

ANSWER SHEET

Minor Neurologic Complaints Rhodes College Conference 11/01

1. A 19 y.o. actor who plays Romeo in Romeo and Juliet comes to Rhodes Clinic complaining of weakness of his right leg ever since his death scene the day before. After falling over dead, his leg had rested in an awkward position with pressure just below his right lateral knee for over 20 minutes. On examination, he has right foot drop and sensory loss over the right lateral calf and dorsum of the foot. Appropriate management at this time consists of:
 - a. EMG and NCS of the right leg
 - b. X-ray and ultrasound of the right popliteal fossa to exclude a mass lesion
 - c. Surgical exploration to relieve the peroneal nerve compression
 - d. A custom-fitted ankle foot orthotic to increase ankle stability and prevent plantar flexion contracture**
 - e. Prompt referral to a neurologist for further evaluation

Comment:

This is classic peroneal nerve palsy. The peroneal nerve supplies dorsiflexors (tibialis anterior) and everters (turning out) of the foot along with sensation to the lateral leg and dorsum of the foot. Peroneal palsy spares foot inversion. Prognosis is good for complete recovery within weeks to month.

2. A 21 y.o. Rhodes student comes with sudden weakness and drooling involving her left face starting the evening before. She has inability to smile on her left, loss of nasolabial fold, and inability to raise her left eyebrow. The remainder of the neurologic examination is normal. Appropriate management consists of:
 - a. Tapering course of corticosteroids over 10 days**
 - b. CAT without contrast to evaluate for stroke
 - c. Prompt referral to a neurologist
 - d. Obtaining HIV, Lyme, and EBV serologies
 - e. Careful evaluation (CAT, LP, VER) for multiple sclerosis

Comment:

This is classic Bell's palsy. Standard medical textbooks advocate a course of steroids for management starting at 60 mg/day Prednisone for perhaps 10 days. Use of acyclovir in addition to Prednisone is controversial but promising (e.g., 400 mg P.O. 5x/day x 10 days).

3. An obese Rhodes student comes with burning pain involving the left lateral thigh over the past week. On examination there is sensory loss over the lateral thigh but normal motor exam and normal reflexes. There is an area of point tenderness over the left anterior iliac crest. What is the appropriate management at this time?
- Check of FBS to exclude diabetes mellitus**
 - Obtaining EMG and NCS to confirm diagnosis
 - Recommend weight loss to relieve symptoms**
 - Referral to a neurosurgeon for sectioning of the ligament over the inguinal canal.

Comment:

This is classic meralgia paresthetica which is lateral femoral cutaneous nerve palsy ((L2-L3). It is more common in diabetics and in pregnancy. Obesity, tight fitting garments and poor posture may be associated. In addition to weight loss, NSAIDs may also help.

4. An 18 y.o. freshman fell asleep at an all night fraternity party and awoke the following morning unable to extend his right wrist. There is also some decreased ability to perform elbow flexion and supination and some dorsal sensory loss over the hand. Management should include:
- EMG with NCS**
 - Neurology consultation
 - Cock-up wrist splint**
 - Surgical exploration

Comment:

This is a radial nerve (C5-C8) palsy, also called "Saturday night or bridegroom's" palsy. Cock-up wrist splint is used to prevent a flexor contracture. The radial nerve supplies the forearm supinator and extensors of the fingers, wrist, elbow, and thumb. It may also sensorily innervate the back of the hand.

5. A 20 y.o. piano performance major comes with tingling and numbness of his left hand noted particularly at night. He hangs his hand off the bed for relief. He has problems opening jars. On physical examination there are paresthesias reproduced by tapping over the volar mid-wrist. There is also slight thenar atrophy and mild weakness of the abductor pollicis brevis.
- EMG and NCS of the left arm**
 - Use of a wrist splint
 - Injection of the wrist with a corticosteroid
 - Prompt referral to a neurosurgeon or orthopedist**
 - Trial of an NSAID

Comment:

This is carpal tunnel syndrome. The median nerve (C6-T₁) supplies the forearm with pronation, radial flexion, and wrist abduction. Its actions in the hand are LOAF - 1st 2 lumbricales with index and middle finger flexion at MCP jts, opposition abduction and flexion by the thumb. Sensory loss involves thumb, index, middle, and half the ring finger. Constant sensory loss, motor weakness, thenar atrophy, or failure of nonoperative therapy such as a wrist splint or steroid injection therapy are indications for surgery.

6. A 20 y.o. Rhodes student comes with weakness in his legs gradually progressive over several years. He did not participate in high school sports because of his weakness and has had problems in purchasing shoes that fit. He is adopted so FH not available. On examination, he has distal atrophy; bilaterally, high-arched feet; and decreased distal strength. The remainder of the neurological examination is normal. The most likely diagnosis is:
- Friedreich's ataxia
 - Fabry's disease
 - Abetalipoproteinemia
 - Metachromatic leukodystrophy
 - Charcot-Marie-Tooth neuropathy**

Comment:

CMT neuropathy is hereditary peroneal neuropathy and is associated with bilateral foot drop, a wasted anterior leg compartment below the knee, and pes cavus. EMG and NCS is the diagnostic procedure of choice.

7. A 21 y.o. student comes with progressive weakness over 2-3 months beginning in both legs but also involving the arms. There are some mild leg paresthesias. There is both distal and proximal weakness and absent DTRs. EMG and NCS demonstrate demyelination. Otherwise, the patient is asx. The appropriate next test to order is:
- Sural nerve biopsy for evidence of demyelination
 - HIV, FANA, and SPE
 - Lumbar puncture to detect elevated CSF protein**
 - B12 and Folate levels
 - FBS

Comment:

This is most likely chronic inflammatory demyelinating polyneuropathy (CIDP). Demyelination on NCS and an increase in CSF protein support the diagnosis. Most cases respond to chronic corticosteroid therapy. Plasmapheresis and IV IgG have also been used.

8. A 20 y.o. Rhodes student who was the driver of a car struck by another car in the rear while she was stopped at a red light presents to the emergency department with neck pain, as well as discomfort in the axilla, upper arm, elbow, dorsal forearm, and index and middle fingers. Coughing exacerbates the pain. Neurologic examination reveals weakness in the right second and third fingers, forearm, and wrist. The right triceps reflex is diminished. The most likely diagnosis in this case is:
- Syringomyelia
 - Cervical sprain
 - Thoracic outlet syndrome
 - Cervical disk herniation**
 - Brachial plexopathy
9. A 20 y.o. man presents with quick and repetitive eye blinking, nose twitching, and facial grimacing. He has been plagued with involuntary movements since childhood, but the specific movements have changed from one body part to another over time. He is rarely completely free of any movement, although there are months when the movements are minimal and other times when they are severe. His father and brother had a similar disorder and received "metal therapy." His father died in a nursing home. The patient has never received any medications other than aspirin for headaches. On neurologic examination, his cerebral, cranial nerve, sensory, and cerebellar functions are normal. His motor examination shows frequent and repetitive eye blinking, nose twitching, facial grimacing, and jaw jerking. The jaw jerks are accompanied by a guttural sound, and the nose twitching is occasionally accompanied by a sniffing noise. The rest of the body has no abnormal movements. The most likely clinical diagnosis is:
- Wilson's disease
 - Huntington's disease
 - Gilles de la Tourette's syndrome**
 - Essential tremor
 - Tardive dyskinesia

Comment:

Pimozide or fluphenazine (dopamine antagonists) can be used for treatment.

10. A Rhodes student presents to the clinic because she has had right-sided weakness and numbness and headache for the past 2 weeks. Examination shows complete loss of perception to pain on the right side, including her face. Temperature perception is normal. The corneal reflex is preserved bilaterally. Vibration is absent over the right forehead, hand and ankle. Muscle stretch reflexes are normal. Position sense, graphesthesia, and stereognosis are preserved bilaterally. What is the most likely diagnosis?
- Left thalamic infarct
 - Left hemispheric cortex tumor
 - Migraine
 - Non-neurologic functional problem**
 - Left lateral medullary infarct
11. A 25 y.o. Rhodes student presents to the clinic because of weakness in his hands. The weakness began several months ago when he noticed difficulty in using small tools while repairing his automobile. He now finds it nearly impossible to button shirts. He finds it difficult to release his grip when he grasps objects tightly and says that his hand weakness is worse in cold weather.

On physical examination, his temperature is 37 °C (98.6 °F), pulse rate is 84/min, respiration rate is 12/min, and blood pressure is 110/80 mm Hg. He has slight male-pattern baldness. His speech is nasal. There is slight wasting of the temporalis muscles bilaterally, and he has bilateral ptosis and bifacial weakness. Papillary reactions to light and ocular motions are normal. He has near-normal muscle strength in his limbs proximally and moderate weakness in his limbs distally. His hand grips are weak bilaterally, and he has difficulty releasing his grip after a forceful attempt. Sensation is normal throughout. Muscle stretch reflexes are hypoactive, and plantar responses are flexor bilaterally. He walks with a slight bilateral foot drop. The serum potassium level is 5.5 meq/L. What is the most likely diagnosis?

- Myotonia congenita
- Myotonic dystrophy**
- Paramyotonia congenita
- Hyperkalemic periodic paralysis
- Still-man syndrome

References:

- Barker LR, Burton JR, and Sieve PD. Principles of Ambulatory Medicine. Williams and Wilkins, 1995, pp. 1240-1257.
- Harrison's Principles of Internal Medicine. 1998.
- MKSAP 11 and 12. Neurology; 1998, 2001.
- Weiner H et al. Neurology, Lippincott, Williams and Wilkins. 6th ed. Philadelphia. 1999.

