk was affected, while the inferior trunk was affected in only 10%. Finally, 30% of the cases were normal.

Conclusion: The suspicion of brachial plexopathy is relatively frequently consulted. Most of the lesions have a traumatic origin and often on the right side. The superior trunk was most affected, either independently, or in the context of a panplexopathy.

14 Evolution of the EEG in Rett syndrome – I. González, R. Jiménez, F. Aguilar (H.U. Virgen del Rocío, Seville, Spain)

Introduction: Rett syndrome is a neurological disorder that affects only females. The diagnosis is based on clinical criteria categorized as required, supportive, and exclusion, established by the Rett Syndrome Diagnostic Criteria Work Group (1988). Epileptic seizures are a supportive sign for the diagnosis of Rett syndrome. Starting at 2 years of age, the EEG is typically abnormal.

Materials and methods: Between 1980 and 2001, EEG testing was conducted on a total of 28 patients diagnosed with Rett syndrome. The majority of the EEGs performed during the first 2 years of life were normal. Starting at 5 years of age, they presented slowing of fundamental activity while awake. Seizures appear at ages ranging from 1 year to 3 years 8 months and continue for an average of 5 years 9 months. The EEGs performed during sleep showed a decrease or disappearance of the spindles in four cases with ages ranging from 6 to 13 years.

Conclusion: The clinical evolution of Rett syndrome occurs in four stages, each with specific electroencephalographic characteristics.

15 Bilateral optic neuropathy in a lupus erythematosus – J.A. Sáez, I. Domínguez, J.M.R. Ferrer, F. Martínez (H.U. San Cecilio, Granada, Spain)

Patient and method: A 42-year-old woman was studied with ERG/VEP pattern because of a slow loss of vision without any other symptom. Cortical 'P100' latencies were delayed and retinal 'P50/N95' amplitudes were reduced in both eyes. To test a possible 'mononeuropathy multiplex' an electromyography was carried out.

Results: Although nerve conduction studies were normal, fibrillation potentials, positive sharp waves and long duration polyphasic motor unit potentials were registered in muscles of three extremities. Our final diagnosis was an axonal multineuritis that we later proved was secondary to a systemic lupus erythematosus.

Conclusion: This case shows the role that ERG/VEP pattern and electromyography may play in the evaluation of optic neuropathies.

16 Statistic profile of sleep unit in Virgen Blanca Hospital, León (2000–2001) – J.I. López, G. Vázquez, P. Calvo, J. Piquero, J. Urdiales, M. Conde (H. Virgen Blanca, León, Spain)

Objectives: To review the incidence of sleep disorders in the province of León, and to know the patient's profile who assists to our unit, origin and causes of consulting, in order to value the diagnosis efficacy of polysomnography (PLSG).

Patients and methods: Eighty-one patients of our province. Past medical history, questionnaire of sleeping habits and Epworth scale were done on all patients. Afterwards we undertook an 8 h night register including: EEG, EOG, EMG, EKG, oronasal flow with Thermistor, thoracic and abdominal movements, and pulse oximetry.

Results: A similar percentage of men and women is remitted, whose ages are between 20 and 40 years old. They are mainly remitted from the Neurology division, their antecedents being seizures, in order to value the possible antiepileptic drugs removal or to confirm the epilepsy diagnosis. We can point out that the PLSG studies helped us to trust the suspect diagnosis in 42% of the studied cases. This leads us to the conclusion that other diagnosis techniques are not so useful when working with sleep disorders.

17 Subclinical hepatic encephalopathy shows an important decrease of slow waves (<1 Hz) in the sleep EEG – M. Elena, J. Fernández, M. Romero, E. de Vicente, R. Bárcena, J.M. Gaztelu (H. Ramón y Cajal, Madrid, Spain)

Objective: To determine if the sleep electroencephalogram (EEG) of cirrhotic patients with suspected subclinical hepatic encephalopathy (SHE) would reveal this pathology.

Methods: Fourteen such cirrhotic patients were studied and compared with 14 age-matched healthy volunteers. Spectral analysis of all-night EEG was estimated by computing the FFT in 2-s epochs and averaging every 60 s. Artifacts were suppressed off-line and sleep stages (stage 2, stage 3–4, and REM) were determined. In all minutes of each stage, calculations included EEG mean dominant frequency (MDF) and relative spectral power in the following frequency bands: 0.5–1.5 Hz (delta1), 1.5–4.0 (delta2), 4.0–7.0 Hz (theta), 7.0–12.0 Hz (alpha), 12.0–14.0 Hz (sigma), 14.0–30.0 Hz (beta) and 30.0–45.0 Hz (gamma).

Results: Results indicate that in cirrhotic patients, in the three sleep stages, mean relative spectral power in delta1 band was significantly lower than in controls; conversely, mean relative spectral power in delta2 and theta bands, as well as the minimum of MDF, were significantly larger.

Conclusions: (1) sleep EEG may evidence the existence of SHE; (2) it is important to consider separately delta1 and delta2 frequency bands in the analysis of EEG in SHE.

18 Convulsive seizures due to cerebral hyperperfusion after percutaneous transluminal angioplasty – I. González, F. Boza, J. Gallego (H.U. Virgen del Rocío, Seville, Spain)

Introduction: Percutaneous transluminal angioplasty (PTA) and stenting are increasingly being used as an alternative to carotid endarterectomy in the treatment of carotid stenosis. The main complications reported for PTA are ischemic, hemodynamic or occlusive. A major complication of carotid endarterectomy is cerebral hyperperfusion syndrome (0.3–1.2%). However, few cases of cerebral hyperperfusion syndrome have been reported as a complication of PTA.

Clinical case: A 58-year-old woman who underwent PTA of the LCA and stent placement, with EEG monitoring. During the arterial dilatation, the EEG showed the appearance of slow-wave spikes of left parietotemporal expression without clinical repercussions or changes in the ECG. During the 48 h post-operation, the patient presented clinical signs of hyperperfusion, with electroencephalograms showing an increase in slow-wave activity predominantly in the left hemisphere, and a subclinical seizure was recorded. The CT and Doppler confirmed hyperperfusion syndrome.

Conclusion: The symptoms of hyperperfusion syndrome (headache, vomiting, confusion, convulsions) may appear immediately or in the first few days after surgery. They can be self-limiting or followed by haemor-

rhage even if arteriography does not reveal aneurysm or vascular malformation.

19 Electroencephalography alterations in children with learning difficulties – C. Castañeda, E. Caro, J.M. Galán, J. Sáez, F. Paradinas, P. Quintana, G. Lorenzo (H. Ramón y Cajal, Madrid, Spain)

Introduction: It is known that intercritic paroxysmic discharges influence on cognition and learning in several types of epilepsy. The discovery of focus or general paroxysm in regular children EEG, with neurological disease, without clinic crisis, poses the doubt whether the association is casual or real between patient clinic displays and EEG observed alterations.

Patients and methods: We have studied 11 children with learning difficulties that showed hyperactivity signs, low attention/concentration level and social integration difficulties.

Results: Sleeplessness EEG did not demonstrate significant alterations in any of the selected patients. Night polysomnography (PSGN) of four of 11 children showed focus and/or general, spike-wave morphology, and persistent paroxysmic discharges.

Conclusions: In spite of the limited number of the sample selected, the frequency of EEG alterations favours investigation of its influence on clinical signs that justified consulting, as well as the usefulness to include a PSGN in the diagnostic procedures for this kind of patient.

20 Electroclinical picture in a patient with semilobar holoprosencephaly – Y. González, C. García, M. García, I. Villalibre, J. Martínez, J. Campos (H.C. San Carlos, Madrid, Spain)

Introduction: Holoprosencephalies (HPE) are a group of midline brain malformations characterized by a failure of normal prosencephalus development. They are classified according to anatomic features (grade of brain hemispheres linking and cortex differentiation) and severity, into alobar, semilobar and lobar. A typical clinical triad consisting on facial dysmorphism, severe encephalopathy and epileptic seizures has been reported.

Purpose: To describe the electroencephalographic (EEG) findings during wakefulness and sleep and the seizure semiology in a patient with Semilobar HPE.

Clinical case: Boy born by elective caesarean after 34 weeks of pregnancy (due to routine echography suggesting hydranencephaly), who needed revival type I. He was hypotonic and had epileptic seizures resistant to medication. He underwent: cerebral MRI, routine and sleep EEG with respiratory polygraphic recording, karyotype, transfontanelar and abdominal echography, cardiologic, ophthalmologic and auditory examinations.

Conclusions: The EEG pattern during wakefulness and sleep and the clinical features were similar to the ones described previously in other patients with HPE. In addition, we recorded several apneas with oximetric and cardiologic repercussions highly associated with the seizures, but not specifically with sleep. A neurophysiologic study, including a respiratory polygraphic recording, is important for proper management.

21 Restless legs syndrome and periodic limb movement associated with an unusual clinical picture – M. Pujol, E. Montes, J. Gallego, F. Boza, J. Bautista (H.U. Virgen del Rocío, Seville, Spain)

Introduction/Objectives: In eighty percent of patients, restless legs syndrome (RLS) is associated with periodic limb movement (PLM), characterized by stereotyped movements during wakefulness and NREM sleep, decreasing or disappearing in REM sleep. We report the case of a patient with the clinical and polysomnographic (PSG) diagnosis of RLS associated with PLM and with continuous stereotyped movements during wakefulness and sleep.

Patients/Methods: A 29-year-old female, without previous medical history, sought advice for a 10-year history of cramps and dysesthesiae in both legs, relieved by motor activity with worsening at night. On examination continuous movements of plantar flexion of the toes were witnessed. Paraclinical studies: magnesium in the lower limits of normality. PSG: confirmed the diagnosis of PLMS and continuous movements as described above. The clinical picture improved with pramipexole and magnesium p.o.

Results/Conclusions: This case, primary in origin, associates RLS, typical PLM and abnormal movements of plantar flexion, on-going during sleep. All of them are sometimes related to 'arousal-EEG'. Neurophysiological examination confirms that both types of movements occur randomly (isolated, simultaneous and preceding or following each other) and do not modify sleep architecture.

22 Topographic study of interference in the Stroop test using event related potentials (ERPs) – C. Montes, J.P. Lara, E. Vila, M.A. Barbancho, S. González (Department of Physiology, School of Medicine, University of Málaga, Málaga, Spain)

Introduction: The Stroop test is useful evaluating cognitive capacities and the effect of interference. Subjects are required to identify a word colour when presenting the name of a colour in either congruent (both coincide) or incongruent trials (they do not coincide). An increase in

response latency ('interference effect') has been shown during incongruent trials.

Objective: To investigate electrophysiological changes using ERPs of a Stroop task and the interference effect during the categorization of randomly mixed congruent/incongruent stimuli.

Method and results: Twenty young healthy adults performed a continuous Stroop recognition task (500 name–name stimuli flashed upon a computer screen). The subjects had to classify the stimuli as congruent and incongruent by selecting one of the two keys in a keypad. The simultaneously recorded ERPs from 19 scalp sites revealed a waveform with a frontal positive component (230 ms) of significant minor amplitude for incongruent stimuli, followed by a second positive component (580 ms) of significant major amplitude for incongruent stimuli.

Conclusions: These electrophysiological findings suggest different topographic organization of the interference effect processing congruent/incongruent stimuli during a Stroop task.