Objectives

- Provide an overview of the most common movement disorders, like Parkinson’s disease, essential tremor, Huntington’s disease, chorea
- Discuss symptoms and signs that can help identify the most common movement disorders: Parkinson’s disease, parkinsonism, essential tremor, Huntington’s disease, chorea
- Discuss steps to manage some common movement disorders
- Discuss when a movement disorder can become an emergency, and how to avoid precipitating emergencies in movement disorders

How to tell a Klotz from a Glotz

Well, the Glotz, you will notice, has lots of black spots. The Klotz is quite different with lots of black dots. But the big problem is that the spots on the Glotz are about the same size as the dots on a Klotz. So you first have to spot who the one with the dots is. Then it’s easy to tell who the Klotz or the Glotz is.

Geisel "Dr. Suess" (1904-1991)

Akathisia

- A feeling of inner restlessness
- Relieved by motion
- Movements are usually slow, continual, and may be suppressed by action
- Vocalization (moaning) may be present

Athetosis, Chorea & Ballism

- Involuntary, irregular, purposeless, non-rhythmic, abrupt, rapid, unrestrained
- Flow from one body part to another
- Motor impersistence (“milk maid grip”) may be present
- May be able to suppress the movements briefly,
- Activation may produce overflow.
**Dyskinesia**

- Abnormal, involuntary movement – usually reserved to denote a drug induced movement

**Dystonia**

- Twisting movements that tend to be sustained at the peak of movement
- Frequently repetitive
- Often progress to prolonged abnormal postures
- May be classified by its distribution or by etiology
- MAY be present only with certain postures or actions and may be suppressed by a “sensory trick”.
**Myoclonus**

- Sudden, brief, “shock-like” involuntary movements caused by muscular contractions or inhibitions (asterixis)
- Characterized by its distribution (focal, multifocal, or generalized), amplitude, and associated level of consciousness.

**Rigidity**

- Increased muscle tone that is present equally in all directions motion and throughout the range of passive motion.
- Independent of the speed of the motion
- May increase with activation of the opposite limb.

**Tic**

- Brief, usually rapid purposeless stereotyped movements that involve multiple muscle groups
- May be briefly suppressed
- May be motor or vocal and simple or complex

**Tremor**

- Rhythmic oscillation of a body part
- Characterized by a frequency, amplitude, distribution and behavior at rest, posture and action
Case

- A 62 year-old man, comes in with his wife, who complaints that the patient has very “restless” sleep and sometimes he even “fights” during sleep (he knocked her once, which prompted the visit to the clinic). He does not have any medical history or uses any drugs. On exam, he has a mild left-hand “pill rolling” tremor, his posture is slightly flexed, mild shuffling gait with decreased arm swings, and has micrographia.

- What do you need to diagnose PD?
- How would you treat PD?
- What is your differential diagnosis?

Parkinson’s Disease

- Bradykinesia, tremor at rest, rigidity, shuffling gait, flexed posture, decreased arm swing, dysarthria, micrographia
- Can have depression, anosmia, sleep disturbance (e.g. RBD)
- Accumulation of α-synuclein in neurons, that eventually lead to reduced dopaminergic transmission within the basal ganglia. Lewy body deposits.
- Rx: dopamine replacement (dopa/carbidopa) or agonism (pramipexole, pergolide) or augmentation (COMT inhibitors); cerebral ablations and DBS

Differential Diagnoses for PD

- Drug-induced
- Cerebrovascular parkinsonism
- Essential tremor
- Cortico-basal ganglionic degeneration
- Progressive supranuclear palsy
- Multisystem atrophy (with parkinsonism)
  - Striatonigral degeneration
  - Olivopontocerebellar degeneration
  - Shy-Drager syndrome
Case

• 78 year-old man with PD (on Sinemet®) admitted to the hospital for elective TURP. Post-op develops nausea. The inter was paged and ordered metoclopramide 10 mg IV q6h PRN. After 2 hours after the first dose, the patient develops becomes confused, is hyperpyrexic, sweaty, tachypneic and muscular rigidity.

• What has happened here?
• How would you manage this patient?
• How would you have prevented this problem?

Neuroleptic Malignant Syndrome

• Virtually always iatrogenic
• Mortality ~10%
• Acute/subacute dopamine “withdrawal”
• Diff Diag: malignant hyperthermia, serotonin syndrome, encephalitis, drug toxicities
• Rx: ABCDs, keep patient hydrated, avoid D-blockers, continue Dopa drugs, control temperature, monitor for rhabdo, consider dantrolene, bromocryptine
• Prevention: prevent nausea (if possible), otherwise use other antiemetics such as Anzemet®

Questions?