Pseudomigraine with cerebrospinal fluid pleocytosis or syndrome of headache, temporary neurological deficit and cerebrospinal fluid. A historical review

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PSEUDOMIGRAINE WITH CEREBROSPINAL FLUID PLEOCYTOSIS OR SYNDROME OF HEADACHE, TEMPORARY NEUROLOGICAL DEFICIT AND CEREBROSPINAL FLUID. A HISTORICAL REVIEW

Summary. Introduction. *The pseudomigraine syndrome with cerebrospinal fluid (CSF) and pleocytosis (PMP) or headache with neurologic deficits and CSF lymphocytosis (HaNDL) is an entity that they have been realized multiple contributions to their etiophysiopathology in the 25 years of their discovery.* Development. *The PMP is described in 1980 by Swanson, Bartleson and Whisnant, and parallelly for Martí-Massó, and from then on there have been contributions of new cases, ones some atypical for mild headache, prolonged recurrence, symptomatic intracranial hypertension or infections for cito-megalovirus that simulates PMP. They have been carried out several approaches diagnoses along the years being established at the moment in the year 2004 by the International Classification of Headache Disorders. They have been carried out contributions to their knowledge thanks to the realization of electroencephalograms, single photon emission computed tomography brain imaging, transcranial Doppler, evoked potentials, brain magnetic resonance imaging diffusion… giving place to the existence of numerous theories like the infectious-autoimmune, dysfunction of the blood brain barrier, spread cortical depression, trigeminous-vascular activation.* Conclusions. *The PMP or HaNDL is a benign entity with even unknown etiophysiopathology and where it is important the differential diagnosis with other entities potentially more dangerous. [REV NEUROL 2007; 45: 624-30]*

Key words. *CSF. HaNDL. Headache. Neurological deficit. Pleocytosis. Pseudomigraine. Single-photon emission tomography.*

INTRODUCTION

The pseudomigraine with cerebrospinal fluid (CSF) pleocytosis syndrome (PMP) has received multiple names in your history. The first description on 7 cases is attributed to Swanson, Batleson and Whisnant who in 1980 present it in the annual meeting of the American Academy of Neurology (AAN) denominating 'migrainous syndrome with CSF pleocytosis' or 'migraine with pleocytosis of CSF'. That same year, Martí-Massó presents 4 cases in the annual meeting of the Spanish Society of Neurology (SEN), who mint the term of 'pseudomigraine with pleocytosis in CSF' like an independent entity of migraine. Later very diverse terms like 'migraine with pleocytosis', 'pseudomigraine with inflammatory liquid' or 'symptomatic migraine' have been used. The term used for the moment by the International Classification of Headache Disorders of year 2004 is 'syndrome of transient headache and neurological deficits with cerebrospinal fluid lymphocytosis' whose abbreviations in English are HaNDL. The syndrome is characterized for a moderate-severe headache, accompanied or followed for a transitory neurological deficit with pleocytosis in the CSF and whose studies of neuroimaging, serology and CSF culture are generally normal, being the recurrent clinical in an inferior time to 3 months although as we'll see these criteria are too strict existing atypical cases. It agrees to realize the diagnosis differential with multiple diseases like the aseptic meningoencephalitis and migraine with aura. Spain is the country with more number and more important publications in this one field.

AIM

This revision tries be an historical route of the syndrome emphasizing the exposed most excellent facts in the different revisions, scientific publications and/or meetings scientific, realizing a route by the different etiologic and physiopathology hypotheses from the syndrome, emphasizing those publications that contribute new and relevant data to the knowledge of this disease.

DEVELOPMENT

The first description was carried out in 1980 by Swanson, Batleson and Whisnant [1] and they describe for the first time in the Annual Meeting of the AAN to 7 patients with episodes of migraine characteristics with pleocytosis in CSF and later, in October of 1981, they publish it in the *Neurology* magazine [2]. They describe to 4 women and 3 men between 16 and 50 years that present episodes of severe migraine associate to neurological deficits (visual, sensitive, motor alterations and the speech) recurrent during 1 to 12 weeks. They observe antecedents of infection for puncture of insects, gastroenteritis or respiratory infectious from 7 to 10 days before. The CSF opening pressure showed 200-290 mmH_20, 33-230/mm^3 leukocytes (lymphocytic predominance), CSF protein 56-184 mg/dL and CSF glucose 51-93 mg/dL. The EEG was altered in 5 patients predominating focal slowing and this episodes were followed or appeared simultaneously to intense migraines. They postulate that the cause can be a autolimited and benign inflammatory phenomenon sug-

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Table I. More relevant characteristics of pseudomigraine with pleocytosis in cerebrospinal fluid (adapted by [6]).

Acute migraine presentation: from 1 to 6 episodes with migrainous characteristics, accompanied in 90% of the cases of transitory focal cerebral signs
Cerebrospinal fluid: pleocytosis from 22-352 cells/mm^3. Lymphocytic predominance with normal glucose and normal or slightly elevated proteins. The proteins electrophoresis was normal and the culture was negative
Personal and familiars antecedents of migraine
Absence of meningism even with accompanying fever
Electroencephalogram: delta focal activity in 80%
Benign evolution with complete recovery and without relapsing episodes in a time of pursuit of up to 7 years

gesting viral meningoencephalitis where the familiar antecedents of migraine does prone to suffer episodes of migraine-like before inflammatory response of the central nervous system (CNS). In September of 1982 in a letter send to the director of the *Neurology* magazine comment 3 new cases [3]. One is a 38-years-old woman, other is a 33-years-old man and another is a 21-years-old man. This last one, with familiar and personal history of migraine, experiments lost of sensitivity in the right hand that ascends for the right side of body. It's in this last letter where is described for the first time he existence of personal antecedents of migraine and an ascending pattern of hemihypoesthesia. Three CSF extractions are realized until the 70 days of the episode being observed progressive diminution of protein and cells in CSF. The same happens in the EEG that is realized in the 3 patients, show slowing that they disappear later.

In April 1983, Martí-Massó et al [4] comments that in the meeting of the SEN in 1980 had reported 4 patients without antecedents of migraine whom present severe headache preceded of focal neurological signs. All the patients showed moderate pleocytosis (lymphocytosis 22-165 mm^3) and a EEG with focal and transitory delta waves, without repetition of the episode after a pursuit of 4 years.

In June 1983, in a letter to the director of the *Neurology* magazine, Ferrari et al [5] comments the first case of infection by cytomegalovirus (CMV) simulating a PMP where they find CMV in CSF by immunofluorescency normalizing after 4 months.

In March 1984, Martí-Massó et al [6], presents 10 patients with diagnosis of 'pseudomigraine with inflammatory liquid' being until that date the publication with more number of cases. The most relevant characteristics found are exposed in table I.

In April 1984 Brattström et al [7], contributes 5 cases. The interesting of the study is because is the first lumbar puncture (LP) presents from 18 to 225 cells/mm^3 (lymphocytic predominance) and in later days even arrives at 310 cells/mm^3 for to descend later. Are there in several an increase of albumin in the CSF appearing oligoclonal bands in 2, one of which had been negative 40 days before.

In September 1984, Day et al [8] contributes 4 cases, one of which presents elevation in CSF opening and closing pressure during a prolonged prodrome of migraine but later it recovers totally. That same year, Bruyn et al [9], does an analysis on if the attack of migraine causes pleocytosis in the CSF or vice versa in the basis of a series of 3 cases, concluding that migraine isn't cause of pleocytosis or vice versa but both are correlated by a common denominator without determining. Nevertheless, the following year, in April 1985 Rossi et al [10] comment 4 children with symptoms of complicated migraine where 3 of them had CSF pleocytosis with lymphocytic predominance, concluding that the pleocytosis is a secondary phenomenon to the attack of migraine complicated and that in exceptional cases of infectious diseases can take place both, migraine attacks with CSF pleocytosis.

A year later, in May 1986, Walter et al [11] describes a 30-years-old woman who present PMP with a important alteration of the conscience level and they realized several EEG and lumbar puncture (LP), and they observe an initial increase of the CSF closing pressure, CSF protein and CSF lymphocytes for to descend later occurring the same with the EEG.

To the following year, in 1987 Liblau et al [12] publishes the case of 26-years-old man and in 1990 two new cases are described that simulate a PMP partially. One is a boy, described in August by Goldstein et al [13], with migraine associated to focal edema, progressive CSF pleocytosis and cerebellar ataxia with hyperintense injuries in your brain magnetic resonance and a 42-years-old man described in October by López de Munain et al [14] with a luetic meningitis simulating PMP but with lows levels of CSF glucose in CSF.

In August 1994 Sekul et al [15] show like 11% of the patients to whom it administers high levels of intravenous immunoglobulin develop aseptic meningitis. The symptoms include severe headache, meningism, photophobia, fever and the CSF analysis show pleocytosis and/or eosinophilia with elevation of immunoglobulin G (IgG). 24 hours after repeating the LP, appear an explanation of 46% of IgG in this one. The aseptic meningitis is developed in 50% of the patients with migraine history and in the 0.92% without this one antecedent only occurring recurrence in the first. The difference between aseptic meningitis and the PMP is the existence of meningism and eosinophilia in CSF.

In June 1995 Motta et al [16], describes a 30-years-old woman with familiar hemiplegic migraine who present elevation of CSF protein accompanied of considerable pleocytosis. They review other fourteen cases of hemiplegic migraine with abnormalities in the CSF founds in the literature. The after moth, Serrano et al [17] presents 4 new cases, realizes a review of literature and tries to separate this syndrome of other migraine types, including in the classification of migraine of this year. In July 1995, Pascual [18] realizes a review too.

In September 1995 Berg et al [19] describe 7 patients with compatible symptoms with PMP and proposes a series diagnoses criteria (Table II).

In 1997 September Kappler et al [20] contribute 2 new cases and they realized for the first time a transcraneal Doppler during and after the episodes. They show a reduction or asymmetric increase in the speed of the sanguineous flow and the pulsability in the middle cerebral artery, suggesting fluctuations in the arteriolar tone.

In September 1997 too, Caminero et al [21] presents 4 patients with PMP and for the first time realize a cerebral SPECT (HMPAO-Tc99m) during the free period of symptoms (it varied from 8 to 25 days after the last episode) showing hypoperfusion in the left hemisphere in 3 agreeing with the slowing in the EEG and the clinic. They consider the possibility that the abnormality in the SPECT whether an epiphenomenon.

That same year Gómez-Aranda et al [22] contributes 50 cases, reunited in a series of hospitals in Spain being the more important contribution of number cases realized and where the most frequent manifestations are the sensitive followed of the aphasia. The CSF opening pressure presented 195 ± 68 mm/CSF, CSF cells 199 ± 174/mm^3 and CSF protein 94 ± 3 mg/dL. The IgG levels in CSF had a range from 4% to 34% of the total proteins. The oligoclonal bands were negative and ADA realized in 16 patients showed of 0.9 to 9.0 IU. Two patients had positive ANA, but to low title (< 1/80). One case had IgG CMV in blood a titled 1/256 with negative IgM. The EEG was abnormal in 71% of the cases being the most frequent alteration (62%) the slowing unilateral congruent with the clinic and that normalized after the symptomatic period. The brain magnetic resonance (MR) was normal except for a patient who showed small inespecific hyperintenses injuries in T_2. The cerebral SPECT realized in 3 patients demonstrated congruent hypoperfusion with the clinic in 1 case and both hemispheres in the other 2, normalizing later days in all. The cerebral angiography was realized in 12 patients and of whom only one showed suggestive irregularities of arterial inflammation. These authors propose a series of clinical criteria (Table III).

In December 1997 this same author, in another publication [23] does a description of the cases reported in the Spanish and English literature proposing that a viral infection could trigger an immune response producing a leptomeningea aseptic meningitis.

In February 1998, Oldani et al [24] comments that the prevalence of pseudomigraine could be underdiagnosed because some episodes could not be accompanied for migraine or to be very slight intensity contradicting the criteria diagnoses proposing in this moment proposing that the intensity of the migraine is not criterion diagnosis.

In June 1998, Arpa et al [25] comments to the article published next to Caminero et al [21], and where all the patients showed normal IgG levels in CSF and in contrast to the rest of studies, makes reference to a 34-years-old patient whose cerebral SPECT show parietal-temporary hyperperfusion congruent with the clinic that normalized 8 days later. Therefore, it is the first time that describes cerebral hyperperfusion in this syndrome postulating that the hypoperfusion could appear in the symptomatic period and the hyperperfusion appear and persist a time later in the free period of symptoms being able to be responsible an alteration of the blood-brain barrier (BBB) that produces local inflammation of the cranial vases.

In July 1998, Masjuán et al [26] notifies the first patient with criteria of PMP accompanied by symptomatic intracranial hypertension (bilateral papilledema and paralysis of VI cranial par) recovering 3 months later after treatment with furosemide.

In October 1998, Fuentes et al [27] comments 4 patients whose cerebral SPECT shows hypoperfusion during the acute process with normalized in the recovery period proposing for the first time the mechanism of the propagated cortical depression like migraine with aura. That same year, this work is commented by Bartleson [28] having referred that although the phenomenon of propagated cortical depression could explain the physiopathology, the SPECT alteration in the intercritical periods with alterations of the CSF, the viral antecedents and the fever would help to differentiate migraine with aura from the 'migrainous syndromes'.

In November 1998, Arnold et al [29], comments a patient diagnosed of PMP that show enhancement with gadolinium contrast in the left cerebral artery (compatible with the clinic) reversible after prophylaxis with flunarizine.

Table II. Diagnostic criteria proposed by Berg et al [19].

Severe headache(s)
Temporary neurologic deficit(s) (each deficit resolves within 3 days)
CSF lymphocytosis: range 16-350 cells/mm^3 (mean: 136), at least 86% mononuclear cells, predominantly lymphocytes)
Self-limited, range 1-84 days (mean: 21 days)
Single episode: 27%
Greater than one episode 73%. 41% with neurologic deficit same in each and 59% neurologic deficit different
Associated features
Increased CSF protein (> 45 mg/dL): range 35-247 mg/dL, mean 100 mg/dL: 91%
Increased opening pressure (> 18 cm CSF): range 10-40 cm CSF, mean 22,7 cm CSF: 73%
Transient focal, nonepileptiform EEG changes: 72%
Viral prodrome or fever: 50%

EEG: electroencephalogram; CSF: cerebrospinal fluid.

Table III. Diagnostic criteria proposed by Gómez-Aranda et al [22].

One or more episodes of hemicranial and/or bilateral migraine of moderate-severe intensity accompanied by temporary and changing neurological deficits, usually queiro-orals paresthesias, language alterations and occasionally fever
Total resolution of the episodes in two months
Absence of signs and symptoms between the episodes
Pleocytosis of CSF with negative etiological study
Normal neuroimaging studies, except transitory and focal reduction of the cortical perfusion demonstrated in the cerebral SPECT
Nonepileptiforms and nonpermanent changes in the EEG

EEG: electroencephalogram; CSF: cerebrospinal fluid; SPECT: single-photon emission computed tomography.

In January 1999 Jover-Sáenz et al [30] communicates another case with antecedents of ulcer proctitis inactivates and they proposed that the episodes have a spontaneous resolution in less than 4 months.

In 2000 January, Falah et al [31] contributes 3 new cases and the after month Moudgil et al [32] other 2 cases, and in March Durieux et al [33] another one. In that same month Pericot et al [34] refers 1 patient with intracranial hypertension that fulfils PMP criteria.

In this same year Serrano-Castro et al [35] contributes the case of a 27-years-old man without personal antecedent (including risk factors, migraine and toxic consumption of substances except tobacco) to which realized three studies of transcraneal Doppler and finds for the first time that the reactivity in hypocapnia was greater than in hypercapnia. This can be indicative of a permanent state of arteriolar vasodilatation concluding that the cerebrovascular hemodynamic of the PMP is similar to migraine with aura and different from hoped in infectious of the

Table IV. Diagnostic criteria by the International Classification of Headache Disorders, 2nd edition, part 7.8, proposed by the International Headache Society (HIS) [50].

A	Episodes of moderate or severe headache lasting hours before resolving fully and fulfilling criteria C and D
B	Cerebrospinal fluid pleocytosis with lymphocytic predominance (> 15 cells/mL) and normal neuroimaging, CSF culture and other tests for etiology
C	Episodes of headache are accompanied by or shortly follow transient neurological deficits and commence in close temporal relation to the development of CSF pleocytosis
D	Episodes of headache and neurological deficits recur over < 3 months

CSF: cerebrospinal fluid.

CNS postulating like cause of migraine the activation of the trigeminus-vascular system and like cause of the focal symptoms the phenomenon of propagated cortical depression.

In 2001 Piovesan et al [36] does reference a 23-years-old man diagnosed of PMP to which realized several LP and where the CSF opening pressure realized during the symptomatic episodes shows numbers of 40 and 44 cm of CSF whereas in the asymptomatic period it's of 19 cm, the same it happens with the CSF closing pressure (28 cm and 32 cm in symptomatic period and 14 cm in asymptomatic period). The rest of comparison of CSF was similar during the symptomatic period that asymptomatic. It's the first time that demonstrates an increase of the intracranial pressure in patients with PMP during the symptomatic period.

In October 2001, Spelsberg et al [37] contributes 2 new cases and in May 2002 Fleisher et al [38] contributes an another one.

In October of that year, Nomura et al [39] establishes the first case known in Japan. This is a 28-years-old woman with diagnoses criteria of PMP and right hemispheric clinic that shows a reduction of the amplitude in the cortical component of the somatosensory evoked potentials (SSEP) when they stimulating the left median nerve (it's the first time that contributes a study of this type). Three days after de admission the symptoms and the CSF it normalized and one week later the SSEP and the cerebral SPECT too.

That same year 2002 Chalaupka Devetag [40] contributes a new case and does a revision of the possible etiology and Davidsen et al [41] presents other 5 cases. Castro del Río et al [42] presents in 12th Annual Meeting of the European Society of Neurology, a poster where they contribute other 2 patients too. In this same year, in the XIII National Congress of the SEN, Jauría-Foronda et al [43], in a retrospective study of 8,545 patients between October 1992 and December 2001, finds 7 patients with PMP criteria. In the year 2002 Gekeler et al [44] realizes a study with cerebral diffusion-perfusion MR during the aura of a patient with PMP to determine if the prolonged aura cause ischemic changes in parenchyma cerebral and they not finding a reduction of the diffusion.

In January 2003, Tsukamoto et al [45] contributes another case of a 20-years-old woman whose cerebral SPECT realized 12 days after the symptoms showed a hyperperfusion in the left parietal-temporal-frontal region coincident with the clinic, requiring readmission 10 months later for another compatible clinic with PMP. All the symptoms disappeared in 24 hours. It's an atypical case because exists recurrence beyond the 3 months. This same year, De Rivas-Otero et al [46], contributes a new case and they realize electrophoresis of the CSF showing a polyclonal increase of IgG with normal or negative results of blood culture, blood serology of diverse virus and CSF serology of enterovirus Echo-coxsackie, simplex herpes virus 1 and 2, parotiditis, measles and varicella-zoster virus. That same year Pascual et al [47] realized a meta-analysis of PMP and does reference to a study realized in 1951 by Symonds [48] (possibly the first description of syndrome) who detailed a man with episodes of visual loss and hemiparesis followed of migraine, vomits and drowsiness with increase of the pressure in CSF and pleocytosis, whose episodes lasted some days and later they disappeared completely. He comments that the meningoencephalitic infection and the activation of the immune system can produce antibodies against antigens of cranial and/or neuronal vases that would cause the phenomenon of propagated cortical depression.

In May 2003, Chapman et al [49], contributes with 10 patients diagnosed of PMP and in 8 of these analyzes the *CACNA1A* gene (altered in 50% of familiar hemiplegic migraine dominant autosomic or sometimes in the sporadic form) and none of them presents this alteration.

In 2004, the International Classification of Headache Disorders, 2nd edition [50], propose by the International Headache Society where appears the new definition of the PMP as HaNDL (syndrome of transient headache and neurological deficits with cerebrospinal fluid lymphocytosis) (Table IV). In this classification they show that the patient can experiment papilledema and even proposes a series of diagnoses differentials. That same year Schoenen et al [51] realized other diagnosis differential between the focal migraines that presents signs and neurological symptoms between which they are the HaNDL. The diagnosis differential includes the migraines of unilateral hemisphere distribution (Tolosa-Hunt syndrome, trigeminal neuralgia, trigeminoautonomic migraine, migraine with aura, herpes-zoster and dissection of carotid artery) or those in which they appear signs and symptoms of cortical affectation (migraine with aura, cerebrovascular pathology and supratentorial neoplasia).

In this year 2004, Vicente-Mas et al [52] comments in a letter to the director the case of 31-years-old men that fulfill of HaNDL criteria and this shows IgM for CMV positive in blood with negative IgM anti-CMV in CSF and nevertheless the polymerase chain reaction (PCR) in CSF was positive for CMV.

In April 2004, Mateo et al [53] contributes a case and that same year Santos et al [54], contribute an atypical case for the persistence of the clinic and the symptomatic intracranial hypertension. It's a 23-years-old man who presented, among others, left VI cranial nerve palsy and where the first CSF (day 7 beginning migraine) showed pleocytosis (400 leukocytes; 96% MN), highs levels of CSF proteins (1.78 g/dL) and CSF pressure of 50 cm. The day 22 (15 days later) a new LP showed 200 leukocytes (mononuclear 94%), proteins 1.04 g/dL with CSF opening pressure of 48 cm. Eight days later (day 30) for the persistence of the recurrent clinic with persistence of VI cranial nerve palsy is realized a new LP who shows 190 leukocytes; (100% MN), CSF proteins 1.06 g/dL, CSF opening pressure 45 cm. They initiate treatment with prednisone (1 mg/kg/day) to the 45 days of the beginning clinic and stayed 2 months. The crisis remitted from second month of evolution and the VI cranial nerve palsy was resolved 2 weeks after the remission of the crisis (day 74). It was realize a LP three months after the beginning clinic that was normal.

In this year 2004, Carrillo-García et al [55], proposes the definition of headache with neurological deficit and lymphocytosis and contributes 8 cases. They don't denominate the disease pseudomigraine with pleocytosis, among others, because the headache don't reunite the characteristics of migraine but they postulate that etiopathogenesis can be similar.

In 2005 Fumal et al [56], contributes a 16-years-old woman to which they realize transcranial magnetic stimulation, brainstem auditory evoked potentials (BAEP) and visual evoked potentials (VEP) during and after the episodes of HaNDL concluding that these patients have a electrophysiological pattern similar to migraine (alterations in the single fiber electromyogram like than migrainous patients with prolonged aura and increase of BAEP and VEP at cortical level of the migrainous with or without aura). This electrophysiological pattern remains stable after the resolution of the episodes of HaNDL. That same year Barroso et al [57] contributes the case of 17-years-old woman and Yukiko et al [58] contributes the case of 40-years-old man with personal history of migraine during 10 years. This patient receive after an episode zolmitriptan and twenty days later present transient global amnesia and later (4 days later) confusional symptoms. The EEG, brain MR and cerebral angio-MR were normal but the cerebral SPECT showed left frontal-temporal and left thalamic hypoperfusion. The CSF, realized 10 days after de admission, showed lymphocytosis of 23/mm^3, normal pressure, CSF glucose 63 mg/dL and CSF protein of 29 mg/dL and all the symptoms was solved in two months being the clinic compatible with HaNDL. The possibility of a secondary thalamic infarct to vasospasm by zolmitriptan in migrainous patient was considered but it couldn't be demonstrated.

In July 2005, Nakashima [59] comments that in Japan only 2 cases have been reported suggesting this underdiagnosed for their ignorance. In that same year, Giorgetti et al [60] contributes the case of 34 years-old man who presents 3 episodes (years 1992, 1998 and 2005) of severe and diffuse headache with focal and transitory neurological deficits being realized in two occasions a LP where is observed lymphocytosis and a elevation of CSF protein being compatible with HaNDL. The atypical thing of the clinic is the existence of a first relapse after 6 years and the temporary pattern.

In 2005 Shikishima et al [61] also comments ophthalmological manifestations in the HaNDL associated to hyperthyroidism and unspecific frontal injuries and that same year Safier et al [62] contributes the case of 10-years-old girl.

Initiate the year 2006 Martín-Balbuena et al [63] presents 15 patients (diagnosed between August 1993 to February 2005) in the World Congress of Neurology celebrated in Sydney (Australia) in a retrospective study in an only hospital. The importance of this study is because not have been described to date so many cases in a same hospital. That same year, only Pariso et al [64] contributes another case to medical literature.

One of the last described cases is the Ruiz et al [65] in 2007. They described a 20-years-old girl with 3 episodes of paresthesia, incoherent language and pleocytosis of CSF (73 leukocytes/mm^3 with mononuclear 90%) in a period of 3 weeks. In this case they realized PCR in CSF for *Mycobacterium*, enterovirus and herpesvirus results negative.

CONCLUSIONS

Most of publications on the syndrome they are contributions of one or several cases and revisions concluding that it's more frequent in young men with susceptibility to migraine that they present infectious antecedents appearing a clinic similar to migraine with aura (except by the pleocytosis of the CSF and greater frequency in men) or an aseptic meningoencephalitis (except by the absence of meningism, CSF glucose normal and negativity in microbiological tests).

They have been seen cases that fulfill criteria diagnoses of HaNDL with negative serology for CMV but with PCR positive in CSF and the question would be if we must to do in all cases PCR virus in CSF to exclude this possibility. In some publications it's shown that the criterion of recurrence of 3 months is something arbitrary because there are cases of recurrence after several years, like the intensity of the migraine and, therefore, these criteria for a greater sensitivity in their diagnosis had to be reviewed. In the complementary tests realized, we found that the EEG usually shows slowing during the symptomatic period normalizing later, happening the same with the CSF, with CSF glucose normal always, can show lymphocytic pleocytosis, CSF proteins elevated with CSF opening and closing pressure initially ascending that soon is normalized. The cerebral SPECT shows that could have 2 phases, one first with cerebral hypoperfusion and later hyperperfusion reactive and normalization finally. The autoimmune theory would not explain so that the clinic is limited in the time since these diseases are chronics and recurrent during years. The existence of a physiopathology similar to migraine with aura would not explain the great number of episodes, even with fever, during a period of less 3 months because it's understood that migraine is a chronic entity and, although can have some migrainous episode throughout the life without being migrainous, would be stranger who only in a short period of time were manifold episodes. In addition the migraine usually is not associated to lymphocytosis in CSF and is more frequent in women. The existence of a similar clinic when are administered high doses of intravenous immunoglobulin defer of the HaNDL because can be accompanied by meningism and eosinophilia in CSF in but not being in HaNDL.

Finally there's to emphasize the benignancy of disease and the important differential diagnoses with other diseases that require a greater attention and therefore it's important to discard them before of definite diagnoses of PMP or HaNDL because the treatment may be different.

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PSEUDOMIGRAÑA CON PLEOCITOSIS EN EL LÍQUIDO CEFALORRAQUÍDEO O SÍNDROME DE CEFALEA Y DÉFICIT NEUROLÓGICOS TRANSITORIOS CON PLEOCITOSIS EN EL LÍQUIDO CEFALORRAQUÍDEO. REVISIÓN HISTÓRICA

Resumen. Introducción. *El síndrome de pseudomigraña con pleocitosis (PMP) de líquido cefalorraquídeo o síndrome de cefalea y déficit neurológicos transitorios con pleocitosis en el líquido cefalorraquídeo (HaNDL) es una entidad de la que se han llevado a cabo múltiples aportaciones sobre su etiofisiopatología en los 25 años desde su descubrimiento.* Desarrollo. *La PMP se describe en 1980 por Swanson, Bartleson y Whisnant, y paralelamente por Martí-Massó, y desde entonces se han aportado numerosos casos, algunos atípicos por cefalea leve, recurrencia prolongada, hipertensión intracraneal sintomática o infecciones por citomegalovirus que simulan PMP. También se han propuesto varios criterios diagnósticos a lo largo de los años, establecidos actualmente en el año 2004* (International Classification of Headache Disorders). *Se han realizado aportaciones a su conocimiento gracias a la realización de electroencefalogramas, tomografía con emisión de fotón único cerebral, Doppler transcraneal, potenciales evocados somatosensoriales, resonancia magnética cerebral de difusión-perfusión, lo que ha dado lugar a la existencia de diversas teorías, como la infecciosa-autoinmune, disfunción de la barrera hematoencefálica, depresión cortical propagada, activación trigeminovascular, etc.* Conclusiones. *La PMP o HaNDL es una entidad benigna con etiofisiopatología aún desconocida y en la que es importante el diagnóstico diferencial con otras entidades potencialmente más peligrosas. [REV NEUROL 2007; 45: 624-30]*

Palabras clave. *Cefalea. Déficit neurológico. HaNDL. LCR. Pleocitosis. Pseudomigraña. Tomografía por emisión de fotón único.*