Dizziness Cases

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Basic Principles

- Take an open ended history
- Know the synonyms for dizziness
- A patient can have more than one cause
- Four major types
  - Vertigo (illusion or hallucination of motion)
  - Near syncope (sensation of impending faint)
  - Imbalance (gait disorder)
  - Anxiety (metaphorical)

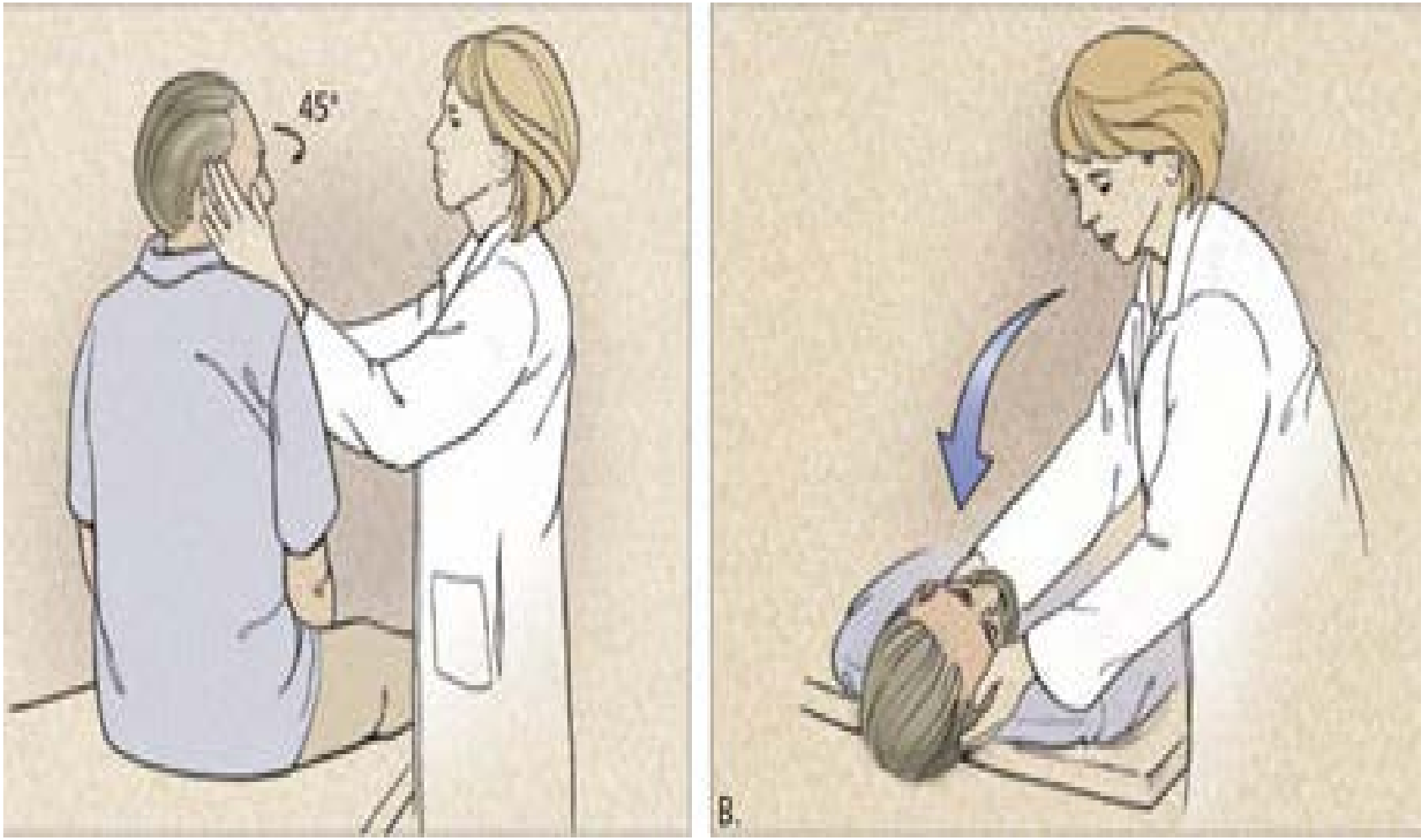
Epidemiology of Dizziness: More dizziness than dizzy people

- 1.5 dizzy complaints per dizzy person
- Half of all dizziness is vertigo
- Half of all dizziness is divided among:
  - Near syncope
  - Dysequilibrium
  - Ill-defined lightheadedness

Examination of the Dizzy Person

- Orthostatic BP and heart rate
- Hyperventilation /squatting
- Carotid sinus massage by expert only
- Hearing testing
  - Pure tone hearing loss
  - Neural hearing loss (air vs bone conduction)
  - Cochlear vs retrocochlear hearing loss (speech discrim)
- Vestibular testing
  - Spontaneous nystagmus (?alternating)
  - Head impulse test
  - Test for skew (alternate cover refixation)
  - Induced nystagmus (Dix-Hallpike maneuver)
  - Fistula test
- Proprioception testing (Romberg test)
- Cerebellar testing, including gait

Dix-Hallpike Maneuver



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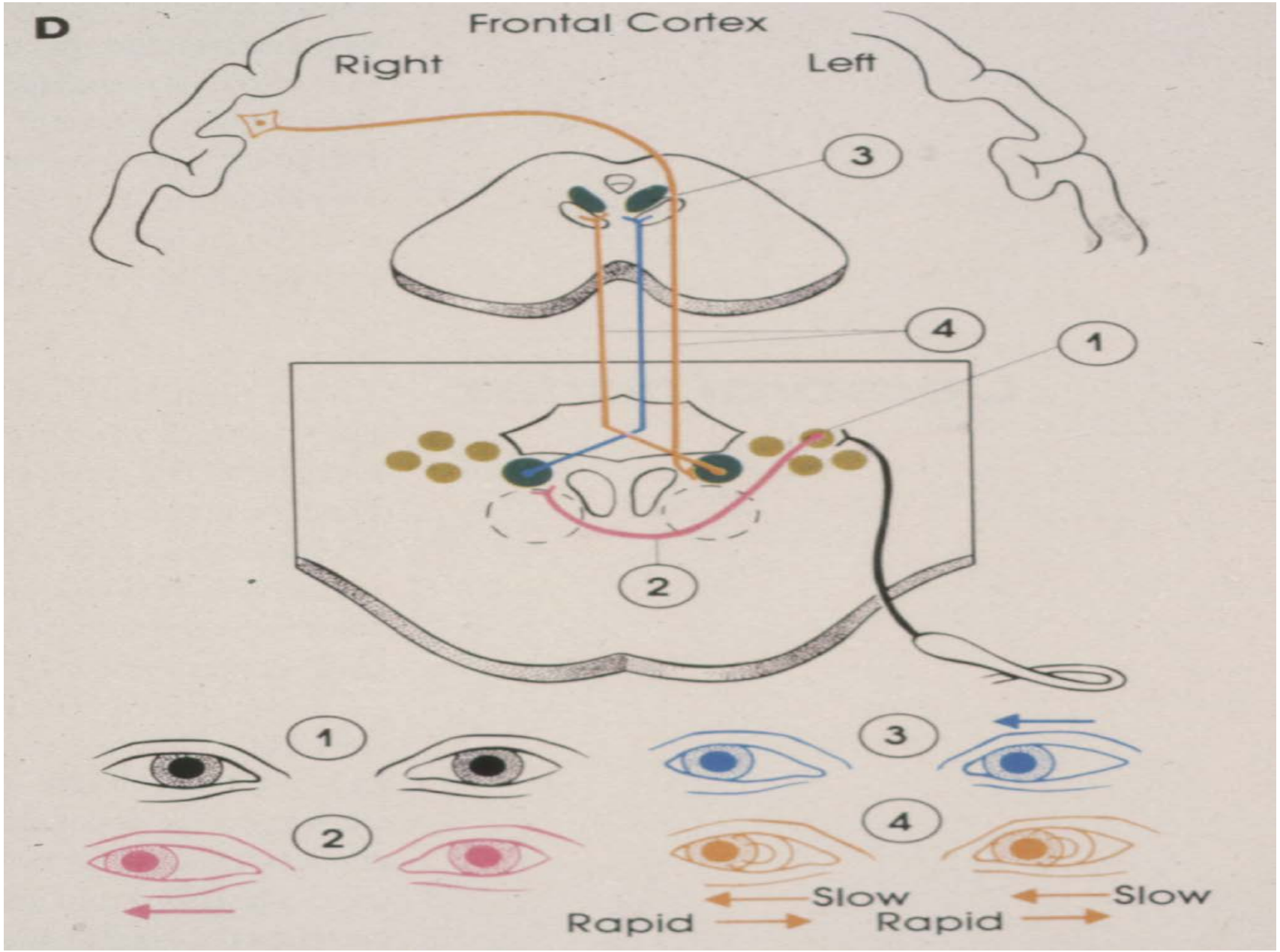
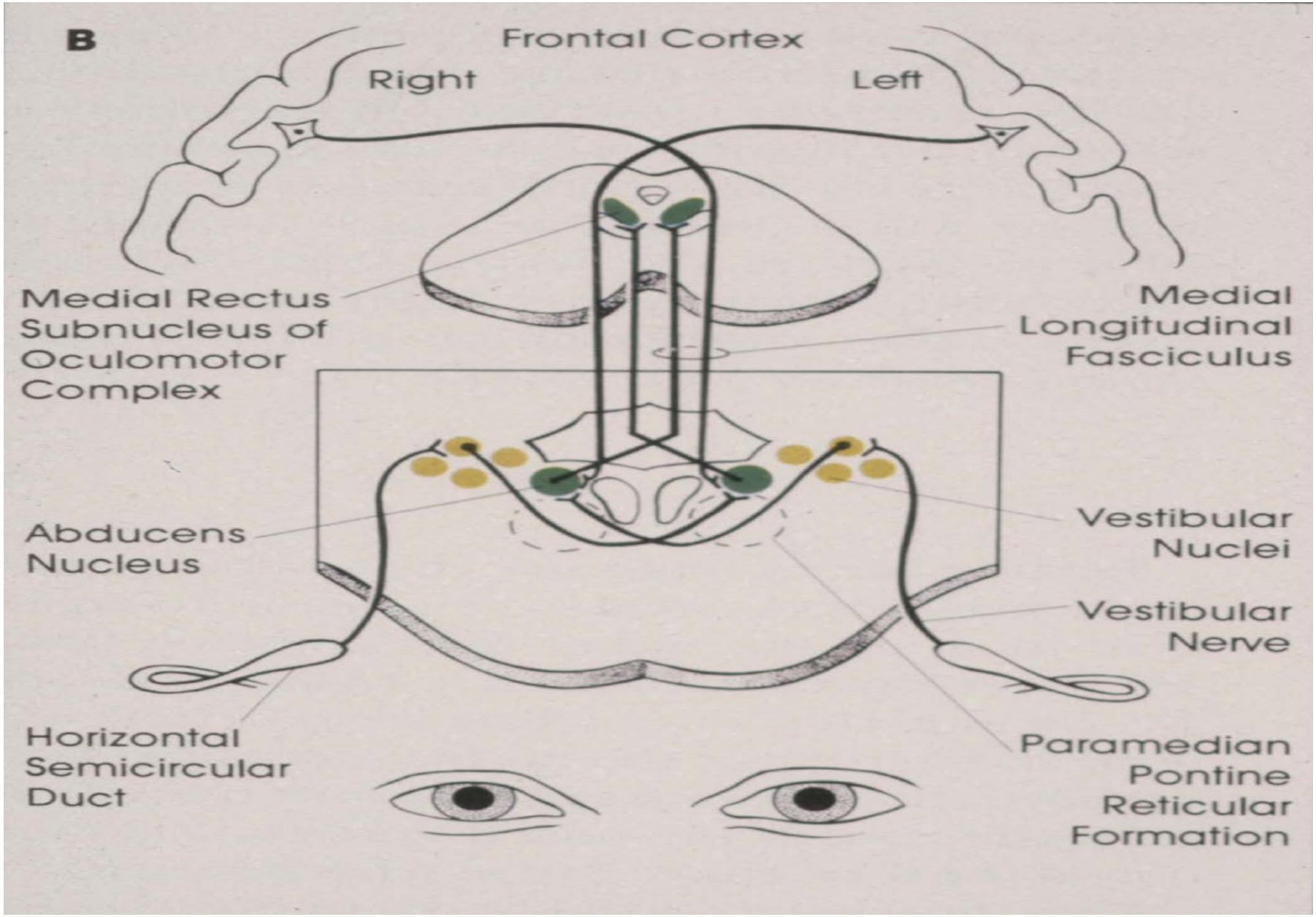
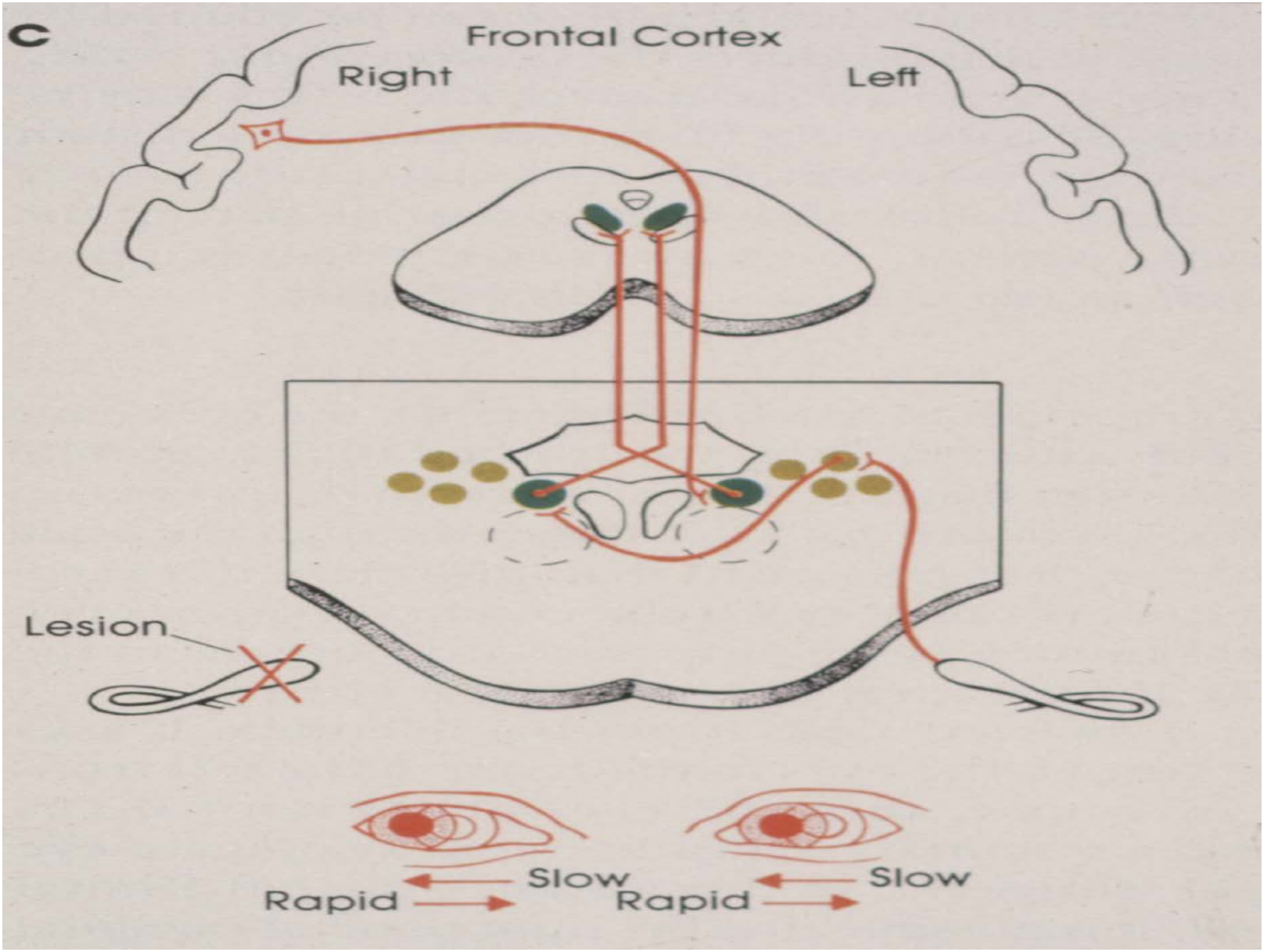

D
Frontal Cortex
Right
Left
3
4
1
2
1
2
3
4
Slow
Slow
Rapid
Rapid


B
Frontal Cortex
Right
Left
Medial Rectus Subnucleus of Oculomotor Complex
Medial Longitudinal Fasciculus
Abducens Nucleus
Vestibular Nuclei
Vestibular Nerve
Horizontal Semicircular Duct
Paramedian Pontine Reticular Formation


c
Frontal Cortex
Right
Left
Lesion
Slow
Rapid
Slow
Rapid

Case #1

39 year old man was recovering from an upper respiratory infection when he became violently dizzy, by which he meant a sensation of moment in the environment, associated with vomiting. Moving his head worsened the sensation, but no particular position brought it out. There was no hearing loss or tinnitus and no headache

Examination

- General examination normal
- Clockwise (from the examiner's perspective) tortional nystagmus, worst on leftward gaze but present in neutral and leftward gaze
- No counterclockwise nystagmus
- No vertical nystagmus
- No vertical skew on alternate cover
- Head thrust abnormal to the left
- Hearing normal
- Rest of neurological examination is normal

Diagnosis ?

- Labrynthitis
- Vestibular neuritis
- Cochlear neuritis
- Benzodiazepine toxicity
- Alcohol toxicity

Case #2

64 year old man with acute onset of dizziness, by which he means instability of gait. He says he feels as though he is being pulled to the left. There is no double vision or headache, but he recalls a brief sharp pain behind the left ear while shooting darts in a bar about three weeks earlier

Examination

- BP=150/90; HR=80; Afebrile
- No tenderness or bruits in neck
- Mental state normal
- Pupils and lids normal
- No hoarseness
- No hiccoughs
- No sensory loss on face or body
- Hearing normal
- Leftward beating horizontal nystagmus on left gaze, changing to rightward beating when eyes reach a position just left of neutral
- Vertical skew on alternate cover
- Head thrust test is negative in both directions
- On marching in place with eyes closed, he slowly rotates leftward
- Finger-nose-finger and heal-knee-shin normal

Diagnosis ?

- Lateral medullary (Wallenberg) stroke
- Acephalgic vestibular migraine
- Perilymphatic fistula
- Cerebellar stroke (PICA)
- Pontine infarct
- Alcohol intoxication
- Cerebellar stroke (AICA)

Case #3

34 year old woman with dizziness, by which she means a sense of impending faint, only occurring in the upright posture. The problem has been present for a couple of years but is clearly worsening in the past few months. Meclizine yields no benefit. She has been told by an autonomic specialist that she has postural orthostatic tachycardia syndrome (POTS). Midodrine causes hypertension but no benefit. Leg crossing with thigh clenching maneuvers have modest benefit but less so in the past three months.

Examination

- Blood pressure
  - Lying: 130/75
  - Sitting: 150/90
  - Standing: 110/65 with symptoms
- Heart Rate
  - Lying: 72
  - Sitting: 84
  - Standing: 110 with symptoms
- Cardiac examination is normal
- Mental state is normal
- Neurological examination is normal

Diagnosis ?

- Pheochromocytoma of the adrenal
- Postural Orthostatic Tachycardia Syndrome (POTS)
- Asymmetric septal hypertrophy
- Takotsubo-like cardiomyopathy
- Anxiety
- Paraganglioma of the carotid bulb

Case #4

72 year old man fell for unclear reasons, striking the back of his head. There was probably no loss of consciousness. He does not recall being dizzy prior to the fall, but since that event, he is experiencing paroxysms of dizziness by which he means a violent spinning sensation with nausea and sometimes vomiting. He says that he is hypersenstive to sounds in the right ear and loud sounds seem to exacerbate the sensation. His own voice is heard louder on the right and that sound alone can make him feel tilted and off-balance. Sometimes the environment jumps synchronously with his heart beat.

Examination

- BP 150/90 without orthostatic changes
- HR=80 without orthostatic changes
- Mental status normal
- On Dix-Hallpike testing, there is a nystagmus with right ear down that is tortional in the right ear and tortional/vertical in the left ear. It changes direction on sitting up.
- Sounds in the right ear reproduce the sensation and cause brief tortional nystagmus
- Rest of neurological examination is normal

Diagnosis ?

- Migrainous vertigo
- Vestibular Meniere syndrome
- Labrynthine contusion
- Superior canal dehiscence
- Post-concussion syndrome
- Perilymphatic fistula because of oval window dehiscence
- Perilymphatic fistular because of round window dehiscence

Case #5

A 46 year old woman complains of at least 20 years of episodic dizziness, by which she means a sensation of movement (as if she were on a boat). She has always had motion sickness, as do her sister and mother. She gets occasional “sinus” headaches by which she means a pain around one eye, usually relieved by OTC analgesics and/or decongestants. She also has ice cream headaches (“brain freeze”) and her mother says she had colic in infancy. During childhood, she had episodes of abdominal pain and underwent and appendectomy. She avoids alcohol because she get a “hangover” worst with red wine. An ORL diagnosis vestibular Meniere syndrome, but diuretics have not proved beneficial.

Examination

- BP=135/75 without orthostatic change
- HR=72 without orthostatic change
- Mental state: anxious and depressed but cognitive functions are normal
- No nystagmus in any position
- No hearing loss
- Motor and Sensory exams normal
- No ataxia
- Reflexes normal

Diagnosis ?

- Migrainous vertigo (Vertiginous migraine)
- Depression with anxiety
- Recurrent vestibular neuritis
- Perilymphatic fistula
- Alcoholism

Case #6

61 year old woman complains of constant dizziness for at least 30 years. She cannot use any other word to describe the sensation and specifically denies vertigo, near syncope and unsteadiness of gait. She says she is “dizzy all the time; dizzy day and night.” If she awakens in the night it is present but she does not think that it actually awakens her. Over the years she has consulted internists, otorhinolaryngologists, psychiatrists and neurologists. No medications have obliterated the symptom, including various anti-depressants, though benzodiazepines can sometimes produce temporary incomplete benefit. She is currently using lorazepam for this purpose. She denies any other drug use and does not drink alcohol, because it make her dizziness worse.

Examination

- General examination normal (no orthostasis)
- Mental state: cognitive functions are normal but she is obsessional, frequently repeating the same complaint (dizzy) and evincing pessimism that she can be helped
- Bilateral nystagmus on extreme horizontal gaze, fast phase in the direction of gaze
- No positional nystagmus
- No hearing loss
- Rest of the examination is normal

Diagnosis ?

- Meniere syndrome
- Acephalgic migrainous vertigo
- Anxiety
- Vertebrobasilar insufficiency
- Epileptic vertigo

Case #7

A 37 year old man had an attack of dizziness 10 years earlier, by which he meant a violent sensation of spinning associated with nausea and vomiting. There was also a roaring sound in his right ear, but no hearing loss. He was treated with a short pulse of steroids and meclizine 25 mg tid. The roaring in the ear and violent vertigo improved over about a six week period, but he was left with an unsteady feeling, which has never disappeared. He is particularly unsteady when in the dark or the shower. He has never suffered from headaches.

Examination

- General examination is normal
- No nystagmus in any position
- No hearing loss
- Motor exam is normal
- Sensory exam is normal except there is a Romberg sign
- No cerebellar ataxia
- Reflexes are normal

Diagnosis ?

- Anxiety
- Chronic acephalgic vertiginous migraine
- Perilymphatic fistula
- Meclizine toxicity
- Multiple sclerosis

Case #8

A 75 year old woman has her usual shampoo, hair cut and coloring done in the afternoon at her usual salon. After the appointment she feels a little bit unsteady but drives home and later retires for the night. In the middle of the night, she awakens with severe dizziness, by which she means dramatic vertigo with nausea and vomiting. There is no neck or head pain.

Examination

- BP=160/90 without orthostatic change
- HR=88 without orthostatic change
- No neck tenderness or bruit
- On Dix-Hallpike testing, with right hear down, after three seconds, there develops a small amplitude nystagmus which is tortional in the right eye and tortional with a slight vertical component in the left eye. The symptoms are reproduced by the maneuver. On sitting up, the nystagmus briefly reverses direction.
- Horizontal head thrust is negative
- There is no skew on the alternate cover test
- There is no hearing loss
- The rest of the examination is normal
- Despite being very dizzy intermittently, she can stand and walk

Diagnosis ?

- Benign paroxysmal positional vertigo caused by canalalithiasis in the right posterior vertical semicircular duct
- Vetebral dissection with cerebellar infarct (PICA)
- Basilar artery atherosclerosis with cerebellar infarct (AICA)
- Top of the basilar embolism with cerebellar infarct (SCA)

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  - Imbalance (gait disorder)
  - Anxiety (metaphorical)


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Dizzy?