Headache and pain 2

PP3169

**Hypertrophic cranial pachymeningitis: diagnostic and therapeutic challenges**

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**Introduction:** Hypertrophic cranial Pachymeningitis (HCP) is an inflammatory process that thickens the dura mater. This disease has various etiologies. The aim of this study was to describe the clinical presentation of HCP and therapeutic options.

**Case report:** The clinical features, neuroimaging findings, and treatment outcomes for four patients with different causes of HCP are reported here. Inaugural clinical presentations were: subacute intracranial hypertension syndrome (n=1), visual disturbances (n=1), orthostatic headache (n=2). In all patients, brain MRI revealed a thickened dura mater. Investigations lead to three different diagnosis: tuberculosis of the central nervous system, sarcoidosis and spontaneous intracranial hypotension. Treatment included anti-tubercular therapy, corticosteroid and immunosuppressive drugs and epidural blood patch.

**Discussion:** Hypertrophic cranial pachymeningitis is an uncommon disorder with few studies correlating clinical, imaging and histopathological features. Clinical manifestations depend on the location of lesions. Headache is the most common sign, and can reach 100% in cases of idiopathic HCP. Involvement of cranial nerves is also frequent especially the VI’s pair, none of our patients had cranial nerves involvement. MRI is the gold standard, it confirms the diagnosis of HCP, assesses its intensity and the lesions distribution, and also detects possible complications. The biopsy of meninges is of great interest especially for idiopathic HCP but it remains an invasive procedure which must be left for last intention.

**Conclusion:** This report highlights the challenges of the diagnosis and management of hypertrophic pachymeningitis. Despite frequently posing diagnostic challenges, HCP has favorable outcome when treated appropriately.

**Disclosure:** Nothing to disclose

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PP3170

**Patients’ perspectives on a minimal-contact self-help intervention for migraine**

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**Introduction:** Migraine affects 10 million people in the UK, with total costs estimated at £5 billion a year. We aimed to test a self-help behavioural intervention for migraine-related symptoms and disability.

**Methods:** We undertook a nested qualitative study within a Self-management migraine Headache Education pilot trial. The intervention consists of relaxation techniques with aspects of CBT, delivered in 5 sessions by a nurse CBT therapist. Participants were recruited by headache specialists. The first participants to complete the intervention and follow-up were invited to a semi-structured interview. The aim was to explore the aspects of the intervention which participants liked or found difficult, and their beliefs and anxieties about migraines. Interviews were transcribed verbatim and analysed for themes.

**Results:** Half the intended group (9/10) of participants have been so far interviewed. The majority had well-established migraines and the impact on their work and social lives was important. Nearly all participants identified stress as a triggering or exacerbating factor to their migraines. Anxiety over the lack of control or underlying cause of the migraine was common. Participants found the CBT-like aspects of the intervention challenging. The relaxation techniques were popular, and easier to maintain. Participants reported that the benefits included reduction in headache frequency, anxiety and increased ability to relax.

**Conclusions:** Participants learnt some CBT and relaxation techniques. Some participants continued to practice them, more frequently relaxation. Preliminary findings suggest this intervention is acceptable to patients, and it may reduce a vicious cycle of migraine symptoms.

**Disclosure:** Nothing to disclose
PP3171

Atypical nummular headache or circumscribed migraine? Pressure algometry data in 3 cases

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Nummular headache (NH) is characterized by head pain circumscribed to an area of 1-6 cm diameter. Migraine features including photophobia, phonophobia, nausea, or triggering by physical activity have been occasionally described. We present 3 cases in whom pressure algometry facilitated differential diagnosis between NH and migraine. Three patients fulfilling diagnosis criteria for NH. Pressure pain thresholds (PPT) assessed on 21 points distributed over the scalp according to normalized positions for electroencephalogram recordings, as well as symptomatic area and non-symptomatic symmetrical point. Pain sensitivity maps constructed for the whole scalp.

Patient 1: 21-year-old woman with episodic pain confined to a circular area of 5 cm diameter over left frontal scalp, accompanied by photophobia and phonophobia, and triggered by physical activity.

Patient 2: 48-year-old man with continuous pain in a rounded area of 2 cm diameter on right parietal scalp, with superimposed exacerbations accompanied by nausea.

Patient 3: 78-year-old man with episodic pain in a circular area of 4 cm diameter with right frontal location, triggered by physical activity. PPT maps in first two cases showed anterior to posterior gradient as previously described in migraineurs; none of them responded to gabapentin but in both significant improvement with beta-blockers. PPT map in third patient typical of NH, with hypersensitivity restricted to symptomatic area; complete relief was achieved with amitriptyline.

NH concomitant with symptoms suggesting central sensitization might correspond to a circumscribed migraine. Pressure sensitivity maps may allow to answer this question and to guide treatment.

Disclosure: Nothing to disclose

PP3172

Multifocal nummular headache: a cartographic study

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Introduction: Nummular headache (NH) was defined as a pain felt in a small circumscribed area of the scalp. This confinement of pain suggests a peripheral mechanism. Infrequently NH is multifocal, each symptomatic area retaining all typical characteristics of NH. Here we present a case report of multifocal NH studied with pressure algometry.

Methods: 14-year-old woman with a 3-year history of continuous pain in four rounded areas 4 cm in diameter, all of them with the same size and shape. Pain lasted about 3 hours in each area. They were located in symmetrical areas of the parietal and occipital regions. Pain intensity was 5 out of 10 in a visual analog scale. Pressure pain thresholds (PPT) were measured with a mechanical algometer on 21 points distributed over the scalp. Locations of these points were based on normalized positions for electroencephalogram recordings. Symptomatic points were also assessed. A pain sensitivity map was constructed. Neurological exam was normal, without sensory symptoms with palpation in painful areas or local trophic changes. Brain magnetic resonance imaging and blood tests were obtained with no abnormalities.

Results: As previously shown in NH, symptomatic points had lower PTT values than the surrounding areas, so the map showed four patches of hyperalgesia at the painful zones. Preventive treatment with gabapentin achieved complete pain remission.

Conclusions: As far as we know, this is the first multifocal NH assessed with pressure algometry. According to our results, peripheral mechanisms are maintained in multifocal NH.

Disclosure: Nothing to disclose
PP3173

Idiopathic intracranial hypertension: clinical characterization and prognosis of a group of patients
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Introduction: Idiopathic intracranial hypertension (IIH) is characterized by signs of intracranial hypertension, in the absence of meningeal inflammation and structural lesions.

Methods: Identification of patients with IIH, based on criteria by Friedman 2002, observed between 1990 and 2013. Clinical files review.

Results: Twenty patients were identified, seven excluded for not meeting criteria. From thirteen patients, nine were female with mean age at presentation 31.3±14.2 years. Eight had obesity I-II, five were overweight/normal. Headache was the presenting symptom in ten patients, visual loss in two, ocular pain in one. Six patients had diffuse headache, four hemicrania. Six experienced a tightening headache and four pulsatile. It was paroxysmal in three patients and continuous in seven (three with morning worsening). All experienced visual disturbances: seven diplopia, three blurred vision, three photophobia. Twelve had papilledema, eleven bilateral. Blind spot enlargement was the commonest visual defect (nine). Mean CSF opening pressure was 393±98.6mmHg. All were treated with acetazolamide, mean dose 1,000mg, plus furosemide in five. Median follow up was 4.0 years (0.5-10.0). Seven stopped medication after median time 1.2 years (0.1-9.3). Two were submitted to ventriculoperitoneal shunt, seven months and nine years after first symptoms.

Conclusions: Headache is a key symptom in IIH, as recognized by International Headache Society. It was the commonest presenting symptom in our series; however a significant proportion of patients did not have the classical intracranial hypertension headache. There should be a high level of suspicion for IIH, even when headache lacks the typical clinical features.

Disclosure: Nothing to disclose

PP3174

Somatoform dissociative experiences in migraine without aura
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Introduction: The comorbidity of headache and psychiatric symptoms is frequently found in clinical practice. Most papers on psychiatric and headache comorbidity are focused on depressive and anxiety disorders. Less known comorbidity of other somatic symptoms with headache, especially migraine. The aim of this study was to assess somatoform dissociative experiences among patients with migraine without aura.

Methods: 110 patients suffering from migraine without aura according to ICH-III criteria who applied to the outpatient unit of Neurology Department of Erzurum Regional Training and Research Hospital in Erzurum, Turkey, and 33 subjects without migraine were recruited for the study. The participants were asked to complete sociodemographic forms, the Somatoform Dissociation Questionnaire (SDQ), Beck Depression Scale (BDS), Beck Anxiety Scale (BAS), Migraine Impairment Disability Assessment Scale (MIDAS) and Visual Analog Scale (VAS).

Results: In patients group; SDQ scores showed that 47.2% were normal 29.1% had Somatoform Dissociation, 18.2% Dissociative disorder not otherwise specified (DDNOS), 10% Dissociative identity disorder (DID). In DID group 63.6% had 10 point VAS score. The test values were correlated with MIDAS scores. 17.3% had severe, 21.8% moderate, 23.6% mild, 37.3% minimum depression. 40.9% had severe, 32.7% moderate, 16.4% mild, 10% minimal anxiety levels. MIDAS were found severe disability in 43.6% of patients.

Conclusions: This findings imply that migraine patients have high risk of somatoform dissociative experience. A significant positive correlation was found between SDQ scores and MIDAS and VAS scores. Future studies with psychiatric evaluation are needed to investigate further the influence of somatoform and dissociative disorders in migraine related disability.

Disclosure: Nothing to disclose
PP3175

Intramuscular stimulation of pericranial myofascial trigger points in the treatment of frequent episodic tension-type headache

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Introduction: The present study aimed to evaluate the efficacy of intramuscular stimulation (IMS, also known as Trigger Point Dry Needling) at the pericranial muscles in patients with frequent episodic tension-type headache (ETTH).

Methods: The study included 48 patients with frequent ETTH that were randomized into 2 groups. IMS was administered to group 1 (n=24), massage therapy was administered to group 2 (n=24); IMS was applied to the trigger points of the frontal, temporal, masseter, sternocleidomastoid, semispinalis capitis, trapezius and splenius capitis muscles bilaterally. The frequency of painful days and the patients' visual analogue scales (VAS) were evaluated before treatment, and 1, 2, 4 weeks and 3 months after treatment.

Results: Mean age of the patients was 34.28±9.41 years (range: 21-57 years). In both groups, the number of painful days in a month, visual analogue scale values, amount of analgesic use in a month after the treatment. As a result, all of the parameters were found to have improved in both groups (p<0.05), and the IMS group’s response to the treatment was better than the Massage group (p<0.001).

Conclusions: IMS into the myofascial Trigger points located in the pericranial muscles could be considered as an effective alternative treatment for ETTH.

Disclosure: Nothing to disclose

PP3176

Ocular and cervical rectified vestibular evoked myogenic potentials in patients with migraine and tension type headache

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Introduction: Numerous studies have identified an association between primary headache disorders and several vestibular syndromes. Cervical VEMP (cVEMP) reflects saccular function, whereas ocular VEMP (oVEMP) reflects probably predominantly utricular function. Therefore, to determine if oVEMP and cVEMP differ in patients with migraine without aura (MO), tension type headache (TTH) and controls.

Methods: 15 female patients with MO, 18 female patients with episodic TTH were included in the study. 34 healthy volunteers for comparable age were taken as the control group. The participants underwent a Korean dizziness handicap inventory (DHI) questionnaire. oVEMP and cVEMP using a blood pressure manometer were recorded. From the VEMP graphs, latency, amplitude parameters and asymmetry ratio were analyzed after EMG rectification.

Results: The mean DHI scales of patients were significant higher in patients with MO compared with TTH groups (p<0.05). But, P13, n23 latencies and amplitudes of rectified cVEMP in MO and TTH patients were not significantly different from the results of the healthy controls (p>0.05). Rectified oVEMP mean n1, P1 latencies and amplitude asymmetry ratio among groups were not significant (p>0.05). Also, no significant correlation were noted between scores of DHI and VEMP parameters.

Conclusions: This preliminary study suggested that MO and TTH seem to be associated with a normal interictal ocular and cervical VEMP profile. Therefore, a larger study including migraine subtypes such as vestibular migraine necessary for improved understanding of the clinical usefulness of the VEMP test.

Disclosure: Nothing to disclose
**PP3177**  
**Carotid stenting headache**  
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**Introduction:** The carotid stenting can cause secondary headache. But it is unclear who could develop neither its features.

**Methods:** We used a prospective observational study. We registered patients who went to carotid stenting and were hospitalised in the Lozano Blesa Hospital. We studied sociodemographic, cardiovascular risk factors, carotid affection and primary headache history. We made a structured interview, before, after technique and twenty-four hours later, to know if the headache appears.

**Results:** 36 patients were included. The average age was 67 years. The 83% (N=30) were males. The 22.9% (N=8) had primary headache history, 37.5% (N=3) migraine with aura and 62.5% (N=5) of headache tensional. The secondary headache appeared in 8 patients (22.2%), in 50% (N=4) during the technique, 37.5% (N=3) during the first six hours and in one case after 24 hours. In the 50% (N=4) the headache lasted less than ten minutes, in 25% (N=2) between 2-120 minutes and 25% (N=2) 2-24 hours. The principal localization was in the fronto-temporal region (50%, N=4), facial (25%, N=2) and occipital and hemicraneal 12.5% (N=1) each one. The 75% (N=6) was unilateral and 37.5% (N=3) bilateral. It was described as oppressively in 75% (N=6) with mild intensity in 62.5% (N=5) and moderate 37.5% (N=3) and 75% (N=6) didn’t need analgesia. It had seen a power significance associated to developed who were younger (p=0.02), primary headache history (p=0.033) and left carotid affection (p=0.05).

**Conclusions:** The carotid stenting headache appears in 20% of the patients, and there is higher risk to develop the younger people, the primary headache history and left internal carotid artery affected.

**Disclosure:** Nothing to disclose

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**PP3178**  
**Iatrogenic intracranial hypotension associated with cerebral venous thrombosis**  
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**Introduction:** Intracranial hypotension (IH) may be a complication of dural puncture during epidural anesthesia (EA). The association between IH and cerebral venous thrombosis (CVT) is rare; the mechanism is probably related to venous enlargement that leads to stasis, increasing the risk of thrombosis. A change in the character of the headache should prompt a possible diagnosis of CVT.

**Case report:** Female, 20 years old, healthy. She gave birth under EA. 24 hours later she complained of a headache related to orthostatism that ceased when supine. Neurological examination, performed 8 days after symptoms onset, was normal. She had been treated with endovenous caffeine, analgesics and bed rest with no improvement. A brain venousMRI was performed three days later, which showed bilateral subdural hematomas (SH) as well as venous thrombosis of a parietal cortical vein and superior longitudinal sinus (SLS). At the same day, an epidural blood patch (BP) was performed, with immediate relief of the headache. Follow-up MRI (6 days after BP) showed complete reabsorption of the SH and complete patency of the cortical vein with partial recanalization of the SLS. Patient was discharged, asymptomatic.

**Conclusions:** We report the occurrence of CVT as an uncommon consequence of severe IH secondary to EA. Due to the association between both disorders the usual clinical presentation of CVT was not observed. BP is an efficacious therapy for IH and its complications.

**Disclosure:** Nothing to disclose
PP3179

Evaluation of anti-neuronal autoimmunity in migraine patients with white matter lesions

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Introduction: Immunological mechanisms have been proposed for the pathogenesis of migraine with white matter lesions (MWML). However, specific antigenic targets have never been investigated in MWML patients.

Methods: To investigate potential neuronal target autoantigens, sera of 13 MWML (10 women, 3 men; mean age 37.2±3.1), 50 migraine patients without MRI lesions (39 women, 11 men; mean age 35.1±4.7), 23 relapsing remitting multiple sclerosis (RRMS) patients with multiple periventricular plaques (18 women, 5 men; mean age 34.8±5.2) and 23 hypertension-related cerebral small vessel disease (SVD) patients (17 women, 6 men; mean age 58.2±6.4) were screened with protein macroarray and ELISA. Antibody levels were compared with ANOVA.

Results: Protein macroarray analysis produced 75 reactive clones. Four clones (ENSA, SRI, LPPR3, ATP1B2) with the highest signal intensity and number of duplicates were selected for further investigation. ELISA studies showed high-titer serum antibodies to one or more of these proteins in 7/13 of MWML, 13/23 of SVD, 8/23 of RRMS and 1/50 of migraine patients with no MRI lesions. A common reactivity against four examined antigens could not be found in any group. As assessed by ANOVA, serum levels of antibodies to ENSA, SRI and LPPR3 were significantly higher in MWML, RRMS and SVD groups than control migraine patients.

Conclusion: Our study failed to find an autoantibody response unique to MWML. Nevertheless, demonstration of antibodies in neurological diseases with cerebral white matter destruction but not in migraine patients without brain lesions suggests that migraine associated lesions might not have a benign nature.

Disclosure: Nothing to disclose

PP3180

Evaluation of sensory and pain perception and its central modulation in chronic low back pain

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Introduction: Chronic low back pain (LBP) is one of the most common painful conditions, but the exact mechanisms of chronic pain development are still not fully understood in these patients. The objective of this study was to evaluate the sensory profiles and function of central modulation of pain perception in LPB patients in order to reveal possible underlying mechanisms of chronic pain.

Methods: A detailed evaluation of sensory and pain perception according to DFNS QST protocol was performed in 42 chronic LBP patients (24 men, median age 36 years) and 47 age-matched healthy volunteers (17 men). Furthermore, magnitude of conditioned pain modulation (CPM) and temporal summation (TS) using thermal stimuli were assessed.

Results: LBP patients showed significantly increased detection thresholds for most of the non-painful sensory modalities examined (warm, cold, vibration, mechanical detection), more frequent paradoxical heat sensation phenomenon and decreased thermal and pressure pain thresholds in comparison to controls, particularly in feet. The differences in CPM and TS effect between the groups were not significant, but NRS scoring of all the painful stimuli applied during these tests was higher in LBP patients comparing to controls. Similarly, higher mechanical pain sensitivity in LBP group was found.

Conclusions: Clearly decreased sensory perception and increased pain perception and pain sensitivity were found in LBP patients compared to healthy controls, particularly in feet. Normal function of CPM and TS shows that abnormality of these central modulatory mechanisms doesn’t play a key role in the LBP development.

Disclosure: Supported by Internal Grant Agency of Czech Ministry of Health - grant Nr. NT13523-4.
PP3181

Face recognition in patients with migraine

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Introduction: Prosopagnosia is a rare dysfunction seen during the aura phase of migraine. We aimed to evaluate the face recognition which has not previously been investigated in migraineurs during the interictal period and its relationships with clinical features.

Methods: Seventy-four migraineurs with or without aura diagnosed according to the International Headache Society criteria and 37 healthy control subjects were included. Benton Face Recognition Test (BFRT) and Judgement of Line Orientation Test (LOT) for complex visual perception were applied to all participants.

Results: Migraineurs showed significantly lower performance in both of the BFRT and LOT scores (p:0.027; p:0.014 respectively); indicating impaired visuospatial perception. In the subgroup analysis, these impairments were more pronounced in the group with migraine without aura, interestingly.

Conclusion: Migraineurs had poorer performance in both face recognition and visual-spatial perception. We think that our findings could be based on functional differences in the migraineurs’ brain or genetic changes.

Disclosure: Nothing to disclose

PP3182

Headache characteristics in the geriatric age group

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Introduction: We analyzed geriatric people presenting with headache, aged over 65 years, admitted to our outpatient clinic between the years 2011-2013. The cases were selected according to the International Headache Classification 3rd Edition.

Methods: We scanned 175 patients (126 female, 49 male), mean age was 74 years. The cases were classified as primary, and secondary headache groups, then were scanned according to any accompanying comorbidities, along with imaging (MRI) characteristics.

Results: In the primary headache group (142 patients) 21% of the patients were subclassified as migraine type headache, 56% as tension type headache, and 45% as trigeminal neuralgia. In secondary headache group (30 patient) 27% were associated with hypertension, 17% with temporal arteritis, and 20% with cervical pathology, 14% with intracranial mass. MRI characteristics were were as 75% nonspecific differences, 25% normal findings.

Conclusions: This study was designed to determine the type of headache most frequently encountered in the geriatric population, along with accompanying chronic diseases, and imaging characteristics. These preliminary data of our ongoing study, will be presented with detailed statistical analysis.

Disclosure: Nothing to disclose
**PP3183**

**Decreased antioxidative status in migraine patients with brain white matter hyperintensities**

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**Introduction:** Migraine patients have an increased risk to develop deep white matter hyperintensities (WMH) than the general population, and the prevalence of these lesions is higher in migraine with aura (MWA) than in migraine without aura (MWoA). Oxidative stress is believed to play a role in the pathogenesis of migraine. The present study was undertaken to assess oxidant-antioxidant balance of migraineurs with and without WMH. We hypothesized that increased oxidative stress and decreased antioxidant response may play a role in the pathophysiology of WMH in migraineurs.

**Methods:** We evaluated oxidative status with MDA as its major indicator and to determine the activities of antioxidant enzymes: SOD, GSH-Px and catalase in serum of migraineurs with and without WMH. The study included 18 migraine patients with WMH at the age of 33.28±9.94 years and 14 migraine patients without WMH, aged 34.71±9.09 years.

**Results:** The MDA, SOD and GSH-Px levels in serum were not statistically different between patients with WMH and without WMH. In the migraine group with WMH, serum catalase activity was significantly lower than in migraine group without WMH (p<0.013).

**Conclusions:** We demonstrated that the levels of catalase were decreased in migraine patients with WMH. These finding suggest that decreased antioxidant response may play a role in the pathophysiology of WMH in migraineurs. Further studies are necessary.

**Disclosure:** Nothing to disclose