Non-epileptic events

- Non-epileptic events are paroxysmal episodes that resemble and are often misdiagnosed as epileptic seizures.
- Non-epileptic events can be further of two kinds
  - Psychogenic non-epileptic seizures (PNES)
  - Non epileptic but not psychogenic ("physiologic") event
Non-epileptic but not psychogenic (physiologic) events

- Tremors
- Myoclonus which is not cortical (segmental/ spinal)
- Dystonia
- Dyskinesias
- Parasomnias: sleep walking, nocturnal panic attacks, nightmares, sleep terrors
- Syncope
- Complicated migraine
- Transient ischemic attacks
- Cataplexy
- Startle induced phenomena
Psychogenic non-epileptic events

- Multiple terminology: pseudoseizures, nonepileptic seizures, nonepileptic events, and psychogenic non-epileptic seizures.
- By definition PNES are psychogenic (psychological) in origin.
- Can be
  - a form of conversion disorder or more broadly somatoform disorder—these are involuntary
  - a form of malingering or factitious disorder—these are voluntary
Frequency/ sex ratio and age of onset

- Up to one in five patients with apparently medical intractable epilepsy referred to epilepsy centres.
- Incidence and prevalence varies in different countries: likely on account of differences in social and cultural norms.
- More frequent in women as compared to men.
- Typical age of onset is young adulthood
  - In extremes of age be wary: Non epileptic but not psychogenic (“physiologic”) events are common-breath holding spells, apnea of prematurity, night terrors (pediatric age group), neurodegenerative disorders: tremors, dystonias (elderly).
Making the diagnosis

• Misdiagnosis is common.
• Make present to you in the office/clinic with history of uncontrolled seizures/typical events inspite of
  – multiple inpatient admissions
  – multiple physicians
  – multiple anti-epileptic drugs (AEDs)
  – multiple tests
Making the diagnosis

- Good history forms the backbone
  - History of typical event
    - From patient
    - From family/ caregiver/bystander
  - Points to ask:
    - Does the event ever occur out of sleep or do the events always occur during daytime when people are around
    - Specific triggers that are unusual for epilepsy: events are clearly precipitated by emotional stress ("I become angry and then shake")
    - Circumstances in which attacks occur: around an audience (family, social events, in your office)
    - Details of the typical event: motor movements characteristics that are inconsistent with epileptic seizures: side-to-side shaking of the head, bilateral asynchronous trashing movements which are out of phase, weeping, verbalization and arching of the back (pelvic thrusting), eyes are closed and cannot be pried open.
    - History of other coexisting psychogenic conditions: fibromyalgia, chronic fatigue syndrome, IBS.
    - Good psychosocial history: depression, bipolar disorder, personality disorders (hysterical personality), family dynamics.
    - History of sexual abuse is specially important.
Making the diagnosis

• The key to diagnosis (gold standard) is inpatient Video-EEG study
  – Helps to make an electroclinical correlation: capture a typical event on the video and interpret the electrographic correlate.
  – No change in the background EEG during the clinical event.
  – Clinical event is inconsistent with known seizure semiology: event starts-stops-then starts again, awareness is preserved in spite of bilateral motor convulsive activity.

• Caveats:
  – Typical event may not be captured in spite of days in patient video EEG study (Aka—patient may not oblige).
  – EEG may be hard to interpret due to excessive motion/movement artifact.
  – Always the question: maybe the event is not accompanied with surface EEG changes.
Making the diagnosis (Video-EEG)

• If patient does not oblige: induction/ provocation techniques may be utilized: photic stimulation, hyperventilation, intravenous saline, alcohol wipe.

• Principle behind provocative techniques: suggestibility (if you can reproduce the event by suggestion/ placebo).
  – Caveat:
    • Patients with “real” seizures may throw a pseudoseizure when suggestibility is used.
Making the diagnosis

• If Video-EEG facility is unavailable: routine EEG, ambulatory EEG, extended EEG—somewhat suggestibility—lower yield

• Imaging studies may or may not be normal: correlate the MRI/ CT with the history

• Blood tests: prolactin (increased for about 30 minutes after a generalized convulsion)—impractical, hence not too useful.
Treatment

• Not easy:
  – patients frequently do not accept their diagnosis (“I am not crazy” “I shall see another doctor”)
  – hence the way you deliver/explain the diagnosis to patients and their families is an art: some physicians are blunt, others are more vague or mask their words
    • Be non confrontational
    • They may or may not be agreeable to seeing a psychiatrist.
    • Assure continuity of care
    • Be supportive
Treatment

• Other issues: can AEDs be tapered off
• Does the patient have co-existing true seizures
• Get other professionals involved: social workers, psychiatrists
Outcomes

• Recent paper in Neurology:

  – **Objective:** To determine short-term outcome and its predictors in patients with psychogenic nonepileptic attacks (PNEA).
  
  – **Methods:** Retrospective cohort study of outcomes relating to attendance at follow-up, spells, use of emergency services, employment, and social security payments recorded at 6 and 12 months post diagnosis in 260 consecutive patients.
  
  – **Results:** A total of 187 patients (71.9%) attended at least 1 follow-up visit, and 105 patients (40.4%) attended 2. A total of 71/187 patients (38.0%) were spell-free at last follow-up. In contrast, 35/187 patients (18.7%) had marked increase in spell frequency postdiagnosis. Delay to diagnosis had no relationship to outcome. Patients with anxiety or depression were 2.32 times less likely to become spell-free ($p = 0.012$), and patients drawing social security payments at baseline were 2.34 times less likely to become spell-free ($p = 0.014$), than patients without those factors. Men were 2.46 times more likely to become spell-free than women ($p = 0.016$). While 93/187 patients (49.7%) were using emergency medical services at baseline, only 29/187 (15.5%) were using them at follow-up ($p < 0.001$).
  
  – **Conclusion:** A substantial minority of patients became spell-free with communication of the diagnosis the only intervention. Previous psychiatric diagnoses, social security payments, and gender were important predictors of outcome. Most patients stopped using emergency services, irrespective of whether or not spells continued. Outcomes other than spell frequency may be important in patients with psychogenic nonepileptic attacks. Mc. Kenzie et al. NEUROLOGY 2010;74:64-69
Making sense of the paper

- Not all patients become “seizure”/spell free—many in fact do not
- Males become spell free more than females
- If they have a previous psychiatric diagnosis or some motive like disability/ unresolved marital stress—they shall not become spell free
- Events may become less dramatic—less hospitalizations or visits to the doctor
- They may be lost to follow up and find another doctor
Thank you and now on to the videos---