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Headache

Correlation of headache severity with screen time in patients with primary headache: a cross-sectional study

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Background:

Headache is the commonest neurological outpatient illness. With the advent of technology, increasing screentime has been shown to have effects on the occurrence of severity of headache. We aimed to determine the association of screentime with the type and severity of headache.

Methods:

In a single-center, cross-sectional study, patients with primary headache were enquired about the headache characteristics and screentime usage. The aim of the study was to determine the association of screen-time with headache severity in patients with primary headache. The co-factors studied were headache subtype, age, sex, frequency of headache.

Results:

In the study period (Sep2023-2024), there were 242 patients with primary headache. Majority were females (188(77.7%)) with median age 34.0(26.0;42.7) years. The commonest headaches were migraine (138(57.0%)), tension-type (69(28.5%)) and cluster (17(7.0%)). The commonest prophylactic medications were Tricyclic Antidepressants (95 (45.4%)) and beta-blockers (61(29.2%)). The commonest abortive medications were Naproxen (94 (46.0%)) and Paracetamol (71 (34.8%)).The Visual Analogue Scale VAS) of headache was 7.3 (6.0; 8.0). The screen-time was 192.7(35.0; 302.5) minutes. There was significant correlation of lower age with higher screen-time (Pearson's co-efficient p-value 0.001), and higher screen-time with worse VAS score (Pearson's co-efficient p-value 0.001). When the VAS score was adjusted for age, headache subtype and sex, the significant correlation was retained.

Conclusion:

There was a significant association of screentime with headache severity, when adjusted for age, sex, headache subtype and frequency. The deleterious impact of increased screentime needs to be further studied in longitudinal studies.

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Risk evaluation of OSA in Cluster Headache Patients using the STOP-bang questionnaire

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Objective

To analyze the characteristics of cluster headache using the STOP-Bang screening for high risk of OSA and to define the characteristics of patients in relation to the risk of OSA using the STOP-Bang questionnaire in the cohort of cluster headache patients.

Methods.

This study was a retrospective analysis conducted at a single center, with patients enrolled between January 2019 and November 2022. Patients were diagnosed with cluster headache according to the criteria of the International Classification of Headache Disorders, 3rd edition (ICHD-3). The STOP-Bang screening was used to assess the presence of obstructive sleep apnea (OSA). These data were analyzed and compared based on the risk levels identified by the STOP-Bang screening.

Results.

Of 135 patients with cluster headache, 105 underwent STOP-Bang screening. The study cohort consisted mainly of 89 males (84.8%) with a mean age of 37.3 (±8.25) years. Of the 64 low-risk patients, 48 (75%) were male, while all intermediate- and high-risk patients were male. Body mass index was higher in the moderate- and high-risk groups than in the low-risk group, but there was no difference between the two groups (moderate- and high-risk). Current smokers were significantly more likely to be at high risk (64.9%) than former smokers (16.2%). There were no differences in other cluster characteristics, including average cluster and remission duration, diurnal and seasonal variation, and headache disability questionnaires based on the STOP-BANG score.

CONCLUSIONS

Identifying obstructive sleep apnea (OSA) in cluster headache patients using STOP-Bang is useful to detect comorbidity of cluster headache characteristics.

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New headache after endacarotidectomy

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Headaches associated with CEA are not unusual. Etiology is not well defined, but is thought to be vascular, or due to damaged autoregulation of cerebral flow. Headaches often are in close relation with the time of surgery, mainly in the first week and mostly self-limited.

We performed a prospective study, to evaluate the characteristics of headache following CEA, conducted between January and July 2024, in 478 patients submitted to CEA. 70.7% of patients were male; mean age was 68.4 years-old. Headache incidence was 42.5%, ipsilateral to the CEA in 91% of patients; pressure type headache was the most common pain quality (85.2%) and affected the frontal region alone in 37.5% of headache episodes and diffuse in the others. Most were mild to moderate as intensity and without need of specific treatment, and relieved spontaneously 9.56 % (2 patients) severe throbbing headache, with migraine like qualities. One of them had hyper perfusion syndrome.

No correlation (p 0.05) was found between sexes and no significant value (p 0.05) was determined between the presence of headache and the mean degree of stenosis in the ipsilateral and contralateral carotid operated. History of previous TIA or stroke was the risk factor of post-CEA headache.

Conclusions: Headache following CEA is a common condition; in most cases it is ipsilateral to the procedure, pressure type, mild and self-limiting. When the headache is severe in patient with high state stenosis, should be evaluated the possibility of the hyperperfusion syndrome or cerebral infarction.

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Cortical Gray Matter Thickness Differences in Chronic Migraine Patients With and Without Medication Overuse Headache

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Objective: Prior studies using surface-based morphometric analyses have identified variations in cortical thickness among migraine patients. This study evaluates differences in cortical thickness in patients with chronic migraine (CM), comparing those with and without medication overuse headache (MOH).

Methods: Twenty-two CM patients with MOH and 13 without MOH underwent 3T MRI scans. T1-weighted structural images were acquired using an accelerated sagittal inversion recovery fast spoiled gradient echo sequence. Cortical thickness was analyzed using surface-based morphometry (FreeSurfer software). The study was approved by the Institutional Review Board, and all participants provided written informed consent.

Results: Significant differences in cortical thickness were observed between CM patients with MOH and those without. Patients with MOH exhibited alterations in multiple brain regions, including increased cortical thickness in nine regions and decreased thickness in six. Key regions affected included the anterior cingulate cortex (rostral and caudal), posterior cingulate gyrus, entorhinal cortex, perirhinal cortex, parahippocampal gyrus, isthmus of the cingulate gyrus, and temporal pole. Changes were also noted in the rostral middle frontal cortex, precentral gyrus, and suborbital sulcus.

Conclusions: These findings provide insight into the neural mechanisms associated with CM and MOH, highlighting distinct cortical alterations that may underlie these conditions.

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What headache types present to primary care in England? A retrospective cohort study of medical records

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AIM:

To understand headache types presenting to primary care in England.

METHODS:

A retrospective cohort study using the Clinical Practice Research Datalink Aurum was conducted. Adults aged ≥18-years were indexed into the study on the first observed migraine or headache diagnosis between 19 September 2012 to 1 May 2023. Migraine and headache groups were mutually exclusive.

Prodromal/postdromal symptoms of migraine and potential misdiagnoses were defined using coded events in the 1-year prior to index diagnosis.

RESULTS:

N=476,191 and 1,058,616 adults with migraine or headache were included, respectively – 78.0% and 63.1% female, mean (SD) age 42.1 (15.6) and 47.1 (17.9) years.

Headache and migraine groups experienced similar symptoms with depressed/low mood, dizziness, neck/muscle pain and fatigue being the most common.

Primary headache disorders (including migraine) comprised 39.5% of the cohort, secondary headache comprised 3.4% and the majority of headache was undifferentiated (57.1%). Nearly all people with an undifferentiated headache diagnosis remained without further headache diagnosis in the 1-year after diagnosis (99.9%).

A high proportion of the headache group had a potential misdiagnosis: neck pain (21.5%), sinusitis (20.6%), labyrinthitis (5.0%), transient ischaemic attack (4.6%).

CONCLUSIONS:

This study described headache types presenting to primary care in England. While symptom profiles were similar between groups, most patients with headache were diagnosed with undifferentiated headache and nearly all with undifferentiated headache did not receive a definitive diagnosis within 1-year. A high proportion of those with a headache diagnosis had features suggestive of migraine. Further research will understand socioeconomic disparities in healthcare utilisation in both groups.

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A rare presentation: case study of spontaneous intracranial hypotension

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Background:

Spontaneous intracranial hypotension (SIH) is a rare but significant cause of new onset daily persistent headaches, yet it remains underrecognized. Misdiagnosing this condition can lead to serious consequences, although magnetic resonance imaging has significantly facilitated the diagnosis.

Case history:

We describe a case of 36-year-old male with a one-month history of severe disabling orthostatic positional headaches accompanied by persistent nausea, dizziness, tinnitus, neck stiffness and clinically positive meningeal signs. Initial brain MRI revealed diffuse pachymeningeal thickening and enhancement, along with a 9 mm downward displacement of the brainstem and cerebellar tonsils, raising suspicion of intracranial hypotension. An MRI of the brain and spine with contrast did not identify the source of the cerebrospinal fluid leak. Therefore, a follow-up 3T spinal MRI with myelography was performed, which revealed two dural tears one of which inactive at the moment (spontaneously closed). Additionally, there was a central disc protrusion at L5/S1 and a focal protrusion with an annular tear and right foraminal compression at L4/L5. The diagnosis of idiopathic spontaneous intracranial hypotension type I was confirmed. Due to the spontaneous improvement of symptoms, a non-targeted epidural blood patch was not indicated, and conservative management was continued. Follow-up neuroimaging results were normal.

Conclusion:

This case emphasizes the importance of recognizing spontaneous intracranial hypotension and using serial and multimodal neuroimaging techniques for accurate diagnosis and management to prevent further complications, including brain sagging, dementia, ataxia, and cerebral venous thrombosis as well unnecessary and risky diagnostic procedures.

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Prevalence and Prognostic Factors of Post-SAH Headache: An 18-Month Cohort Study

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Advancements in diagnosis and multidisciplinary care have reduced Subarachnoid hemorrhage (SAH)-related mortality. However long-term complications such as post-SAH headache (PSH), cognitive dysfunction, and emotional disturbances significantly diminish quality of life. Objective: This study aims to evaluate the prevalence, characteristics, and prognostic factors of chronic PSH over an 18-month follow-up in a cohort of 47 patients. Methods: A prospective observational study was undertaken on 47 patients diagnosed with chronic PSH. Data collection encompassed demographic factors, acute-phase complications, and long-term cognitive and emotional disturbances. The data analysis was performed using the statistical software SPSS 25.0 (Statistical Package for Social Sciences). A p-value of ≤ 0.05 was considered statistically significant. Fisher grade and vasospasm severity were analyzed for their correlation with PSH using logistic regression and Pearson correlation. Results: The prevalence of PSH declined from 55.3% at 3 months to 25.5% at 18 months. Chronic PSH was significantly associated with cognitive dysfunction ($p=0.019$) and emotional disturbances ($p=0.023$). A strong positive correlation ($r=0.72$) was found between vasospasm severity and PSH likelihood, though non-linear patterns suggest additional influencing factors. Fisher grade severity predicted a 30% risk of developing chronic PSH. Conclusions: Chronic PSH significantly affects the quality of life of SAH survivors. Prognostic factors, including Fisher grade and vasospasm severity, can guide customized management strategies. Long-term monitoring and personalized therapeutic interventions are critical for improving patient outcomes and addressing chronic complications effectively.

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Effects of Keto Diet in chronic migraine Effects of Keto Diet in chronic migraine

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Nutrition is widely known as one of the important environmental factors that interferes with the course of migraine. Migraineurs are sensitive to certain foods, also to the timing and amount of them. The mechanism through which nutrition could impact to the course of migraine is probably related with the decrease of the inflammation.

In a prospective study, during three-month period we enrolled 23 patients with migraine being being diagnosed as chronic migraine based on the ICHD-3 criteria, between 18 and 65 years-old, most of them females (69%). All participants started eating keto diet with 3:1 ratio of total fat combined with carbohydrates and protein. We evaluated patient in nutrition and neurological point of view. We observed a reduction of frequency of monthly headaches (12.8 ± 9.2 vs. 6.8 ± 8.5 p 0.001), frequency (17.2 ± 8.3 vs. 8.7 ± 6.2; p 0.001) and duration (23.4 ± 14.32 vs. 8.2 ± 11.3; p 0.001) and use of acute medications (10.2 ± 9.26 vs. 4.81 ± 7.87; p = 0.001). Also is seen reduction of weight (75.4 ± 14.3 vs. 67.2 ± 11.5; p 0.001), BMI (27.8 ± 5.9 vs. 22.4 ± 8.5; p 0.001), body fat mass (29.6 ± 13.3 vs. 21.2 ± 9.74; p 0.001).

Conclusions: With ketogenic diet was seen an improvement of headache frequency, intensity, and duration in patients with chronic migraine. Ketogenic diet may be considered an effective non-pharmacological intervention for migraine and also with positive outcomes on body composition.

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Hydrocephalus, whether apoplectiform onset is possible? Case report

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Hydrocephalus is a condition of expansion of the ventricles of the brain, a consequence of previously or currently increased pressure in the central nervous system, which is caused by an excessive amount of cerebrospinal fluid. The causes are different, and at the cause of all of them is a disorder of excessive secretion, accumulation and normal swelling of the cerebrospinal fluid.

When this process is altered or disrupted for some reason, cerebrospinal fluid accumulates causing hydrocephalus and damage to healthy brain tissue.

Obstructive hydrocephalus occurs due to obstruction of the outflow of cerebrospinal fluid, and the most common reasons for it are: tumors, the existence of scar tissue in the brain, congenital anomalies, thrombosis of the upper sagittal sinus. Symptoms develop gradually, the most common are headaches, nausea, vomiting, changes in vision, gait disorder .

A fifty-year-old man comes to the Emergency Center for examintion due to a sudden headache the day before that does not go away with analgesics. Nausea,headache and vomiting occur. There are no deviations from normal in the neurological findings.

Head scan shows a tumor in the third cerebral ventricle corresponding to an ependymoma and obstructive hydrocephalus.

The patient was referred to a neurosurgeon

After the installation of the ventriculoperitoneal shunt, in good general condition, and with "satisfactory" findings on the brain scan, the patient was discharged home.

The literature describes cases of sudden changes of consciousness leading to coma, due to the sudden movement of the tumor, and the sudden development of hydrocephalus.

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Evaluation of Acute Headache in a General Hospital: Red Flags and Practical Challenges – A Retrospective Review from Emergency Department "Dr. Ivo Pedišić Sisak"

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Introduction
Headache is a frequent complaint in emergency departments (ED), ranging from benign migraines to life-threatening conditions such as subarachnoid hemorrhage. Differentiating these requires a structured approach to avoid overdiagnosis or missed diagnoses.

Objective
To propose a clinical algorithm for evaluating acute headaches in resource-limited settings like general hospitals, where challenges include limited diagnostic services, understaffing, and restricted imaging access. We emphasize identifying red flags and optimizing diagnostics within these limitations.

Methods
A retrospective review of 441 headache cases in a general hospital ED over one year identified 189 cases meeting inclusion criteria: adult patients (≥18 years) with non-traumatic headache as the primary complaint and complete clinical data. Exclusion criteria included cervicocephalic syndrome, incomplete records, or other established diagnoses. A framework emphasizing red flags (e.g., sudden onset, neurological deficits, intracranial pressure symptoms) was used to identify life-threatening conditions like hemorrhages, tumors, ischemia, and severe infections.

Results
Of the 189 cases, approximately 70% were classified as primary headaches, with 20% attributed to migraines and 50% to tension-type headaches. The remaining 30% represented secondary headaches, encompassing hemorrhages (10%), tumors (8%), ischemic stroke (5%), and meningitis (2%). Adherence to the proposed algorithm resulted in an estimated 23% reduction in unnecessary imaging, without compromising diagnostic accuracy or patient safety.

Conclusion
A structured diagnostic approach enhances efficiency and safety in headache management, particularly in resource-limited settings. Limitations include the retrospective design, single-hospital focus, and reliance on clinical data, which may affect generalizability. Future prospective studies are needed to refine these findings.

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Idiopathic intracranial hypertension - from headache onset to diagnosis: case report

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Introduction: Idiopathic intracranial hypertension (IIH), also known as pseudotumor cerebri, is a rare condition, associated with increased intracranial pressure, with no obvious detectable cause and unknown pathogenesis. The condition is more common in women, as female gender, obesity and some medications (e.g. oral contraceptives) are recognised as risk factors. The main symptoms are severe headache, vision disturbances and vision loss, nausea, vommiting, tinnitus. Diagnosis is based on clinical symptoms, increases opening pressure on lumbar puncture and several MRI findings.

Case presentation: We present a 24-year-old overweight female patient with sudden onset of constant, severe, generalised headache, accompanied by nausea and followed 3 days later by blurred vision, reduced visual acuity and bilateral papilledema. CT scan and venography found no abnormalities, but MRI scan detected an empty sella sign and lumbar puncture revealed increased opening pressure (around 40-45cm H2O) with normal liquor protein, cells and glucose. A more detailed patient's history revealed that she had been prescribed dydrogesteron (a synthetic progesterone), which had been discontinued the day before the onset of her symptoms. After reaching a definite diagnosis, she underwent surgery for a ventriculo-peritoneal shunt placement and subsequently there was significant improvement, regarding her headache and visual acuity.

Conclusion: This case emphasised the necessity of including IIH as a deferential diagnosis in cases of sudden headache in women with several risk factors for IIH and the importance to act quickly in order to preserve the patient's vision.

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Acute communicating hydrocephalus and vestibular schwannoma- a case report

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The acoustic nerve tumor is a benign growth located along the course of the vestibulocochlear nerve, originating from Schwann cells, hence its name schwannoma. It is typically characterized by a unilateral location and slow growth. Symptoms vary depending on the size of the tumor and its potential mass effect. One common observation is the coexistence of communicating hydrocephalus. As the tumor grows gradually, ventricular system decompensation may occur, leading to the development of hydrocephalus with signs of increased intracranial pressure. A case is presented of a 40-year-old woman who experienced headaches in the occipital region and visual disturbances in the form of blurred vision, which began two weeks before she was admitted to the hospital. In addition, the patient complained of right limb muscle weakness, balance problems, right ear hearing loss and issues with concentration and memory over the past several months. A magnetic resonance imaging (MRI) of the head with contrast revealed signs of communicating hydrocephalus, with an acute angle of the corpus callosum measuring 46 degrees and signs of intracranial hypertension. A focal lesion was found in the right cerebellopontine angle, consistent with an acoustic neuroma of the right vestibulocochlear nerve. The patient was qualified for ventriculoperitoneal shunt implantation, which resulted in satisfactory short- and long-term clinical outcomes.