

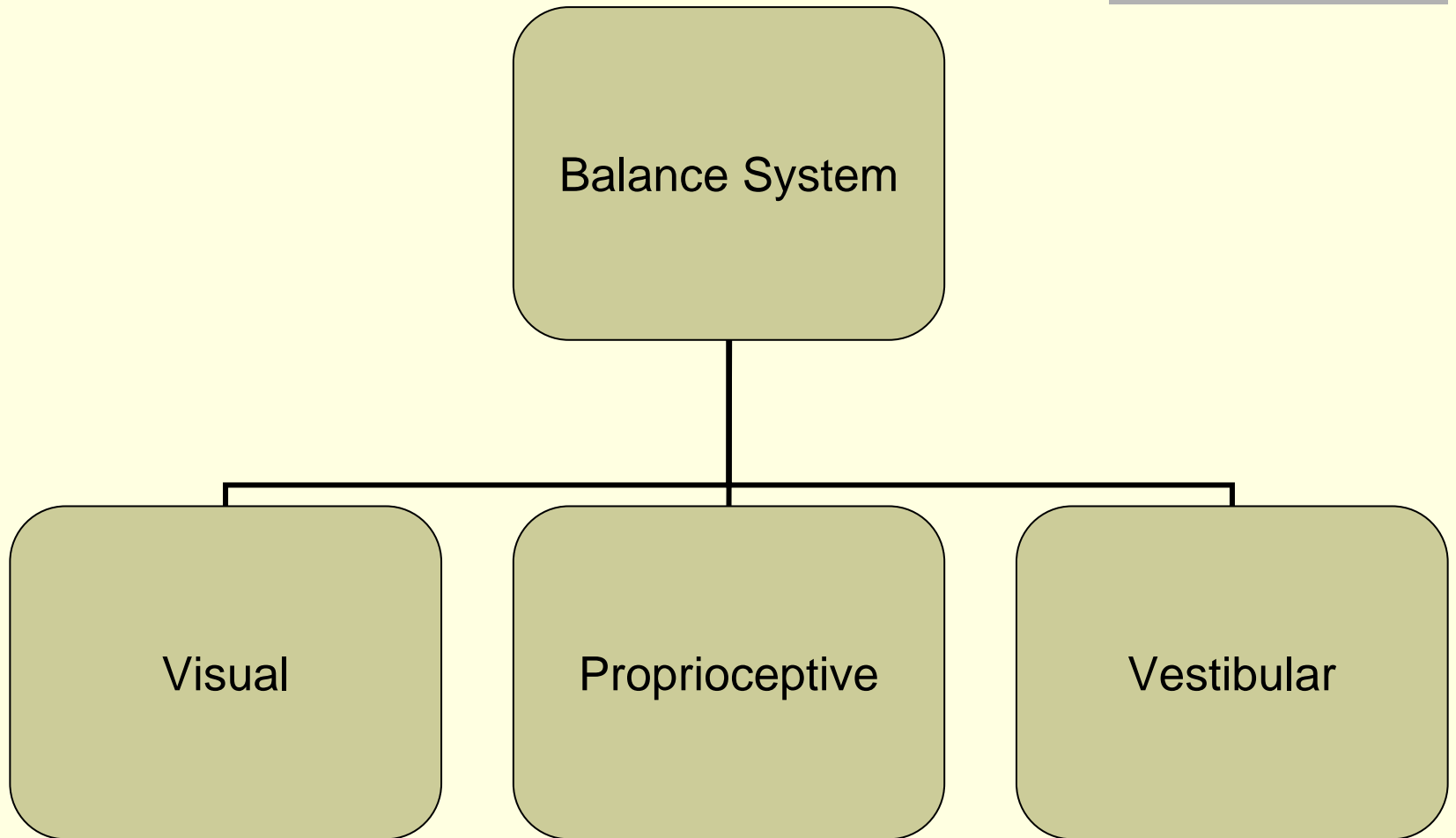
Approach to Dizzy Patient

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Objectives

- Define balance system
- Define vertigo
- Differential Diagnosis
- Bedside Tools for Diagnosis
- Specialized testing

How It Works



Fast Facts

- 5 million office visits per year for dizziness
- 40% of patients over 65 will fall each year
- 80% of patients over 65 have experienced dizziness
- Most common complaint for patients over 75
- Falls are the leading cause of injury for older patients and leading cause of accidental death over age 85

Dizziness

- Vertigo
- Disequilibrium
- Oscillopsia
- Lightheadedness
- Physiologic
- Multisensory

True Vertigo

Usually described as spinning, whirling, or turning

- Illusion of rotational, linear, or tilting of surroundings
- Will not cause syncope
- Problem with Brain or Inner Ear

Dysequilibrium

- Sensation of Instability of body positions
- Either walking, standing
- Feeling of being “off balance or imbalance”
- Usually a problem with Proprioception but can be caused by common cold or allergic rhinitis causing eustacian tube dysfunction

Oscillopsia

- Inability to focus on object with movement
- Difficulty reading while pushing shopping cart
- Difficulty reading sign while walking
- Problem with both Inner Ears
- Usually from Ototoxic drugs such as chemotherapy or vancomycin

Lightheadedness

- Sense of Impending Faint
- Presyncope
- Caused by hyperventilation, orthostatic hypotension, vasovagal stimulation, recent changes in medications

Physiologic

- Height Vertigo
 - Usually seen above 3 meters
 - Visual cues for body sway correction decreased due to height
- Motion Sickness
 - Rare under 2 years
 - Vision focused on stationary object with body in motion

Multisensory

- Diabetes
- Age related decompensation

Differential DX

- Start with a good history of symptoms
- 90% of work up
- Is there any hearing loss or tinnitus
- Medications
- History of Trauma
- Cardiac symptoms
- Anxiety
- Aura
- Vision change
- Focal neurologic symptoms

Vertigo Symptoms

■ Peripheral

- Severe
- Fatigues
- Nausea
- Hearing loss
- Sweating
- Worse with eye closure
- Nystagmus horizontal or rotary
- Ocular fixation reduces nystagmus

■ Central

- Mild
- Does not fatigue
- More weakness and falling
- Symptoms better with eye closure
- Nystagmus vertical
- Ocular fixation has no effect or makes nystagmus worse

Peripheral Vertigo

- Benign Paroxysmal Positional Vertigo
- Meniere's Disease
- Vestibular Neuronitis
- Labyrinthitis
- Otitis Media/middle ear pathology
- Traumatic Vestibular Dysfunction
- Cerebellopontine Angle Tumor
- Cervical vertigo

BPPV

- Most common cause of true vertigo
- Symptoms last for seconds to a minute
- Very positional: occurs when sitting up or rolling over. Also when looking up on top shelf
- Fatigable
- May follow head trauma, joint operation, or bedrest

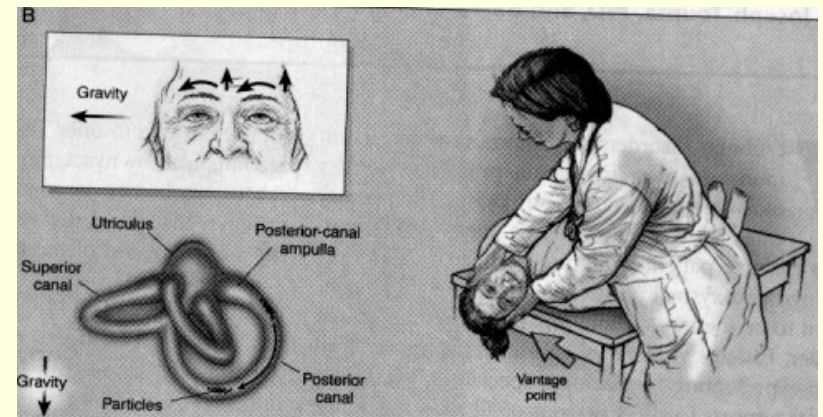
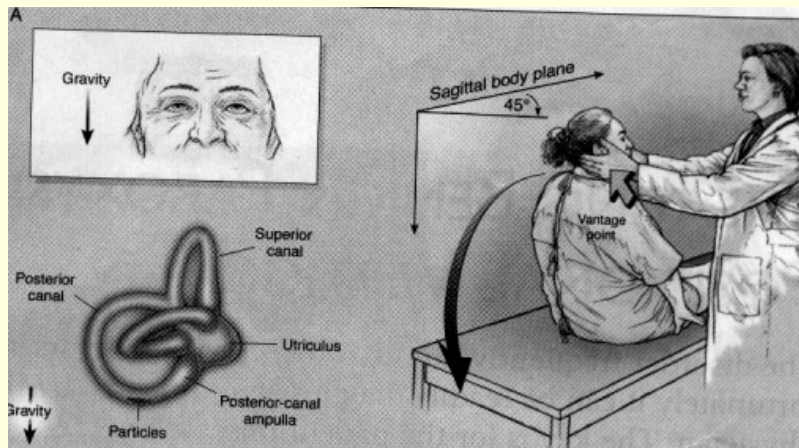
BPPV

- Diagnosed by history and physical testing
- Thought to be caused by loose particles in posterior semicircular canal from otolith organs of inner ear
- Dix-Hallpike maneuver
- Vestibular suppressants not helpful
- Treat with Epley's maneuver
 - 80+% successful
- May repeat

Dix-Hallpike

- Patient sitting on table
- Lay patient on back with head hanging 30 degrees and turned to either side
- Wait approximately 30 seconds
- Rotary nystagmus and vertigo will last for approximately 30 seconds
- After symptoms gone, sit patient up and observe for another 30 seconds
- Repeat on the other side
- The “bad” ear is the one that is pointed to the ground when symptoms are elicited

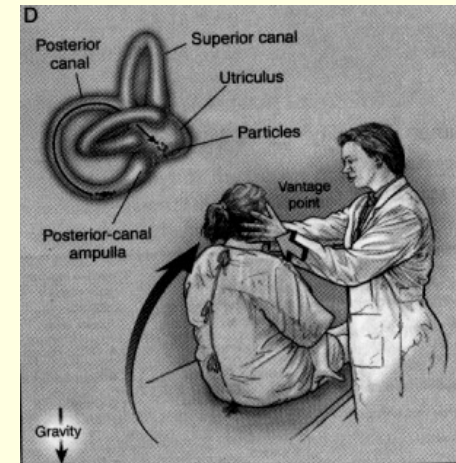
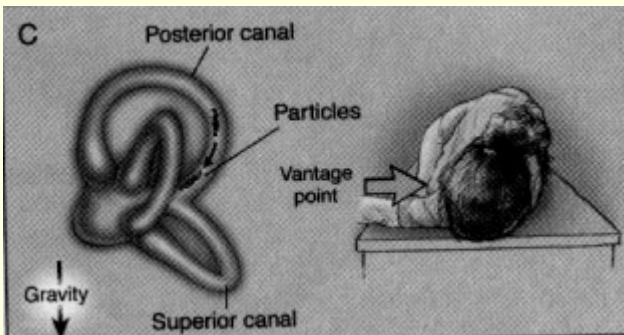
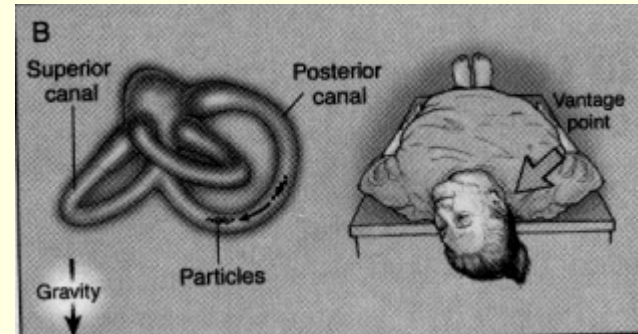
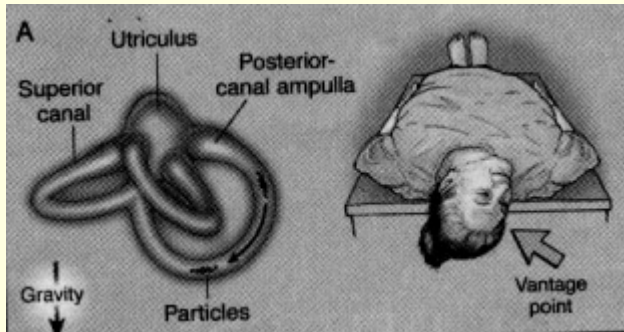
Dix-Hallpike



Epley's Maneuver

- Lay patient on back with “bad” ear to the ground, head hanging about 45 degrees
- SLOWLY rotate head until the “good” ear is toward the ground
- SLOWLY rotate patient up on “good” side WHILE KEEPING THE HEAD TILTED 45 DEGREES TO THE GROUND AT ALL TIMES
- SLOWLY rotate patient to sitting position

Epley's Maneuver



Meniere's Disease

- Fluctuating Sensorineural Hearing Loss
- Nystagmus
- Intermittent Vertigo: hours
- Low pitched roaring
- Aural fullness
- Diagnosis of exclusion
- Need at least two audiograms, usually pre and post treatment
- Low sodium diet, control allergies, HCTZ, occasionally short course of oral steroids
- Rarely surgery or chemoablation

Vestibular Neuronitis/Labyrinthitis

- Usually normal hearing with neuronitis, labyrinthitis usually with hearing loss
- Nystagmus
- May be after a recent URI or flu like illness
- Severe vertigo may last up to one week
- Some generalized unsteadiness can persist for up to 6 weeks
- Antivert useful for severe symptoms, then taper off.
- Vestibular rehabilitation can speed recovery

Otitis Media/Eustacian Tube Dysfunction/Cholesteatoma

- Effusion causes inflammation of inner ear through round window
- ETD causes pressure changes which translate into round window pressure and vertigo/dysequilibrium
- Antibiotics for acute infection and decongestants for serous effusion.
- Treat allergies with nasal steroid
- Cholesteatoma can erode inner ear structures

Inner Ear Trauma

- Basically inner ear concussion
- Usually transient vertigo/nystagmus with or without hearing loss
- Treat symptomatically with suppressants short term
- Do not treat long term due to inhibition of normal body compensation
- Vestibular rehabilitation helpful

Cerebellopontine Angle Tumors



Cervical Vertigo

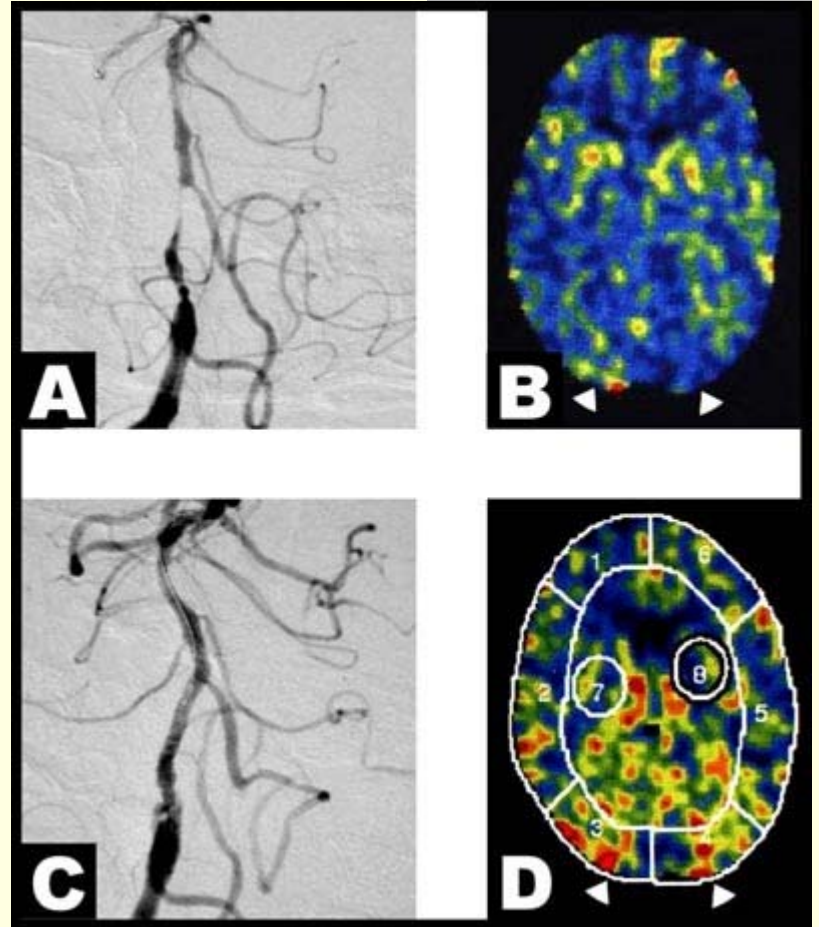
- Caused by somatic dysfunction of the cervical musculature
- Commonly caused by TMJ disorders or neck injuries/muscle spasm
- Treat the underlying cause and the vertigo will gradually subside

Central Vertigo

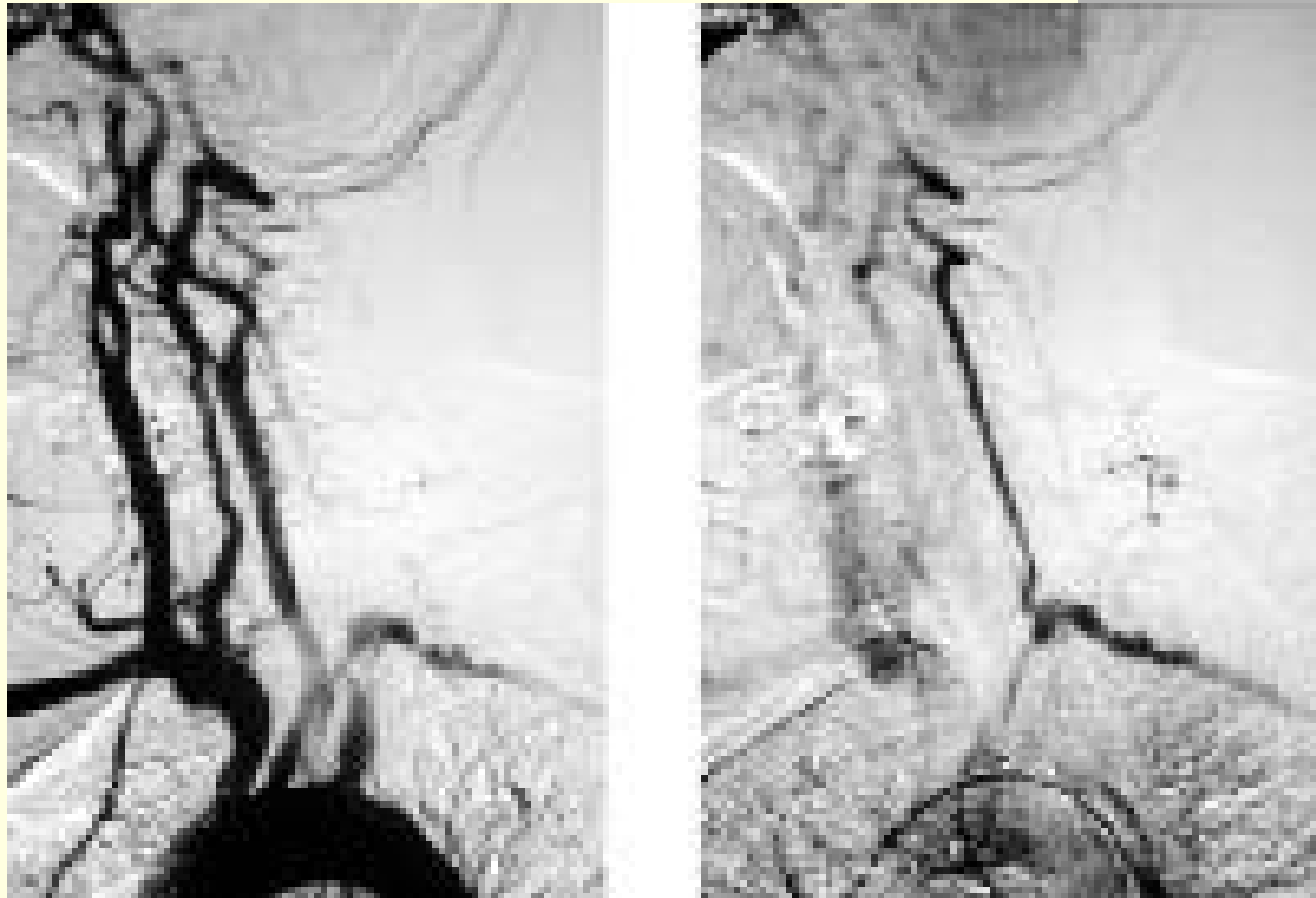
- Vascular
- Medications
- Metabolic
- Neurologic

Vertebrobasilar Syndrome

- Dizziness
- Diplopia
- Dysphagia
- Drop Attacks



Subclavian Steal Syndrome



Medications

- Antihypertensives
- Analgesics
- Anti-arrhythmics
- Psychotropics

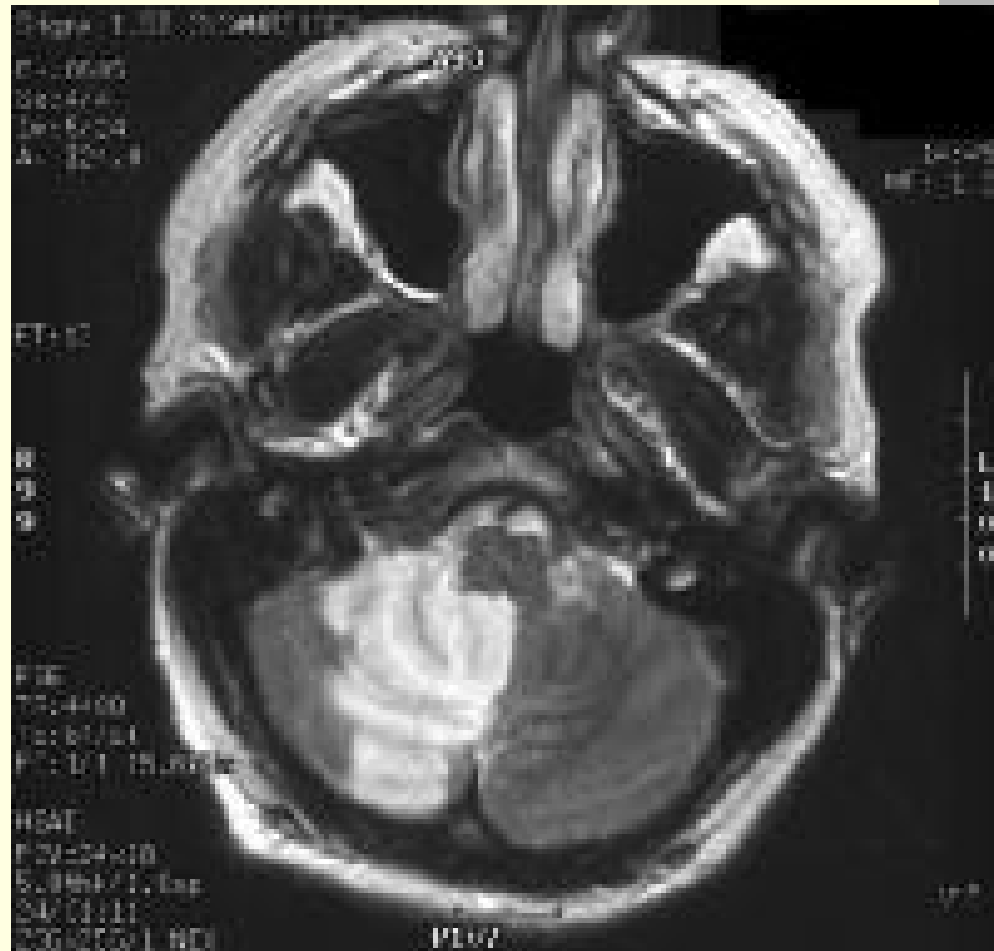
Metabolic Disorders

- Hypothyroid
- Hyperthyroid
- Diabetes
- Treat underlying disorder
- Patient may need vestibular rehabilitation

Neurologic

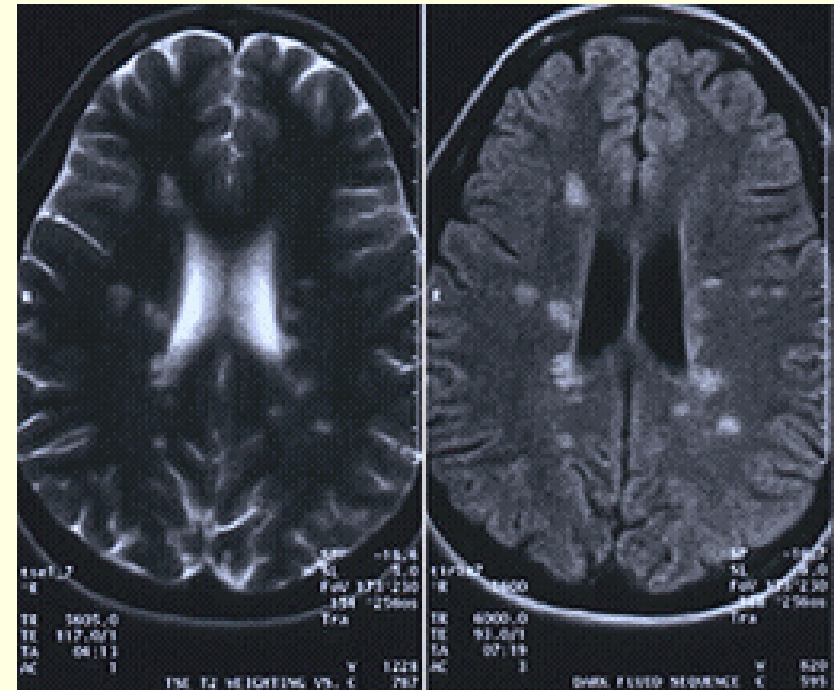
- Stroke
- Cerebellar lesions
- Parkinsons
- Multiple Sclerosis

Stroke



Multiple Sclerosis

- Initial symptom in 10-15% of pts
- Demyelinating disorder
- MRI
- Periventricular Plaques



Bedside Testing

- Gait test
 - Preponderance to 1 side
- Oculomotor exam
 - Nystagmus
- Romberg
 - Sharpened:heel to toe
- Fukuda test
 - March in place for 30 sec: turn to lesion
- Dix-Hallpike

The Next Step

- If no clear etiology proceed with specialized testing
- Complete Audiogram
- Electronystagmogram
- Visually evoked myogenic potentials
- Auditory Brainstem Response
- Electrocochleography
- Posturography
- MRI brain with gadolinium or MRA

Recap

- Start with thorough history
- Focused neurologic exam
- Basic office testing
- Treat what you see
- If no clear etiology, proceed with more specialized testing
- Enhance the normal compensation/healing response

Questions

