NEURO BOWL
Primary Care in Paradise
Michael A. Lobatz MD
Scripps Neurology
Which group are you in?

A. Team Charcot
B. Team Osler

A. 52%
B. 48%
Neurologists are FUN people!!

A. True
B. False
1. 59 year old with hypertension on lisinopril with chronic cough
What is your diagnosis?

A. Myasthenia Gravis
B. ACE cough
C. Cerebral Aneurysm
D. Lung cancer

- A. 39%
- B. 19%
- C. 5%
- D. 38%
Lung Cancer
Horner’s Syndrome

- Constricted Pupil
- Retraction of the eyeball into the head
- Slight drooping of the eyelid
- Increased pink color and warmth of the ear and nose on the affected side (very hard to detect)
Horner’s Syndrome

Horner’s syndrome results when the cervical sympathetic pathway from the hypothalamus is interrupted. The lesion may be central (A), preganglionic (B), or postganglionic (C) in origin; it may be primary or secondary to another disorder. Symptoms may include ptosis, miosis, anhydrosis (lack of sweating) and/or hyperemia.

- Descending tract from hypothalamus
- Preganglionic tract
- Postganglionic tract

Ptosis (droopy eyelid)
Miosis (constricted pupil)
Anhydrosis (inability to sweat)
Hyperemia (flushed skin)

Levator palpebrae superioris muscle
Superior tarsal muscle (Müller’s muscle)
Superior tarsal plate
Short ciliary nerves
Long ciliary nerves
Constrictor pupillae muscle
Dilator pupillae muscle

Intermediolateral cell column
Gray ramus communicans
White ramus communicans
Spinal nerve (T1)
2.
What is your diagnosis?

A. Stroke
B. Herpes Zoster
C. Dermatophytosis
D. Lyme’s disease

D. Lyme’s disease is the correct diagnosis. The graph shows that the majority of votes (98%) are for Lyme’s disease.
Neurological complications of Lyme disease

• Most often occur in the second stage of Lyme disease
  – Numbness
  – pain
  – weakness
  – Bell's palsy
  – visual disturbances
  – meningitis symptoms such as fever, stiff neck, and severe headache.
3. 63 year old with double vision and intermittent fatigue
What is your diagnosis?

A. Botulism
B. Myasthenia Gravis
C. Multiple Sclerosis
D. Brain tumor, raised ICP
Myasthenia Gravis

• Muscles that control eye and eyelid movement, facial expression, and swallowing are most frequently affected.
• Symptoms may include ptosis, or diplopa
• Difficulty in swallowing and slurred speech
4. 35 year old male with severe right face and forehead pain.

- Episodes occurring since age 20
- Often awakens him at night
- C/O left sided leg numbness at times
What is your diagnosis?

A. Trigeminal neuralgia
B. Atypical facial pain
C. Multiple Sclerosis
D. Cluster headaches

A. 18%
B. 3%
C. 24%
D. 55%
Multiple Sclerosis

- Other neurological symptoms
- Young onset atypical for pure trigeminal neuralgia
- Approx. 5 - 10% of patients with MS experience trigeminal neuralgia.
- Demyelination of the trigeminal nerve nucleus within the brainstem, or the trigeminal nerve itself.
5. 50 year old smoker with diabetes, HTN & hyperlipidemia
What is your diagnosis?

A. Horner’s syndrome
B. Cerebral Aneurysm
C. Diabetic 3\textsuperscript{rd} N. palsy
D. Cluster headaches

- Horner’s syndrome: 0%
- Cerebral Aneurysm: 0%
- Diabetic 3\textsuperscript{rd} N. palsy: 85%
- Cluster headaches: 0%
Diabetic 3rd Nerve Palsy

Although the involved pupil is large, so is the one in the normal eye in this girl who has diabetic third nerve palsy with sparing of the pupil. Her pupils were equal before dilating drops and dilated equally after instillation.
3rd Nerve Palsy

- May have a droopy eyelid
- Inability to move the eye inwards, and vertically.
- The affected eye may be displaced downwards and outwards.
- If the eyelid is not markedly drooped, then double vision with diagonal separation is often seen.
- *If a patient has a new onset third nerve palsy accompanied by a dilated pupil, the possibility of a brain aneurysm should be excluded.*
6. 35 year old female with headache and diplopia following a head injury
What is your diagnosis?

A. Subdural Hematoma
B. Nothings wrong but she’s in litigation
C. Torticollis
D. 4\textsuperscript{th} N. (Trochlear) Palsy
4th Nerve (Trochlear) Palsy

- The superior oblique muscle depresses, intorts, and abducts the globe.
- In acquired lesions of fourth nerve, patients report vertical, torsional, or oblique diplopia.
- Patients often adopt a characteristic head tilt, away from affected side to reduce their diplopia.
7. 40 year old with ataxia, leg weakness and difficulty with voice and swallow.
What is your diagnosis?

A. Multiple Sclerosis
B. Brain Stem injury
C. Seizure activity
D. Essential Tremor

- A: 17%
- B: 64%
- C: 13%
- D: 6%
Oculo Palatal Myoclonus

- Characterized by rhythmic involuntary jerky movements of the soft palate of the throat.
- When associated with eye movements, as is not unusual, it is called "oculopalatal myoclonus", or OPM.
- A clicking sound is commonly heard.
- The frequency of the jerking is ordinarily 1-2 hz.
- Persistence during sleep and frequently lack of modulation by voluntary influences.
Etiology of OPM

Guillain-Mollaret Triangle

- Superior cerebellar peduncle
- Red nucleus
  - Central tegmental tract
- Inferior cerebellar peduncle
- Inferior Olivary nucleus

Dentate nucleus (contralateral)
8. 80 year old with bilateral foot pains
What is your diagnosis?

A. Peripheral Neuropathy
B. Charcot foot
C. A and B
D. None of the above
Charcot Foot Due to Severe Peripheral Neuropathy

- Pattern of bone and joint destruction
- Usually begins with peripheral neuropathy
- Producing small fractures in the bones
- This combined with the lack of ability to heal by having limited circulation weakens the supporting structures of the foot and eventually result in the deformity.
9. 50 year old female with neck pain
What is your diagnosis?

A. 4\textsuperscript{th} N. Palsy
B. Neck Strain
C. Spasmodic torticolis
D. Parkinson’s Disease

- A. 4\textsuperscript{th} N. Palsy: 0%
- B. Neck Strain: 7%
- C. Spasmodic torticolis: 91%
- D. Parkinson’s Disease: 2%
Spasmodic Torticollis (Cervical Dystonia)

• Symptoms are caused by intermittent or sustained contractions of the muscles around the neck.
• Head, neck or shoulders may be uneven and some patients experience tremors in the head or arms.
• ST is usually accompanied by constant and extreme pain.
Spasmodic Torticollis (Cervical Dystonia)

• Medications used to treat this:
• Baclofen, other muscle relaxants
• Injection of botulinum toxin can temporarily relieve the torticollis, but repeat injections every 3 months are usually needed.
• Surgery is rarely used.
10. 80 year old female with speech difficulties.
What is your diagnosis?

A. Parkinson’s Disease
B. Essential Tremor
C. Spasmodic torticollis
D. Wilson’s Disease

A. 71%
B. 18%
C. 0%
D. 11%
Essential Tremor

• Essential tremor is the most common movement disorder.
• It is a syndrome characterized by a slowly progressive postural and/or kinetic tremor, usually affecting both upper extremities.
• Essential tremor is familial in at least 50-70% of cases.
• Transmission is autosomal dominant, with incomplete penetrance.
Essential Tremor

• Primidone and propranolol are the cornerstones of maintenance medical therapy for essential tremor.

• Possibly useful
  – Gabapentin
  – Topiramate
11. 45 year old complains of dragging the right foot.

Exam:

Right Foot dorsiflexion 0/5
Right Foot eversion 0/5
Right Foot inversion 5/5
Right foot plantar flexion-normal

Left foot normal

Ankle and knee jerks 2+
What is your diagnosis?

A. L5 Radiculopathy
B. Acute stroke
C. Peroneal Neuropathy
D. Peripheral neuropathy
Common causes of damage to the peroneal nerve

- Trauma or injury to the knee
- Fibular fracture
- Use of a tight plaster cast (or other long-term constriction) of the lower leg
- Habitual leg crossing
- Regularly wearing high boots
- Pressure to the knee from positions during deep sleep or coma.
- Injury during knee surgery.
12. 40 year old awoke with wrist drop. She complains of pain in her upper arm.
What is your diagnosis?

A. C5 Radiculopathy
B. Acute stroke
C. Acute Radial Palsy
D. Ruptured tendons

- C. Acute Radial Palsy (66%)
- A. C5 Radiculopathy (29%)
- D. Ruptured tendons (4%)
- B. Acute stroke (1%)
Saturday Night (Radial) Palsy
Compressive Radial Palsies

- **Saturday night palsy** from falling asleep with one's arm hanging over the arm rest of a chair, compressing the radial nerve at the spiral groove.
- **Honeymoon palsy** from another individual sleeping on and compressing one's arm overnight.
- **Handcuff Neuropathy** from tight fitting handcuffs compressing the superficial branch of the distal radial nerve; this is also referred to as cheiralgia parasthetica.
- **Crutch palsy** from poorly fitted axillary crutches.
13. 58 year old with HTN, DM, prior Left ischemic CVA – “recovered”
Acute change in speech and mood
What is your diagnosis?

A. Depression

✓ B. Pseudobulbar palsy

C. Bulbar palsy

D. Cri du Chat
Multiple Cerebral Infarcts
Involuntary Emotional Expression Disorder
Pseudobulbar Palsy

• Episodes of crying, laughing, or both
• A result of structural brain damage
• It is common with several neurological disorders
  – Stroke
  – Amyotrophic lateral sclerosis
  – Traumatic brain
  – Multiple sclerosis
  – Dementias such as Alzheimer's
• Prevalence is likely to be underestimated
  – approximately 1 million cases exist in the United States
  – Associated with undeniable distress for patients and family members
  – Can result in embarrassment and withdrawal from social and occupational settings
• Often confused with other mood or affective disorders
14. 70 year old male with mild memory loss.

- **History:**
  - 1 year duration
  - More noticeable lately
  - Can still function but family has noted mild difficulties cognitively.
  - Very “active” dreams that he appears to act out in his sleep.

- **Exam:**
  - MMSE = 23
  - Mildly delusional thinking
  - Mild resting 3-4 Hz tremor
  - Mild masked Facies
What is your diagnosis?

A. Schizophrenia
B. Parkinson’s
C. Alzheimer’s
D. Lewy Body Dementia
Lewy Body Dementia
Lewy Body Dementia

- Dementia is the primary symptom
  - Memory
  - Problem solving
  - Planning
  - Abstract or analytical thinking.
  - Cognitive fluctuations involve unpredictable changes in concentration and attention from day to day.
- Parkinson’s-like symptoms
  - Rigidity
  - Shuffling gait
  - Tremor
  - Slowness of movement
- Hallucinations
- REM behavior disorder
Treatment

- Cholinesterase inhibitors
- Carbidopa/levodopa
- Avoid antipsychotics if at all possible
- If one is needed:
  - Quetiapine (will not block dopamine receptors)
  - Do not use haloperidol, thorazine, or other atypical antipsychotics.
  - Avoid phenothiazine anti-emetics
- Clonazepam for RBD can be considered
15. 63 year old with memory loss, incontinence and shuffling gait disturbance.
What is your diagnosis?

A. Depression
B. UTI
C. NPH  ✔
D. Alzheimer’s
Normal Pressure Hydrocephalus

- Ventricular enlargement
- Most common in the elderly population
- It may result from a subarachnoid hemorrhage, head trauma, infection, tumor
- Symptoms of NPH include:
  - progressive mental impairment and dementia
  - problems with walking
  - impaired bladder control leading to urinary frequency and/or incontinence.
- DDX: Alzheimer's disease, and Parkinson's disease
- Appropriate testing:
  - including brain scans (CT and/or MRI)
  - spinal tap
  - intracranial pressure monitoring
  - neuropsychological tests
- Treatment for NPH involves surgical placement of a shunt
16. 50 year old with onset of inappropriate behavior.

- Difficulty with decision making
- Word finding difficulties
- Difficulty with complex problem solving
- Mild memory loss
- Normal Neurologic exam
- MMSE = 25
Imaging
What is your diagnosis?

A. Depression
B. Lewy Body Dementia
C. Pick’s Disease ✔
D. Alzheimer’s
Fronto Temporal Dementia (Picks Disease)

• Pick bodies and Pick cells neurons in frontal and temporal areas
• Pick bodies contain an abnormal form tau protein
• Many different abnormal genes have been found that can cause Pick’s disease.
• Pick's disease is rare.
• The average age at which it begins is 54.
Clinical Symptoms and Signs

• Compulsive and inappropriate behaviors and moods
• Withdrawal from social interaction, mood changes
• Problems with personal hygiene
• Failure to show emotional warmth, concern, empathy, sympathy
• Not caring about events or environment or ADL’s
• Rigidity
• Memory loss that gets worse, repetitive
• Movement/coordination difficulties (apraxia)
• Memory loss is usually mild
• Incontinence
FDG-PET is useful for distinguishing between Alzheimer’s and fronto-temporal (Pick’s) dementias and is now Medicare reimbursable for this purpose.