Patient Chart Quotes

“The patient was in his usual state of good health until his airplane ran out of gas and crashed.”
Patient Chart Quotes

“Examination of the genitalia was completely negative except for the right foot.”

Patient Chart Quotes

“Both breasts are equal and reactive to light and accommodation.”
Patient Chart Quotes

“The patient has been depressed ever since she began seeing me in 2003.”

Case 1: 68 yo man

- HTN, elevated cholesterol, 50 pk-yr smoker
- Left body weakness/numbness, slurred speech x 60 minutes
- BP 170/100; P 56; CV exam normal
- No neglect; left visual field cut present
- Left body weakness and sensory loss
Q1-What is true about this patient’s candidacy for TPA therapy?

a) The patient is within the optimal time frame for TPA therapy
b) A head CT scan is not necessary
c) Treatment with TPA lowers mortality
d) TPA does not increase the risk of intracerebral hemorrhage
e) Hemianopia is a contraindication to TPA

Which statement regarding acute stroke therapy is false?

a) IV TPA can be given up to 4.5 hours after onset of symptoms
b) Time of onset of symptoms is when the patient was last known to be normal
c) Intra-arterial TPA can be given up to 24 hours after onset of symptoms
d) Clot extract < 8 hours onset of symptoms
TPA for Acute Stroke-Indications

- Indications:
  - Age > 18 years
  - Onset of symptoms < 4.5 hours
  - CT-no hemorrhage
  - CT hypodensity < 1/3 hemisphere
  - Measurable neurologic deficit that is not clearing at the time of the evaluation

Stroke Pearls-I

- Risk of hemorrhage 10x higher in TPA recipients
- Only 2-8.5% with acute stroke receive TPA-need stroke teams!
- Faster is better-the earlier treatment is started, the better the odds of improvement
Stroke Pearls-II

- Anticoagulation indications- atrial fibrillation, vert or carotid dissection, cardiac embolism, hypercoagulable states
- Antiplatelet options- ASA, Plavix, Aggrenox
  - ASA 50 mg to 1.5 g
  - Plavix or Aggrenox if ASA contraindicated

Case 2: 26 yo man

- GTC sz x 20 minutes; found on street
- No further history available
- BP 180/100  P 120/min  T 37.5  99% sat
- RR 16/min  Weight 70 kg
- 2 mg Ativan IV, but tonic-clonic movements of all limbs continue
Q3: The next pharmacologic step in management is which of the following?

a. Intravenous fosphenytoin at 20 mg/kg
b. Additional lorazepam, to .1 mg/kg total dose
c. Midazolam with EEG monitoring
d. Propofol with EEG monitoring

Status Epilepticus

• ABCs first, establish IV
• Stop the seizures
  – IV Lorazepam 0.1mg/kg, if not effective then
  – IV Fosphenytoin 20 mg/kg
  – D 50, Narcan, Thiamine
• Begin diagnostic evaluation simultaneously
Q4: What is a common cause of status epilepticus in patients without prior seizures?

- a. Multiple sclerosis
- b. Parkinson’s disease
- c. Stroke
- d. Hypothermia
- e. Thiamine deficiency

Status-Diagnostic Studies

- Glu, BUN, Cr, Mg, Ca, Phos, LFTs, CBC, Na
- Tox screen; possibly anticonvulsant levels
- CT or MRI-intraparenchymal lesion
- LP-infection, blood
- EEG-ongoing seizures?
Case 3: 36 yo woman

- Severe, sudden onset HA, nausea and vomiting x 36 hours
- No prior headaches
- BP 170/100  P 56  T-Afebrile  RR 16
- PE reportedly normal
- Neuro exam normal
- Head CT normal

Q5: Headache characteristics worrisome for a serious underlying cause do not include which one of the following?

a. New-onset headache
b. Headache after standing up
c. Worse headache in the supine position
d. Severe head pain
e. Sudden-onset headache
Q6: What is the next step in her management?

a. Give a triptan, fluids and anti-emetics
b. MRI of the brain
c. Lumbar puncture
d. Carbonic anhydrase inhibitors
e. EEG

Subarachnoid hemorrhage

• High rbc count early-check tube 1 and 4
• Xanthochromia in ½ day, peak in ½ week, resolve in ½ month
• Ddx-aneurysm, head trauma, extension from ICH; infections, tumors less likely
• CT positive in 90%; false negatives-delayed imaging, small bleed, spine source
Case 4: 23 yo man with episodic confusion over 3 months

- Staring spells 1-2 min; picking at the sheets
- Loss of awareness of surroundings
- Confused for 30-60 minutes afterward
- Same foul smell at onset of each spell
- Occasionally has only foul smell for seconds
- Gen PE and Neuro exams normal

Q7: Which clinical feature of the history is the most specific for seizure?

a. Recurrent foul smell at the beginning of each episode
b. Staring episodes
c. Picking at the sheets
d. Episodic confusion
e. Loss of awareness of surroundings
Features of Generalized Epilepsy

- Stereotyped onset of symptoms
- Post-ictal confusion (> seconds) strongly suggests seizure
- A single spell is a seizure, multiple stereotyped spells constitutes epilepsy
- Contrast syncope-light-headedness, dimming of vision, sweats, nausea

Q8: Which of the following is the likely diagnosis in this patient?

a. Generalized seizure disorder  
b. Focal motor seizures  
c. Complex partial seizures  
d. Non-epileptic seizures (pseudoseizures)  
e. A brain tumor
Q9: Which of the following statements is true?

a. A normal EEG excludes seizures as a diagnosis.
b. The EEG will show generalized seizure activity.
c. Focal slowing on the EEG helps to localize the anatomic origin of the seizures.
d. A normal MRI excludes seizures as a diagnosis

Use Monotherapy

- 2/3 sz can be managed with a single drug
- Push drug dose to effectiveness or toxicity before beginning a second agent
- Drug levels can establish compliance
- Trough levels can influence dosing
- New 1st line drugs-Lamotrigine, Topiramate, Oxcarbamat, Levetiracetam
Case 5: 24 yo man with 2 weeks of right facial weakness

- Skin rash right trunk 2 months prior; diagnosis of possible contact dermatitis
- Weakness affecting the entire right face
- Facial sensation, hearing, gag normal
- Given patch for the right eye and follow-up appointment in one month

Q10: Which statement about the pattern of right facial paresis is true?

- a. The facial weakness is lower motor neuron in type
- b. The facial weakness reflects injury in the left cerebral hemisphere
- c. This weakness reflects injury in the brainstem
- d. Weakness is upper motor neuron in type
Case 5: 24 yo man with right lower motor neuron (LMN) facial weakness

• 1 week later develops left facial weakness; now both sides affected—entire face

• Neck flexion resistance 2 FB

• LP-glucose 65 mg/dl, protein 70 mg/dl, wbc 150 (99% lymphs), rbc 3

Evaluation of Unilateral Facial Weakness

• Lower 2/3 of the face—upper motor neuron
• Entire face—lower motor neuron (LMN)
• Lower motor neuron facial weakness can arise from the medulla, subarachnoid space, or along the course of the facial nerve
• All cranial nerves— injury in the brainstem, in the subarachnoid space, or along nerve
Lower motor neuron facial paresis-differential diagnosis

- Intramedullary-multiple sclerosis, brainstem stroke, brainstem tumors
- Subarachnoid space-infection, neoplastic meningitis, sarcoid
- Nerve-Bell’s palsy, HIV, trauma, cerebello-pontine angle tumors (cranial nerves V, VII, VIII, IX, X)

Q11: Which is least likely to explain this patient’s facial palsy?

a. Lyme disease
b. Sarcoid
c. Diabetes
d. Lymphoma
Upper motor neuron (UMN) vs. Lower motor neuron (LMN) weakness

- **LMN** - anterior horn (cord), root, nerve, neuromuscular junction, muscle
  - Patchy weakness, reflex loss, decreased bulk
- **UMN** - brain, brainstem, spinal cord
  - Distal > proximal, extensors > flexor
  - Slow fast finger movements, foot taps
  - Pronator drift (arm); Babinski sign (leg)
  - Increased reflexes, spasticity

Case 6: 63 yo woman with tremor of the hands

- Tremor x 5 years; difficulty manipulating objects x 1 year
- Worse with coffee, better with wine
- Mother with similar symptoms
- Normal VS, MS, CN, sensory exams
- Fine tremor of hands (10 Hz) with outstretched arms; not with hands at rest
Q12: Which one of the following is the most likely diagnosis for this tremor?

a. Stimulant drug use  
b. Hyperthyroidism  
c. Essential tremor  
d. Parkinsonism  
e. Wilson’s disease

Q13: Which one of the following choices is first line therapy for this patient?

a. Benzodiazepines  
b. Carbidopa/levodopa  
c. Mysoline  
d. Propranolol  
e. Gabapentin
Postural Tremor

Low amplitude, high frequency
• “Hypersympathetic” states
• Idiopathic most common (“essential”)

High-amplitude, slow
• Cerebellar intention-proximal and distal
• Worsens as approach target

Case 7: 68 yo man with bradykinesia, tremor x 2 years

• MMSE 30/30
• Normal eye movements
• Masked facies, bradykinesia, rigid tone
• Decreased arm swing, short steps, en-bloc turning, retropulsion
• 4-6 Hz tremor
Q14: Which disorder responds favorably to Sinemet?

a. Progressive supranuclear palsy  
b. Parkinson’s disease  
c. Multiple system atrophy  
d. Lewy body disease  
e. Striatonigral degeneration

Q15: Which of the following is the likely diagnosis for this patient?

a. Alzheimer’s Dementia  
b. Multiple System Atrophy  
c. Parkinson’s disease  
d. Corticobasal Degeneration  
e. Progressive Supranuclear Palsy
Parkinsonian Examination Signs

- Tremor-resting, slow (4-6 Hz)
- Bradykinesia-slowed initiation/range of movement affecting limbs, face, speech
- Rigidity-increased tone with passive flexion/extension of the limbs
- Postural instability-tendency to fall backwards (retropulsion)

Parkinson’s Disease-Treatment

- Begin with a dopamine agonist (e.g.- pramipexole, ropinirole) or Sinemet
- Altered mentation (eg-hallucinations) does not occur until using high dose medication
- Dyskinesias, fluctuations in response with high doses and long duration of Sinemet
- Surgical treatment available late in course
Case 8: 28 yo man with recurrent headache

- Attacks 2 times/day (3 PM, 8 PM) x 8 days
- R forehead and behind R eye; 2 hours each
- 2 weeks of similar headaches last year
- Right eye tearing and redness, rhinorrhea
- Narcotics/NSAIDs ineffective
- Normal general physical and neuro exams

Q16: Which of the following the most appropriate next step in management?

a. Lumbar puncture
b. CT scan of the brain
c. Temporal artery biopsy
d. Oxygen inhalation by nasal cannula
e. Indomethacin
Q17: What is the diagnosis?

a. Migraine with aura
b. Complicated migraine
c. Temporal arteritis
d. Cluster headache
e. Intracranial hypertension

Cluster Headache

- Unilateral retro-ocular headache in men
- Circadian pattern of attacks
- Autonomic signs common: rhinorrhea, tearing, occasional Horner’s syndrome
- Acute treatment: high flow oxygen; parenteral triptans as a back-up
- Preventive: Prednisone, Valproic acid, Lithium, Verapamil
Distinctive Headaches-I

- Common migraine-without aura
- Migraine with aura (“classic migraine”) either visual (bright, often geometric shapes—not curtain) or sensory
- Acute Rx
  - OTC first (acetaminop, NSAIDs); triptans
  - Prophylaxis- > 2-3 attacks per week

Distinctive Headaches-II

- Trigeminal neuralgia-sharp jabbing or electric pain lower face x sec
- Rx-carbamazepine; consider brain MRI
- Elevated CSF pressure-headache supine
- Decreased CSF pressure-headache standing
- Temporal arteritis-scalp tenderness, elevated ESR, high diagnostic suspicion
  - Temporal artery bx; steroids for Rx
Non Random Pearls-I

• B12 deficiency causes macrocytic anemia, weakness/numbness in the legs, myelopathy
• Movt disorder, young adult, psych findings-Wilson’s disease (Kaiser-Fleischer rings)
• Multiple sclerosis-disease of white matter
  – Lesions separated in time and space on MRI
  – Optic neuritis common; CSF oligoclonal bands

Non-Random Pearls-II

• Myasthenia gravis-fluctuating weakness, proximal > distal in limbs, ptosis, diplopia
  – Positive AChR Ab; EMG repetitive stim
  – Rx Prednisone + Imuran or Cellcept
• Acute Myelopathy- sensory level, acute urinary retention, paraparesis, or back pain
  – MRI of the spine at sensory level or back pain; if negative, image the rest of the spine
  – If MRI negative, then LP, neuro consult
Non-Random Pearls-III

- Guillain-Barre syndrome: ascending weakness, areflexia, elevated CSF protein
  - Risks: Resp failure, DVT, autonomic instab
  - EMG: axonal or demyelinating
  - Rx: IVIg or pheresis; steroids ineffective

ABIM Certification Exam

Good Luck!