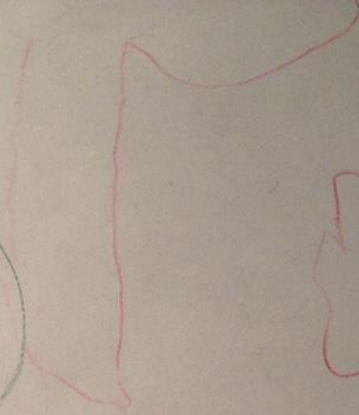


The making of a patient

Misdiagnosis in childneurology

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Pedatric overtreatment:

- Coon et al, 2014: Overdiagnosis: How our compulsion for diagnosis may be harming children, Pediatrics.
- Xu et al, 2016: Frequency of a false positive diagnosis of epilepsy: a systematic review of observational studies. Seizure.

General Key facts:

- Approximately 50 million people worldwide have an epilepsy diagnosis, making it one of the most common neurological diagnoses globally.
- Epilepsy is defined as having 2 or more unprovoked seizures.
- Seizure episodes are a result of excessive electrical discharges in a group of brain cells which may be detected by EEG
- Epilepsy is a clinical diagnosis – EEG is a supplement to confirm the diagnosis

Key facts

- Up to 10% of people worldwide have one seizure during their lifetime.
- Characteristics of seizures vary and depend on where in the brain the disturbance first starts, and how far it spreads.
- Temporary symptoms occur such as loss of awareness or consciousness, and disturbances of movement, sensation (including vision, hearing and taste), mood, or other cognitive functions.

Case-story 1: Male 13 yrs

Information at referral:

- History of two generalized seizures
- EEGx2 and MRi normal
- Treated with Orfiril/Depakote (VPA) 300mgx2 for 6 months
- Mother reported increasing frequency of smal seizures, skin rash and reduced appetite
- New EEG without mediaction suspected generalized pathology provoked after hyperventilation

Case -story

- HIHARS: Hyperventilation-induced high-amplitude rhythmic slow activity with altered awareness (HIHARS) is increasingly being identified in children and is thought to be an age-related non-epileptic electrographic phenomenon.

Epstein et al, 1994: Altered responsiveness during hyperventilation-induced EEG slowing: a non-epileptic phenomenon in normal children. *Epilepsia*

EEG in normal controls:

- 3% of healthy 11- and 12-year-old adolescents with no history of seizure or neurologic disease have incidental rolandic or generalized IEDs. (Eeg-Olofsson et al.(1971), Cavazutti et al.(1980), Grant et al (2016))

Case-story: Male 13 yrs:

- Change of medication to Keppra 500mgx2
- EEG after restart of medication was normal
- BUT: Clinically worsening: more seizures reported (partial seizures and absences – the boy being more unruly – “Keppra-troll”)
- Mother reported increased use of Diazepam – sometimes to “calm him down”

Case story - observations:

- Discrepancy between the mother's and the boy's story
- The mother used epileptological terms to describe the seizures (focal, GTC, absences)
- Mother and father divorced – father had never seen any seizure
- 24h EEGx3 was normal and showed no correlation to seizures described as tingeling in an arm and of tantrums
- The diagnosis of epilepsy was replaced with a diagnosis of PNES (Psychogenic non epileptic seizures)

Social history:

- Parents divorced when the boy was 5 years – the father did not receive information about his son's medical record before we involved him
- The boy had academic difficulties at school
- He was severely bullied for several years
- His mother received social security income
- The Child welfare services were involved

Conclusions:

- EEG is only a supplement in the diagnostic process and can be misinterpreted.
- The caregiver is not always trustworthy – compare information is crucial (school, extended family etc.)
- CNS-medications have side effects that may evoke symptoms which can be interpreted as confirming the diagnosis.

Further discussion:

- Issues of overdiagnosis and overtreatment in children may be linked to caregiver-fabricated illness/factitious disorder by proxy
- Medical child abuse = a child receiving unnecessary and harmful or potentially harmful medical care at the instigation of a caretaker
- Always having in mind: First do no harm