

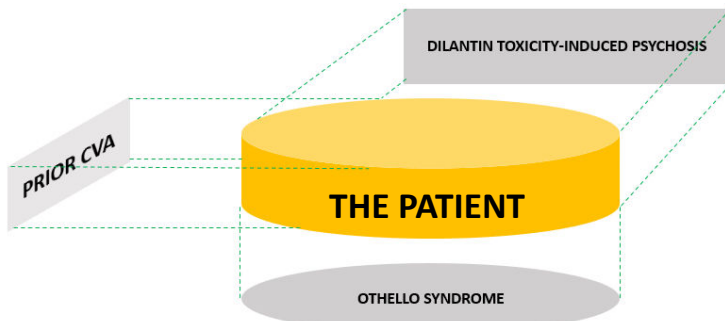
Chicken or the Egg: Phenytoin Toxicity-Induced Othello Syndrome in the Setting of Right Prefrontal Insult

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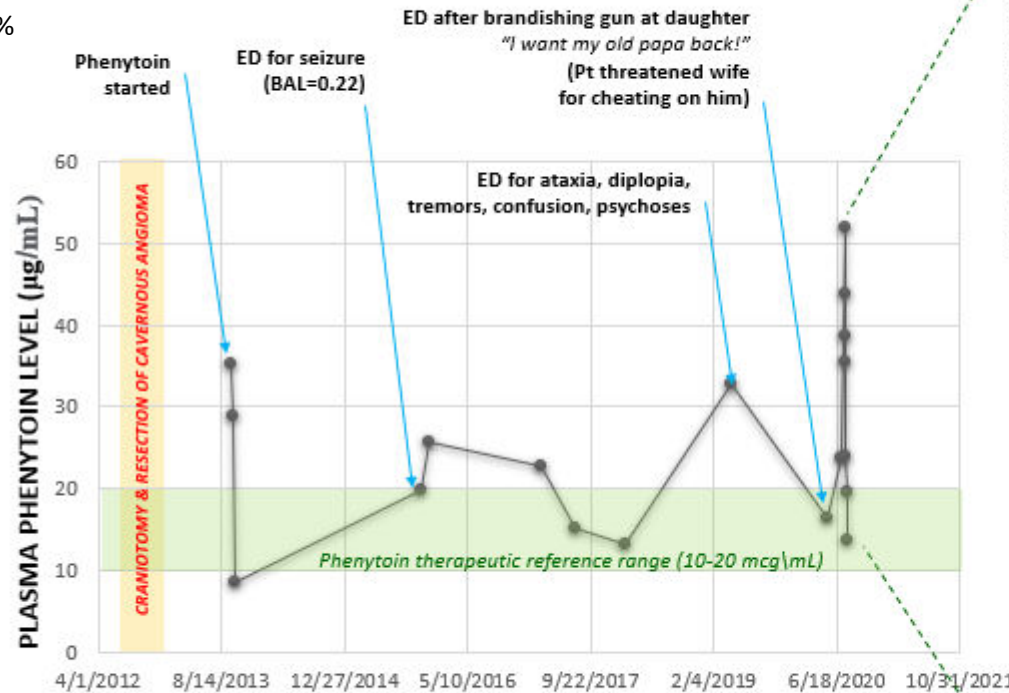
BACKGROUND: Othello syndrome, aka delusional jealousy, is named after Shakespeare's Othello, who murders his wife due to his false belief she was unfaithful¹. Delusional jealousy is a relatively rare psychiatric disorder with a prevalence rate of 1.1% amongst psychiatric inpatients².

- **Diagnostic challenge:** the diagnostic criteria for delusional disorder, jealous subtype (DSM-5 297.1, F22) stipulates symptoms are not better explained by another medical condition³. Delineating primary and secondary causes can be challenging, especially when psychiatric and neurologic vulnerabilities are overlapping and interactive⁴.
- **Case overview:** Here we describe a unique presentation of delusional disorder, jealous subtype, exacerbated by Phenytoin toxicity in the context of pre-existing CNS insult.



SIGNIFICANCE: This patients' presentation is compatible with interacting psychiatric and neurologic risk factors (see above figure). We propose a "two-hit" model of clinical decompensation (see right figures), in which delusional disorder, jealous subtype was facilitated by the interaction between his prior neurologic vulnerabilities (**first hit**) and acute Phenytoin toxicity (**second hit**).

CLINICAL CORRELATIONS WITH PLASMA PHENYTOIN LEVELS



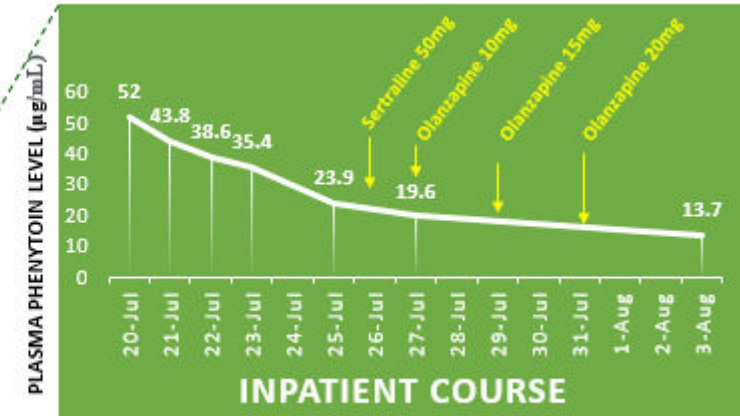
1st HIT

R post. mesotemporal lobe,
R frontal parasagittal region,
R mesial frontal lobe

Decline in memory,
neurocognitive &
executive function

2nd HIT(S)

Acute-on-chronic
Dilantin toxicity from
unintentional overdose



- July 20th:** "I want to jump out of a window...we're getting a divorce"
"I did not intentionally overdose...I forgot dosages!"
(ataxia, diplopia, nystagmus, tremors)
- July 21st:** "She is cheating with a man hidden in the walls"
(tearful, tangential, disorganized)
- July 27th:** "I'm not so certain she's cheating on me"
(guarded, paranoid, concrete, hyperverbal)
- July 28th:** "There's no man living in the walls...it's Dilantin [overdose]"
(VH, picking exit door, suspicious, irritable, BROSET = 2)
- July 29th:** (accusatory of staff financial motives)
- July 30th:** (verbally disinhibited & inappropriate with female peers, regressive playful & repetitive behaviors)
- August 1st:** "No one can live inside wall...she was just on the phone"
(less distress intolerance in groups)
- August 2nd:** Limit testing wife, but denied infidelity when wife hung up
(circumstantial, less disinhibited, identifies stressors)
- August 3rd:** Persistently denied wife cheating on him, "if she doesn't pick up the phone, she's probably just working 3rd shift."
(logical, compliant, appropriate, irritable)

REFERENCES (QR CODE) →

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