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Tremor as a Probable Adverse Drug Reaction to Levetiracetam: A Case Report

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Tremor as a Probable Adverse Drug Reaction to Levetiracetam: A Case Report

*Names in bold type indicate presenting author.

SANDO Syndrome Associated with New POLG Heterozygous Gene Mutation: Case Report

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Mentor: Sachin Kedar, Danish Bhatti

Program: Neurological Sciences

Type: Case Report

Background: Nuclear-encoded POLG gene encodes gamma subunit of the mitochondrial DNA polymerase that is responsible for replication of the mitochondrial DNA (mtDNA). Mutations of POLG gene can have multiple phenotypes including SANDO syndrome, first described in 1997. At the molecular level, A467T and W748S POLG mutations have been described in SANDO. The objective of this case report was to describe novel mutation of the DNA polymerase subunit gamma (POLG) gene with a phenotypic presentation of Sensory Ataxic Neuropathy, Dysarthria and Ophthalmoparesis Syndrome (SANDO).

Case: A 69-year-old female presented with two years of ophthalmoplegia, ataxia, falls, hoarseness and dysphagia. Her mother suffered from ataxia and falls. Exam showed multifocal dystonia, truncal ataxia with postural instability, appendicular ataxia, diffuse hyperreflexia, abnormal Hoffman, Babinski signs and frontal release signs. She had minimal rigidity and bradykinesia without tremors. Neuro-ophthalmological exam showed absence of both vertical and horizontal eye movements bilaterally, esotropia and right hypertropia and weak orbicularis oculi and oris weakness bilaterally. She had abnormalities of alternate trail marking, figure copying, and clock drawing indicating visuospatial and executive dysfunction. Workup including CSF, blood work and MRI Brain were unremarkable. Growth differentiation factor 15 levels were elevated suggesting a mitochondrial cytopathy. Genetic evaluation revealed single nucleotide heterozygous gene mutation of the POLG gene (c.3614G>C p.Gly1205Ala). This mutation has previously not been associated with pathology and hence felt to be of uncertain significance.

Conclusion: We report the phenotypic presentation of SANDO syndrome with a gene mutation previously classified as uncertain significance. Due to the clinical heterogeneity, overlapping phenotypes, diagnosis of mitochondrial diseases relies on the molecular detection of genetic mutations. ■

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Raw Onions or a Raw Deal? The Straightforward Admission that Wasn't

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Mentor: Allison Ashford

Program: Internal Medicine - Pediatrics

Type: Case Report

Case: An 11-year-old boy with a history of food allergies, moderate persistent asthma, and eczema was admitted after an allergic reaction. Earlier that day the patient had consumed lunch, including a chili dog with raw onions. The patient's father stated that the patient shouldn't have eaten raw onions as, "he is allergic to just about every raw food." After consuming lunch, the patient began "drooling" and became "uncomfortable." The patient was taken to the emergency department where he received epinephrine, methylprednisolone, and diphenhydramine. He was then admitted for observation.

The patient described a "pain" in his anterior neck. His exam was reassuring including bilateral clear lung fields. He was given a bottle of sports drink and after consuming 2 ounces the patient had two small episodes of emesis which resembled the sports drink.

At that time there became a concern that food impaction was responsible for the patient's symptoms rather than an allergic reaction. An esophagram was ordered which revealed a retained food bolus within the distal esophagus with only a trace amount of contrast passing distally into the stomach. On endoscopy, there were signs of inflammation and biopsies revealed 45 eosinophils per high powered field. The patient was subsequently diagnosed with Eosinophilic Esophagitis. Patient consent was obtained to use this case for educational purposes.

Conclusion: This case highlights the necessity to maintain a broad differential diagnosis as it is easy to become swayed by other provider's assessments. It is also important to remember that food impaction can be the presenting symptom in Eosinophil Esophagitis, especially in a patient with atopy. ■

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Tremor as a Probable Adverse Drug Reaction to Levetiracetam: A Case Report

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Mentor: Aditya Vuppala

Program: Neurological Sciences

Type: Case Report

Background: Levetiracetam (LEV) is used for treatment of epilepsy and movement disorders. Its common adverse drug reactions (ADRs) are neuropsychiatric symptoms and drowsiness. We report a case of LEV-associated head and hand tremors.

Case: A sixty-seven-year-old right-handed woman presented for seizure evaluation. She had febrile seizures as a child and was seizure-free until the age of twenty-eight when she had convulsive seizures, staring spells and auras for which phenytoin and primidone were started. She was event-free until the age of sixty-six when she started having frequent auras. LEV was started and titrated to the maximum recommended dose. She reported head and hand tremors after LEV initiation and denied prior tremor history. Her tremors improved but persisted after lowering the LEV dose.

She underwent continuous video-electroencephalogram (EEG) monitoring

in the hospital with no EEG-correlate for the tremors. At discharge, LEV was resumed, and primidone was decreased. She presented to the emergency room later with multisystem symptoms and worsening of tremor. Primidone was resumed at the original dose for suspected primidone withdrawal. Her tremors persisted despite resuming primidone and adding propranolol. Tremors were attributed to LEV given the temporal relationship with its initiation and dose-dependent worsening. The tremors resolved after stopping LEV. Patient stayed tremor-free on follow-up.

Conclusion: The temporal association of new-onset head and hand tremors with LEV initiation, dose-dependent worsening, and resolution with LEV discontinuation suggests that tremor is likely LEV-associated ADR (Naranjo score 7). Though rare, recognizing this ADR is important to allow for appropriate management by LEV cessation. ■

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Coexistence of Focal and Idiopathic Generalized Epilepsy: A Case Report

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Mentor: Arun Swaminathan

Program: Neurological Sciences

Type: Case Report

Background: The presence of coexisting focal and idiopathic generalized epilepsy (IGE) is rare, and its etiopathogenesis unknown. We report a case of well-controlled IGE and medically-refractory temporal lobe epilepsy.

Case: A 26-year-old woman presented to the University of Nebraska Medical Center Epilepsy Clinic for evaluation of seizures. Her spells started at the age of 18 when she had an event of confusion and loss of orientation. Thereafter, she had episodes of metallic taste without seizures until the age of 26 when she had a generalized seizure preceded by an aura of abnormal taste. She was diagnosed with focal seizures based on semiology and empiric oxcarbazepine (OXC) started. Her seizure frequency worsened with OXC. Later, electroencephalogram (EEG) showed interictal generalized spike-and-wave (GSW) complexes and left frontotemporal epileptiform discharges. Brain magnetic resonance imaging was normal. Based on the EEG, OXC was switched to levetiracetam (LEV). On follow-up visit, she mentioned having myoclonic-like jerks as a teenager. She continued to have seizures on LEV, for which topiramate and clobazam were added without much benefit.

She underwent continuous video-EEG monitoring in the Epilepsy Monitoring Unit and had four left temporal onset clinical seizures. Interictal EEG showed left frontotemporal and GSW epileptiform discharges. Pre-surgical evaluation for medically-refractory left temporal epilepsy was initiated.

Conclusion: This case highlights the importance of using anti-epileptic medications with broad spectrum in patients with coexisting focal epilepsy and IGE as medications like oxcarbazepine can worsen IGE. It also emphasizes the importance of considering surgery for treatment of medically-refractory focal epilepsy even with coexisting IGE. ■

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Atypical Lateral Knee Injury

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Mentor: Jason Meredith

Program: Family Medicine

Type: Case Report

Background: Tibial plateau fractures are extremely rare, accounting for only 1% of all fractures and often not seen on initial plain films. They frequently occur in the context of direct high-energy trauma and often go undiagnosed leading to delayed healing and return to activity.

Case: A 17 y/o HS football player presented to clinic after hyperextending his knee the night before during his game. Injury occurred while landing from deflecting a pass. He was unable to finish the game secondary to pain/instability sensation. On presentation, his symptoms were worsening leading to difficulty ambulating. Exam was remarkable for moderate effusion and tenderness to palpation over the lateral joint line. Range of motion was within normal limits. Special tests were notable for subtle laxity on varus testing at 30 degrees with firm endpoint at 0 degrees and positive McMurray for lateral meniscus pathology. Plain films were negative for an acute fracture; however, MRI showed a non-displaced fracture of the right lateral tibial plateau without other internal derangements of the knee. Patient was made NWB and placed in hinged knee brace locked in full extension for 3 weeks and then progressive ROM as typical for tibial plateau fracture management. After 12 weeks of treatment, he was able to return to sporting activities.

Conclusion: Tibial plateau fractures are often associated with soft tissue injuries; specifically, lateral plateau fractures are associated with MCL tears and medial plateau fractures with LCL tears. This case represents an incredibly rare presentation of a non-traumatic tibial plateau fracture without associated knee pathology. ■

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