Poster Tour: Headache

May 6, 11:45 - 12:45

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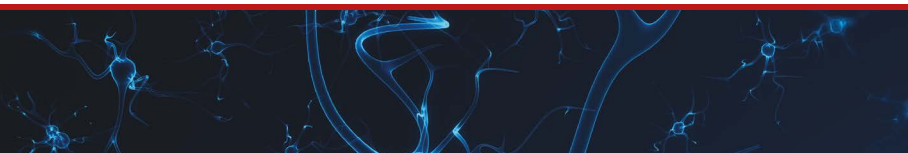

Evaluating the role of non-targeted epidural blood patch in the management of spontaneous intracranial hypotension.

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Background: Non-targeted epidural blood patching (NTEBP) is a widely accepted approach in the initial treatment of spontaneous intracranial hypotension (SIH). Current consensus guidelines recommend administering up to two NTEBPs before considering targeted interventions. However, there is limited evidence to support this approach, and risks delaying the initiation of time-critical and efficacious targeted treatments.
Objectives: To evaluate the treatment outcomes associated with up to two initial NTEBPs in the management of SIH.

Methods: Patients with clinicoradiological evidence of SIH, treated with >1 NTEBPs, and available pre - and post-intervention clinicoradiological data after the last of up to two initial NTEBPs were included. Data was analysed by a specialist SIH multidisciplinary team to assess treatment response. A complete treatment response was defined as achieving both clinical and radiological resolution.

Results: Seventy-one patients were included; 43 (60.6%) received >2 EBPs. Spinal longitudinal epidural collection was present in 56.3%. Following the last of up to two initial NTEBPs, clinical and radiological resolution was observed in 23.9% and 5.6%, respectively; a complete clinicoradiological resolution was observed in only one patient.

Conclusions: NTEBP has a limited role in the curative management of SIH; early myelography and targeted treatment may help improve outcomes.

Intracranial Hypertension – A clinical pearl in consulting haematology patients

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Background: All-trans retinoic acid (ATRA) combined with aresenic trioxide (ATO) remains the standard of care for treating acute promyelocytic leukaemia (APML). However, in rare cases ATRA can be associated with secondary intracranial hypertension.

Clinical Case: A 26-year-old man presented with five days of progressive headache, fluctuant diplopia and visual blurring following cycle four of ATRA/ATO therapy. Less prominent symptoms including neck stiffness and pulsatile tinnitus were associated with his previous cycles.

Diagnostic Evaluation: Ophthalmoscopy revealed grade 4 bilateral papilloedema, with an otherwise normal neurological examination. CT brain and venogram were normal. Diagnostic lumbar puncture showed an opening pressure of 40cm H2O; normal CSF biochemistry and microscopy, with no detectable leukaemic infiltration by flow cytometry.

Management and Follow-up: Acetazolamide was initiated with rapid improvement in symptoms and the patient tolerated completion of APML therapy with reduced dose ATRA. Acetazolamide was subsequently weaned over 6 weeks following final ATRA exposure with no relapse of symptoms.

Learning Points: ATRA remains an important precipitant for intracranial hypertension. Onset of symptoms can be progressive with multiple exposures of ATRA. A combination of acetazolamide therapy combined with ATRA dose reduction in later cycles, can provide a strategy for tolerable and safe completion of leukaemia treatment.

Perinatal use of corticosteroid containing greater occipital nerve injections for primary headache disorders

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Introduction: Headache disorders in the peri-natal period are challenging to manage, as many treatments carry potential maternal or foetal risks. Greater occipital nerve (GON) injections offer an alternative, although there is variable practice in injectate constituents, and limited evidence supporting safety.

Methods: A service evaluation (2016–2025) of adults aged ≥18 years who received GON injections in headache clinics at King's College and Guy's Hospital London, during the peri-natal period was performed. Clinical data on effectiveness and pregnancy outcomes were collected through record review. Outcomes were compared with an age-matched control cohort using a two-tailed Fisher's Exact Test (IBM SPSS Statistical Software; v 29) evaluated at $P < 0.05$.

Results: Females (n=63) received 89 GON injections, of which 81 contained methylprednisolone (80 mg), whilst trying to conceive (n=22), during the first (n=9), second (n=31), and third trimesters (n=13), and whilst breastfeeding (n=14). Baseline characteristics did not differ between the intervention and control cohorts.

Compared with age-matched controls, there were no significant differences in pregnancy, foetal, or developmental complications ($X2 = 0.96$, $P = 0.33$).

Conclusions: Mixed-constituent GON injections were not associated with increased peri-natal complications compared with controls. Ongoing data collection will further strengthen support for safety in this population.

Unusual Headache Case Reports: On the potential aetiologies of Hypnogogic and Shower Headaches

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Headaches account for approximately 4% of all GP and emergency consultations, with a total annual spend of £250 million in the NHS. There is a wide variety of headache presentations many of which lack definitive pathophysiological mechanisms due to their rarity.

This case series describes two unique headache phenotypes, including a hypnogogic nummular headache and a shower-induced headache, contextualised by a focused literature review of similar characterised headaches. Detailed clinical histories were collected, CT and MRI neuroimaging were performed, and lumbar puncture was indicated in one case.

Both patients had minimal co-morbidities, lab and neuroimaging investigations were unremarkable, and no significant secondary cause for headache was elicited. The hypnogogic headache remitted with alcohol abstinence, and the shower headache demonstrated a partial response to amitriptyline, NSAIDs, and simple analgesia.

On evaluating proposed aetiologies for these cases, there are elements of overlap with hypnic, nummular, bath-related thunderclap headaches, and trigeminal cephalgias. We conclude these cases suggest common pathophysiological mechanisms between these headache phenotypes, including involvement of the central sleep-wake and pain modulatory circuitry as well as aberrant sympathetic activation. However, further case reports and mechanistic studies are required to better characterise these rare and debilitating conditions.

Intracranial Hypertension Likely Secondary to Testosterone Intake in a Patient Undergoing Female-to-Male Transition

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Idiopathic intracranial hypertension (IIH) is characterised by raised intracranial pressure (ICP) of unknown cause. Secondary Intracranial hypertension refers to increased intracranial pressure due to an identifiable underlying cause, i.e., medications, tumours, venous thrombosis, endocrine disorders, etc. Although rare, exogenous testosterone has also been implicated in the development of intracranial hypertension.

We present a case of a patient in their late 40s with a normal BMI undergoing female-to-male transition on testosterone supplements. He presented with three month history of visual blurring & headache associated with nausea and vomiting following referral from the Ophthalmology team, where bilateral Frisén grade 4 papilledema and reduced visual acuity were noted. Investigations ruled out possible secondary causes of hypertension include normal CT head and CTV, autoimmune profile, hormone tests and ACE levels. Lumbar puncture revealed a pressure of 27 cmH20 with normal CSF studies. He reported improvement in vision and overall symptoms following the lumbar puncture. Follow-up ophthalmologic assessment showed improvement in disc oedema. After ruling out all the secondary causes, testosterone supplementation was deemed to be the cause of raised ICP.

This case highlights the importance of considering exogenous testosterone as a cause of secondary Intracranial hypertension in patients undergoing gender transition.

Secondary Headaches Due to Dural Arteriovenous Fistulas: A Mimic of Cluster Headache

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Background: Cluster headache is a primary trigeminal autonomic cephalgia characterized by severe unilateral pain with ipsilateral cranial autonomic symptoms. Rarely, secondary structural lesions such as dural arteriovenous fistulas (DAVFs) can mimic cluster-like symptoms.

Clinical case: A 52-year-old man, with prior intravenous drug use involving heroin and cocaine, chronic hepatitis B and C, and active tobacco use presented with severe, episodic, right-sided retro-orbital throbbing headache, rated 9/10 in intensity and lasting 20–30 minutes. Episodes were associated with ipsilateral conjunctival injection, tearing and restlessness. They occurred daily at 2pm and often woke him from sleep. He denied any focal neurological symptoms or cognitive deficits. Headaches fulfilled ICHD-3 beta criteria for episodic cluster headache (1). Zolmitriptan provided partial relief, but verapamil prophylaxis was poorly tolerated. Given his age at onset, substance use history and poor treatment response, a brain MRI with time-of-flight MR angiography was performed, revealing a collection of abnormal vessels in the posterior left temporal lobe consistent with a dural arteriovenous fistula with cortical venous drainage.

Conclusion: This case emphasizes that cluster-like headaches may rarely reflect a dural arteriovenous fistula, highlighting the importance of considering secondary causes and early neuroimaging in atypical features or treatment-resistant cases.

Identifying microRNA markers in idiopathic intracranial hypertension: a pilot study

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Idiopathic intracranial hypertension (IIH) is characterized by raised intracranial pressure (ICP) and predominantly affects women with obesity. It can cause disabling headaches and permanent visual loss. Diagnosis relies on invasive lumbar puncture and misdiagnosis is common. This pilot study aimed to identify serum microRNA (miRNA) markers associated with active IIH and assess their relevance in cerebrospinal fluid (CSF).

Serum and CSF samples were analyzed from adult women enrolled in the IIH Weight Trial, collected during active disease and remission. Participants without papilledema were excluded. Forty candidate miRNAs were assessed. Comparator groups included participants with obesity or migraine. Associations with clinical disease activity were examined.

Five serum miRNAs showed significantly lower expression in active IIH. Serum hsa-miR-16-5p showed the highest diagnostic performance (AUC 0.951) and differentiated active IIH from remission ($p<0.001$), obesity ($p<0.001$), and migraine ($p<0.001$). Hsa-miR-16-5p also differentiated active IIH from remission in CSF ($p=0.035$). Serum and CSF hsa-miR-16-5p correlated with ICP (serum $p<0.001$; CSF $p=0.046$) and papilledema (serum $p=0.035$; CSF $p=0.024$). Associations were observed with metabolites involved in fatty acid metabolism.

Serum hsa-miR-16-5p emerged as a candidate biomarker for active IIH. These preliminary findings warrant validation in larger studies to assess its utility for minimally invasive diagnosis and monitoring.

Trigeminal Neuralgia as the Sentinel Presentation of Chiari I–Related Syringomyelia in an Adolescent

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We report a presentation of trigeminal neuralgia as the index manifestation of syringomyelia secondary to Chiari I malformation in a 17-year-old female. She presented with paroxysmal right facial pain fulfilling diagnostic criteria for classical trigeminal neuralgia, preceded by suboccipital pain consistent with occipital neuralgia. Her medical history included migraine without aura and irritable bowel syndrome. Neurological examination was unremarkable.

Brain magnetic resonance imaging (MRI), including dedicated trigeminal nerve sequences, demonstrated minimal vascular contact at the root entry zone, insufficient to account for symptom severity. Incidental signal abnormality in the upper cervical cord prompted further investigation. Spinal MRI revealed an extensive syrinx extending from C1 to T7 with medullary involvement, cerebellar tonsillar descent exceeding 8 mm, and cerebrospinal fluid obstruction at the foramen magnum, consistent with Chiari I malformation.

Given the extent of syringomyelia and brainstem involvement, multidisciplinary consensus supported neurosurgical intervention. The patient underwent foramen magnum decompression, with complete resolution of facial pain and improvement in cervico-occipital symptoms. Sensory symptoms later recurred, although facial pain remained controlled; interval imaging was arranged to guide management.

This case emphasises trigeminal neuralgia as an uncommon but important presenting feature of Chiari-associated syringomyelia and supports neuraxial imaging in young patients with atypical cranial neuropathies.

Evaluating the prevalence and characteristics of orthostatic headaches in postural tachycardia syndrome

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Background: Postural tachycardia syndrome (PoTS) is considered a differential diagnosis for orthostatic headache (OH), but prospective data is lacking. It also remains unclear whether OH related to PoTS can be clinically distinguished from that due to spontaneous intracranial hypotension (SIH).

Objectives: To prospectively assess the frequency of OH in PoTS and characterise its clinical characteristics.

Methods: One-hundred consecutive PoTS patients were recruited from a tertiary autonomics service. Participants completed a structured interview assessing all headache types, including OH. OH was classified as isolated or as a component of a primary headache disorder. When present, OH characteristics were systematically phenotyped.

Results: Isolated OH was identified in 20% of patients; onset was episodic in 52.6% and typically coincided with PoTS onset or exacerbation. Consistent triggering by change in vertical position occurred in 5%. All patients had a co-existing primary headache disorder, most commonly migraine (88%). An orthostatic component within primary headache attacks was reported by 49%, and was consistently present in 12.2%. Headache onset and offset with postural change were often rapid and resembled features classically described in SIH.

Conclusions: By reporting the frequency and phenotype of OH in PoTS, this study will aid clinicians make informed-decisions when managing patients with OH.