



Non-Epileptic Seizures: A Case Report



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On February 11th, 2017, a 44-year-old woman was rushed to the emergency room, experiencing an attack of primarily **left-sided paralysis** and an **inability to speak**. This attack was described as an unusual moment of **altered consciousness** with no immediate resolution. Our project follows the path of this individual's differential diagnoses, leading to the final diagnosis of **psychogenic non-epileptic seizures** (PNES).

Introduction:

- PNES are categorized as a **paroxysmal conversion disorder**, identified by the onset of **seizure-like episodes**, correlated with the **absence of abnormal cortical discharge**.⁹
- PNES as a condition is not currently well understood and is often misdiagnosed for similar conditions such as epilepsy, which can lead to **delays in patient treatment**.⁶

GOAL: to provide a more detailed and complete understanding of this unusual case.

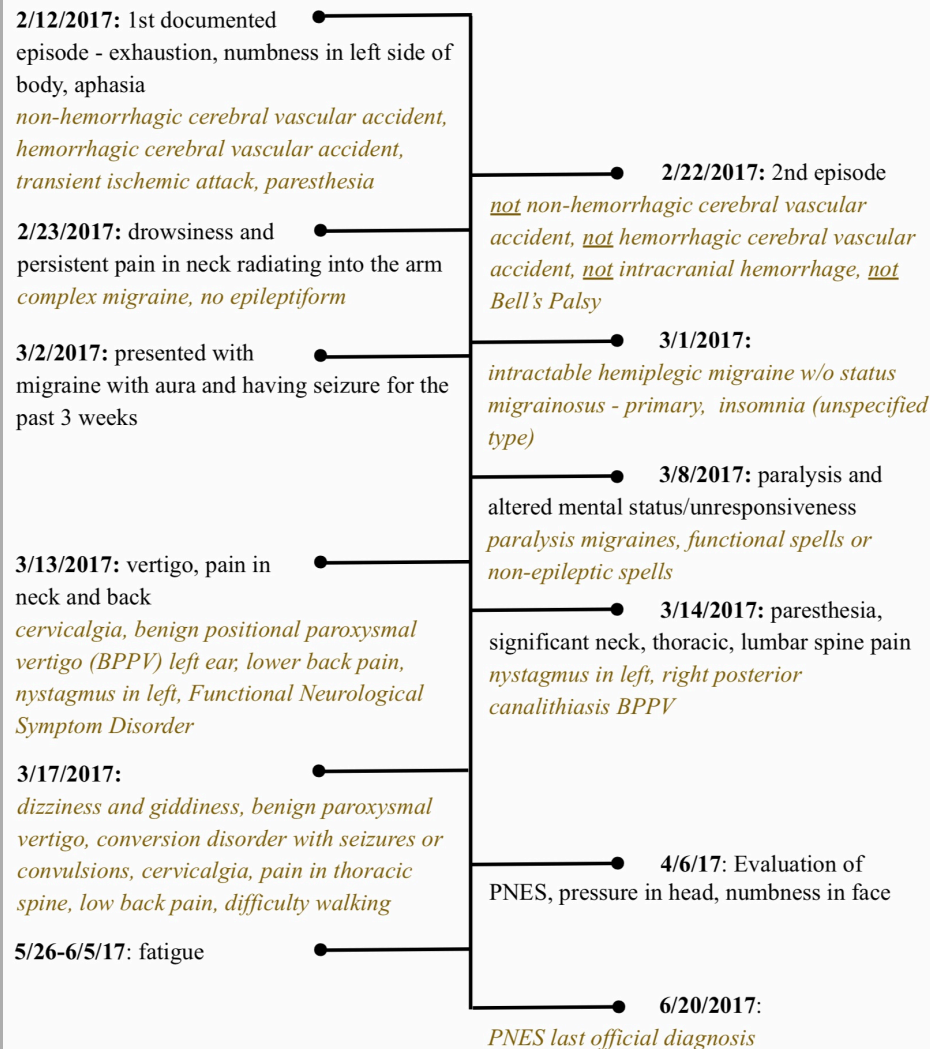
Methods:

- Extensive Literature Review
- Completed CITI training
- Wrote and finalized IRB consent forms
- Consulted with Dr. Adam Kalawi (Medical Resident in Child Neurology)
- Completed and Submitted IRB
- Received IRB approval
- Requested and received letter of consent regarding medical records
- Sent letters of consent to obtain medical records
- Drafted case report

Literature Cited:

1. Arain A, Tammas M, Chaudhary F, Gill S, Younis S, Bangaloo-Vital N, Singh P, Jabreem S, Ali S, Song Y, Azar NI. 2016. Communicating the diagnosis of psychogenic nonepileptic seizures: The patient perspective. *Journal of Clinical Neuroscience*. 28: 67-70. doi: 10.1016/j.jocn.2015.10.030 0967-2688 / 2016
2. Benbadis SR, and Hauser WA. 2000. An Estimate of the Prevalence of Psychogenic Non-Epileptic Seizures. *Seizure*. 9(4): 280-281. doi: 10.1051/epi:20000409.
3. Rodde NMG, Brooks JL, Baker GA, Boon PAM, Hendriksen JCM, Mulder OG, Aldenkamp AP. 2009. Psychogenic Non-Epileptic Seizures – Definition, Etiology, Treatment and Prognostic Issues: A Critical Review. *Seizure*. 18(8): 543-553. doi: 10.1016/j.seizure.2009.06.006.
4. Devinsky O, Gazda D, LaFrance WC. 2011. Differentiating between Nonepileptic and Epileptic Seizures. *Nature Reviews Neurology* 7(4): 210-220. doi: 10.1038/nrn2011.24.
5. Hall-Fatch L, Brown R, House A, Howlett S, Kemp S, Lawton G, Mayor R, Smith F, Reuber M. 2010. Acceptability and effectiveness of a strategy for the communication of the diagnosis of psychogenic nonepileptic seizures. *Epilepsia*. 51(1): 70-78. doi: 10.1111/j.1528-1167.2009.02099.x
6. Kerr WT, Janio EA, Le JM, Hori JM, Patel AB, Gallardo NL, Baatjan J, et al. 2016. Diagnostic Delay in Psychogenic Seizures and the Association with Anti-Seizure Medication Trials. *Seizure*. 40: 123-26. doi: 10.1016/j.seizure.2016.06.015
7. Labadza K, Frazerheim M, Miller I, Schneke M, Brandt C, Bieri CG. 2020. Outcome of CBT-based multimodal psychotherapy in patients with psychogenic nonepileptic seizures: A prospective naturalistic study. *Epilepsy & Behavior*. 106: 107029. doi: 10.1016/j.ybeh.2020.107029
8. LaFrance Jr WC and Devinsky O. 2002. Treatment of nonepileptic seizures. *Epilepsy & Behavior* 3(5): 19-23.
9. Pryor DL and LaFrance WC. 2016. Nonepileptic Seizures: An Updated Review. *CNS Spectrums*. 21(3): 239-46. doi: 10.1017/S109282291600023X
10. Smith BJ. 2014. Closing the Major Gap in PNES Research: Finding a Home for a Borderland Disorder. *Epilepsy Currents*. 14(2): 63-67. doi:10.5698/1535-7597.14.2.63.
11. Solastron CE, and Carmant L. 2015. Seizures and Epilepsy: An Overview for Neuroscientists. *Cold Spring Harbor Perspectives in Medicine*. 5(6). doi: 10.1101/0shperspect.a02426.

Timeline of symptoms and diagnoses.



Results:

Final diagnosis: PNES

Conclusion:

- **Causes:** Presence of an **underlying psychological condition/trauma**.⁸
- **Treatment:** Not standardized due to case-by-case manifestations of symptoms, although presence of an underlying condition aids direction of treatment.^{3,7,10}
- **Statistics:** Estimated **2-33 per 100,000 persons** in the general population, more common but often not identified accurately.²
- **Diagnostic Techniques:** **Exclusion of epileptic seizures** (ES) with an **EEG confirmation** with identification and diagnosis of a **psychological condition/trauma**.¹¹
- **Current Literature Highlights:** The **origins of PNES are not well understood** since PNES does not display a set of universally defined symptoms.⁴ As such, **misdiagnosis** is a key issue causing many cases to be mistaken for ES for years before correct diagnosis.⁶
- **Future Research Direction:** Many studies indicate a **larger sample size** of officially diagnosed PNES patients will yield more reliable data.³ Improvements in **diagnostic communication** is expected to improve individual acceptance of the condition and may play a role in resolving further seizure episodes.^{1,5}

FINAL THOUGHTS: Following analysis of the individual's medical documents, an extensive list of possible conditions was ruled out with a series of unremarkable physical examinations and lab results. Many of those possible conditions present in a similar manner to PNES, but do not align with the lack of abnormal test results. Therefore, in comparison with published PNES literature, we concluded that the detailed journey of **medical examination agrees with this final diagnosis** and with current knowledge about this condition.

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