Poster Tour:
Infection/Encephalitis/Functional

May 7, 12:30 - 13:30

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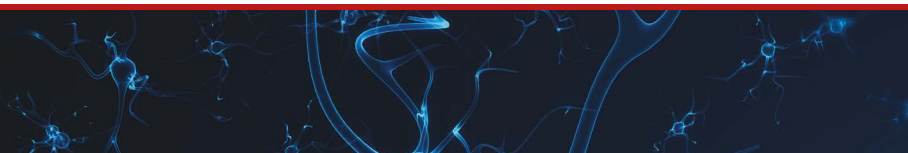

Extensive Spinal Subdural Collections in MSSA Meningitis: An Uncommon Cause of Acute Paraparesis

Yen Wen Phong, Omua Esezoobo, Mark Maskery, Christopher Murphy

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A 55-year-old woman presented with fever, encephalopathy, and rapidly progressive lower limb weakness following a week of worsening back pain. She had no significant comorbidities aside from a remote traumatic brain injury and was previously independent.

On admission she was febrile (38.6°C), hypotensive, and tachycardic with a reduced GCS (E2V2M5). Neurological examination revealed prominent neck stiffness, brisk upper limb reflexes, flaccid areflexic paraparesis, with a T4 sensory level to pinprick and vibration.

Initial investigations revealed mild acute kidney injury, WBC 9.8 and CRP 475. She was admitted to critical care and treated empirically for meningoencephalitis. CT brain was unremarkable. Lumbar puncture revealed turbid CSF with WBC 16, protein >25g/L and glucose 0.5mmol/L. Blood and CSF cultures grew MSSA, and her antibiotics were changed to flucloxacillin and linezolid after microbiology advice.

Spinal MRI demonstrated extensive loculated spinal subdural collections from C2-T5 with associated myelitis and florid leptomeningeal enhancement involving the entire cord, conus, and cauda equina. Surgical drainage was not feasible, and no primary source of MSSA was identified.

This case highlights spinal subdural collections as a rare complication of MSSA meningitis and emphasises the importance of early spinal imaging in patients presenting with meningitis, back pain, and evolving lower-limb deficits.

Diagnostic accuracy and management of encephalitis in a secondary care setting – a local audit

Jafor Sadeque, Hassan shah, Nahida tasnim

Dartford and Gravaesham NHS Trust

Encephalitis is a rare and life-threatening condition associated with high mortality and morbidity if not diagnosed and treated promptly. The management of encephalitis is often challenging due to the wide range of presentations and various infectious, post-infectious, and other immune-mediated aetiologies. We conducted an audit at Darent Valley Hospital to evaluate the management of patients with suspected and confirmed encephalitis based on standards set out in national and European guidelines. We compared our local performance to the reported literature of tertiary centre experiences.

We reviewed the clinical notes of 34 patients with suspected encephalitis admitted during 2023-2024, of which 12 had a confirmed or probable infectious encephalitis, 7 had immune-mediated encephalitis, and the remaining were mimics incl. meningitis, stroke or systemic infection.

Major diagnostic shortcomings included delayed access to lumbar punctures with only 15% occurring within the first 24 hours, and a significant proportion of patients having no LP at all; as well as difficulties in accessing appropriate and timely antibody testing for suspected immune-mediated encephalitis.

Good performance was achieved in timely initiation of antimicrobial therapy and duration.

We will present planned service changes to aid improved diagnostic pathway facilitating more timely access to accurate investigations.

Diagnostic Convergence: Alpha-Enolase and Anti-TPO Antibodies in Autoimmune Encephalopathy

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Background: Identifying non-traditional markers is crucial in suspected autoimmune encephalopathy (AE) when standard cell-surface antibody panels are negative. We report a case of refractory focal status epilepticus where the dual positivity of anti-TPO and alpha-enolase antibodies was found diagnostic in an otherwise euthyroid patient.

Case Presentation: A gentleman in his early 60s presented with acute cognitive decline and refractory focal status epilepticus, with semiology of epilepsia partialis continua (EPC), including speech arrest and rhythmic leg contractions. Although CSF protein was elevated (1 g/L), standard AE panels were negative. Anti-TPO was found to be raised despite normal thyroid function (TSH 1.4 mU/L). Malignancy screening, including FDG-PET and prior colonoscopy, was unremarkable.

Subsequent testing confirmed positive for alpha-enolase antibodies. The patient was clinically responsive to immunosuppression with pulsed steroids and IV immunoglobulins; his ACE score improved from 73 to 99/100. He remains stable on maintenance mycophenolate mofetil.

Discussion: Although classically associated with autoimmune retinopathy, alpha-enolase antibodies may represent a diagnostic surrogate for CNS-specific metabolic stress. This serological signature reflects immune-mediated glycolytic disruption independent of thyroid dysfunction.

Conclusion: In panel-negative encephalopathy, extended antibody testing including alpha-enolase is valuable. Early identification supports targeted immunotherapy, avoiding cryptogenic diagnoses, preventing cognitive decline, and achieving seizure control.

Unmasking Late-Onset Rasmussen's Encephalitis

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Rasmussen's encephalitis (RE) is a rare, immune-mediated neurological disorder that characteristically presents in childhood, though adult-onset cases are infrequently described. We discuss the case of a 61-year-old gentleman, with a background of alcohol-related seizures and liver cirrhosis, who presented with right upper limb weakness, expressive dysphasia, and new-onset confusion.

Initial computed tomography excluded acute intracranial pathology. However, when compared to prior studies, magnetic resonance imaging (MRI) demonstrated progressive left hemispheric atrophy, with T2- and diffusion-weighted signal changes in parietal and temporal grey matter. Frequent focal epileptiform discharges were evident on electroencephalography (EEG) overlying the left temporal lobe. Cerebrospinal fluid analysis, neuronal antibody testing, and systemic imaging returned unremarkable. Escalating anti-seizure medication, combined with high-dose corticosteroids and a short course of intravenous immunoglobulin, led to clinical improvement.

Post-treatment EEG identified no further epileptiform activity, and serial MRI showed resolution of cortical signal changes. Following multidisciplinary team discussion, a clinico-radiological diagnosis of late-onset RE was established. Long-term immunosuppression, alongside ongoing rehabilitation, achieved further functional recovery, with only mild dysphasia remaining. Adult-onset RE, though rare, should be considered in patients presenting with progressive, unilateral cerebral atrophy. Early multidisciplinary input and timely initiation of immunotherapy can facilitate meaningful recovery, even in atypical adult presentations.

Functional Neurological Disorder (FND) in Primary Care: Survey of General Practitioners' Knowledge, Attitudes and Practices

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Background: Functional neurological disorder (FND) is a complex condition presenting an increasing burden in general practice. Its inclusion in NICE guideline NG252 and NHS England minimum service requirements emphasises the need for improved primary care recognition and management.

Aim: To explore knowledge, attitudes, and practice relating to FND among primary care clinicians.

Design and setting: Cross-sectional survey of 34 primary care clinicians across Lancashire and South Cumbria.

Method: A 16-item online survey was disseminated via the integrated care board network. Descriptive statistics and Spearman's rank-order evaluated associations between training and confidence, with thematic analysis of free-text data.

Results: Although most respondents could identify FND, only 8.8% felt confident recognising it in primary care, and the same proportion felt adequately trained. Perceived adequacy of training strongly correlated with confidence in recognising (ρ=0.559) and explaining (ρ=0.547) FND. Most clinicians acknowledged increasing FND presentations, with including uncertainty and limited access to multidisciplinary support cited as key challenges. Two-thirds supported dedicated FND services; over half expressed willingness to undertake further training.

Conclusion: Primary care clinicians report insufficient training and confidence in managing FND, despite increasing clinical exposure. Targeted education and service development are required to align practice with national guidelines and improve patient outcomes.

Functional/Dissociative Seizures (FDS) in Wales, a retrospective study using routinely collected data

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Method: We performed a retrospective study using linked, anonymised health and census data from the Secure Anonymised Information Linkage databank. We identified incident FDS and/or epilepsy cases in Wales (2003–2023), using routinely-collected diagnosis codes, and age, deprivation, and sex-matched comparators. We validated case ascertainment using 877 definite/probable FDS cases, and 4611 individuals without FDS.

Results: We identified 2808 FDS cases (algorithm sensitivity=47.7%, specificity=99.8%). 74.5% were female, 30% had epilepsy. FDS incidence increased from 2.9/100,000 (99%CI=2.2–3.9) in 2012 to 9.4/100,000 in 2023 (99%CI=8.0–11.0). FDS prevalence is >0.1%.

Individuals with FDS had: increased mortality risk compared to comparators (HR=1.7 (95%CI=1.48–2.00); increased emergency department attendance (1.43 visits/person/year in 2023 [99%CI=1.37–1.48], versus 0.77 [99%CI=0.75–0.78] for epilepsy cases, 2.03 [99%CI=1.93–2.14] for epilepsy and FDS, and 0.34 [99%CI=0.33–0.35] for comparators); higher rates of common mental health disorders (80% versus 49% [epilepsy cases] and 45% [comparators]); lower rates of currently working (28% versus 26% [epilepsy cases] and 57% [comparators]) and higher rates of long-term sickness (35% versus 23% [epilepsy cases] and 7% [comparators]).

Significance: FDS incidence in Wales is increasing. People with FDS have significantly higher rates of healthcare utilisation, psychiatric comorbidity and mortality when compared to matched comparators.

Altered postural control in PPPD: evidence for maladaptive mechanisms from motion capture posturography

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Persistent Postural–Perceptual Dizziness (PPPD) is a common and debilitating functional neurological disorder defined by diagnostic criteria with core vestibular symptoms and specific provoking factors. Studies of predecessor syndromes have demonstrated altered postural control using force plate posturography. Using motion-capture posturography, this study investigated maladaptive postural control in PPPD and the relationship with dizziness symptoms.

Twenty-two individuals with PPPD and age-matched healthy controls completed posturography under different stance (Romberg, tandem) and visual (eyes open/closed) conditions. Head kinematic time-series data were used to derive postural sway metrics, including path length, root mean square acceleration, and sway area. Dizziness symptom characteristics were assessed using self-report questionnaires.

Patients exhibited greater postural sway than controls, with increasing sway under more demanding balance conditions, except during the most challenging tandem eyes-closed condition, potentially reflecting maladaptive postural stiffening. Sway area analysis revealed a significant Group*Stance*Visual Input interaction, indicating group-dependent modulation of postural control. Strong correlations between sway area and self-reported dizziness severity were observed in Romberg stance conditions.

These findings provide evidence for altered postural control in PPPD consistent with maladaptive stiffening strategies. Future work will integrate postural and visual-vestibular perceptual measures, and evaluate motion-capture posturography as an outcome measure for VR-based rehabilitation.

Objective measurement of Hoover's sign in healthy controls and patients with functional neurological disorder

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Background: Hoover's sign, first described in 1908, is characterised by transient improvement of weakness in hip extension by flexion of the contralateral hip against resistance. Here, 'voluntary' extension improves through 'involuntary' activation. Such 'positive signs' are central to diagnostic specificity and can be used therapeutically aiding patient understanding in functional neurological disorder (FND). Despite its clinical relevance, few attempts have been made at quantitative measurement of the sign.

Methods: We have developed an apparatus utilising digital force gauges for objective measurement of Hoover's sign and have begun testing in healthy controls (n=20) and in patients with unilateral functional leg weakness (n=20). Our novel protocol investigates the accuracy and reliability of a blinded neurologist using MRC rated power compared to our apparatus and a handheld force gauge.

Discussion: Validated objective measurements of functional signs could aid in earlier diagnosis, serve as novel outcome measures in clinical trials and separate out functional components to a presentation. We aim to replicate previous findings of an increased ratio of involuntary to voluntary power in patients with functional weakness compared to controls and determine the relationship of quantitative measures to physician examination. Further work will compare to neurological control groups.

Migraine prevalence and management in functional neurological disorder: a retrospective audit

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Migraine commonly co-occurs with functional neurological disorder (FND), but distribution across FND phenotypes remains poorly characterized and migraine may be overlooked. Migraine is recognized as a trigger for functional symptoms, suggesting a modifiable target, but literature on gaps in migraine management in FND is limited.

A retrospective audit reviewed 192 patients with clinician-coded FND phenotypes from inpatient referrals, general neurology and a tertiary FND clinic. Age was grouped as ≤55 and >55 years. Variables included prior migraine history, recent/active migraine (<3 months), chronic, aura, and vestibular migraine (ICHD-3 criteria). Indicators of potentially inadequate acute and prophylactic therapy were recorded.

Mean age was 40.0 years; 85% were ≤55 and 82% female. Commonest phenotypes were abnormal movement (35%), mixed (23%) and weakness (20%). Prior migraine was present in 61% overall, highest in mixed (77%) and weakness (66%), seizure-only (n=9, 56%) and seizures with weakness (n=10, 53%), and lowest in special sensory phenotypes (0/4). Recent/active migraine occurred in 54% and chronic migraine in 13%. Potential gaps in evidence-based acute and preventive therapy were identified in 37% and 27%.

Migraine is highly prevalent in FND and clusters in mixed and weakness phenotypes. Structured screening and optimization of treatment are practical targets within FND pathways.

A technique for inducing hoovers sign in healthy controls: mechanistic insights into functional neurological symptoms

Benjamin Sacks[1], Andrew Whitfield[2], Timothy R Nicholson, Jan Coebergh

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Background: Hoover's sign describes an improvement in hip extension weakness during flexion of the contralateral hip against resistance. This dissociation between voluntary and involuntary motor output is a key diagnostic feature of functional neurological disorder (FND), but can also be found in apraxia, chronic fatigue and pain.

Methods: We have identified a technique that induces a transiently positive Hoover's sign in healthy people. Application of a vibrating 128Hz tuning fork to the patella for 10 seconds induces a transient reduction in voluntary hip extension which normalizes with flexion of the contralateral hip. The induced Hoover's sign resolves spontaneously after 30-45 seconds in healthy control. The weakness is less pronounced if the subject moves (or even imagines moving) the contralateral side during induction. We have designed an experiment to quantify the effects of this technique in healthy controls (n=20) and FND patients (n=20) using a novel force gauge apparatus.

Discussion: FND has been proposed to reflect abnormalities of predictive processing, sensory attenuation and proprioceptive integration, leading to an altered sense of agency. Vibratory stimuli distort proprioception disproportionately in FND. By coupling proprioceptive perturbation with altered voluntary motor output, this paradigm offers mechanistic insights into the development of FND.